



**DVC**  
DIGITAL VENTILATED CAGE

DVC® Workplace  
Software Manual



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Please keep in mind that all the instruction manuals and release notes are available at the following web address:

<https://digitalcage-tecniplast.com/en/manuals.html>

**Original instructions for use**

In case of a disagreement between the translation and the original version of this manual or a notice or disclaimer, the original English version will prevail.

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Technical Support

For technical support, call +390332809711 or send an e-mail to [digilab-service@tecniplast.it](mailto:digilab-service@tecniplast.it)

Please refer to the link below to download Tecniplast Environmental Responsibility Policy:

<http://www.tecniplast.it/en/environmental-responsibility.html>



## PREFACE

Dear Customer,

This manual aims to provide the user with all the information and safety standards required for the correct and safe installation, use and maintenance of the machine you have purchased.

Keep the manual in an easily accessible place, known by the Installer, the Operator, the Supervisor, and the Service Technician, who should carefully read it to have a clear understanding of the installation, use, maintenance procedures, and hazardous applications to avoid.

This manual is an integral part of the system and should follow it, even in the event of a change of ownership, until final decommissioning.

Should the manual get damaged or lost, a copy can be requested from TECNIPLAST.

In order to receive technical assistance, spare parts or optional extras not required on order, contact TECNIPLAST and give the machine serial number, version, and year of manufacture (see label on the machine).

The Operator, the Supervisor and the Service Technician must know all the standards reported in this manual before using the machine or carrying out maintenance procedures.

## COMPANY CONFORMITY TO ENVIRONMENTAL POLICIES

At TECNIPLAST, both our production facilities and our end products reflect our commitment towards environmental policies in terms of:

- Compliance with the principles and contents of current laws and regulations concerning the environment;
- Reduction of the environmental impact deriving from our activities, maintaining the right balance between environmental, social and economic responsibilities;
- On-going request for innovative applications in order to reduce the environmental impact deriving from waste materials, energy consumption and to improve the use of natural resources and raw materials.
- Preventive evaluation of the environmental impact of new plants and processes and improvement of existing ones using all possible and economically sustainable solutions to increase our environmental performances.
- Incentivisation and co-responsibility of employees towards this policy by means of adequate training
- Use of effective tools to communicate principles and goals of such an environmental policy to our dealers during meetings and training courses;
- Defining during the design and development of new products the correct use and dismantling instructions to minimize environmental impact.

Please refer to the link below to download Tecniplast Environmental Responsibility Policy:

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## 1 DVC® ENVIRONMENT AND BASICS

Becoming familiar with the terminology and workspace of the DVC® system will help to follow these User guide concepts and procedures easily.

This section contains the following topics:

- DVC® Applications and main features
- DVC® terms and concepts
- DVC® workspace tools

### 1.1 APPLICATIONS AND WORKING PRINCIPLES

Tecniplast DVC® system has been developed to improve the work of Facility Managers and Operators by providing them with an easy-to-use monitoring and control tool.

Architecture:

Tecniplast DVC® system is designed to detect many different parameters coming from the IVC Cages. The DVC® system is composed of several items:

- The **DVC® Racks**, where standard IVC Cages are housed.
- The **DVC® Master**, usually located on the top of the Tecniplast Air Handling Unit. It provides power to all the DVC® Racks and shares data with all the DVC® boards and with the DVC® Server where different web applications run.
- The **DVC® Wireless RFID Readers**, used by Operators to properly read IVC Cages when opened under the laminar flow stations (or a working bench).
- The **DVC® Cage Top Holders**, used to house the above mentioned DVC® Wireless RFID Readers.
- The **DVC® Wireless RFID Readers Charger** needed to keep the DVC® Wireless Readers in place and charge them using induction technology when not used.
- The **DVC® web application for Managers**, designed to provide all the detailed information coming from the DVC® System.
- The **DVC® web application for Operators**, designed to provide all the necessary tools to operate with IVC Cages in the animal room.

The use of HTTPS encrypted protocols ensures total security of the system while User access is regulated through hierarchical User profiles.

The DVC® system allows Users to store all collected data, export data in various formats, and print hard copies as required. In addition, all events are recorded in the historical database.

### 1.2 BUOY

Buoys are USB keys with a unique serial number and assigned to a specific room registered within the DVC® system. They are used to define in which room a DVC® Master is located by simply plugging a registered Buoy to the selected DVC® Master.

### 1.3 DVC® MASTER UNIT CONNECTION

Refer to the **DVC® Master** User Manual supplied.



## 1.4 DVC® WORKSPACE FOR MANAGER

When launching the DVC® system, after entering credentials, the application window opens and displays the Home page.

### 1.4.1 DVC® MENU BAR

The Menu bar is made up of seven main drop-down submenus on the left side:

<b>Main Menu</b>	<b>Submenu</b>
<b>Home</b>	Facility Workload
	Facility Equipment Status
<b>Administration</b>	Accounts Manager
	Profile Manager
	Notifications setup
<b>Facility</b>	Sites Manager
	Facilities Manager
	Buildings Manager
	Floors Manager
	Rooms Manager
	Operators
	Researcher
	Research Group
	Researcher Protocols
	DVC Changing Protocols
	Custom Changing Protocols
	Animals
	Strains
	Experiments
Sickness Reasons	
Death Reasons	



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	Treatments
<b>Planner</b>	Planner Dashboard
	Operators Availability
	Task work packages
	Daily Task View
	Tasks tree Daily View
	Tasks
<b>Devices</b>	Units
	Buoys
	REM
	Masters
	Racks
	Rack Elements
	Cages
	Physical Cages
<b>Data</b>	Alarm History
<b>Report</b>	Tree Charts
	Daily Unit Reports
	Daily REM Reports
	Daily Facility Reports
	Racks Occupancy
	Cage Tracking
	Cage Census
	Cage Registrations
	Operators Feedbacks
	Daily Checks

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Sickness Report

---

Death Report

---

**Setup**

Equipment Configurations

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## 2 DVC® BASICS

### 2.1 GETTING STARTED

To access the Tecniplast DVC® interface, open the web browser and enter the URL address where the DVC® Server has been installed.

In general, the url address is composed by:

https:// + IP address (or DNS name) + /WDMWEB

For example https://192.168.251.61/WDMWEB/

If the URL has been entered correctly, the browser will display the **Login** page.

#### 2.1.1 LOGIN

To authenticate, insert credentials and click **Enter**.

The **first time** logging in, the default first-time password is identical to the username.

After logging in, it will be asked to set a new password, which will not expire.

The new password should be set considering the following rules:

- It must be at least 8 characters long.
- It must contain at least 1 upper case character.



- It must contain at least 2 digits.
- It can be used with special characters like punctuation, but they are not mandatory.

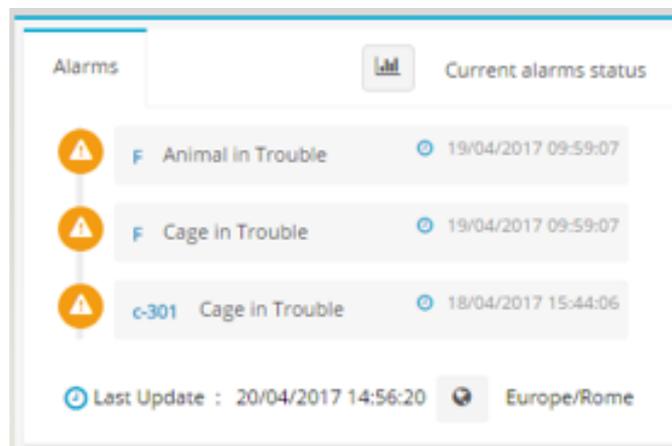


Once the password has been set, it cannot be changed unless attempting to recover it using the **password forgotten** function. To change the password, click on the **Proceed** button at the bottom of the page and wait until receiving an e-mail with the new temporary password, which will be changed once logged in.

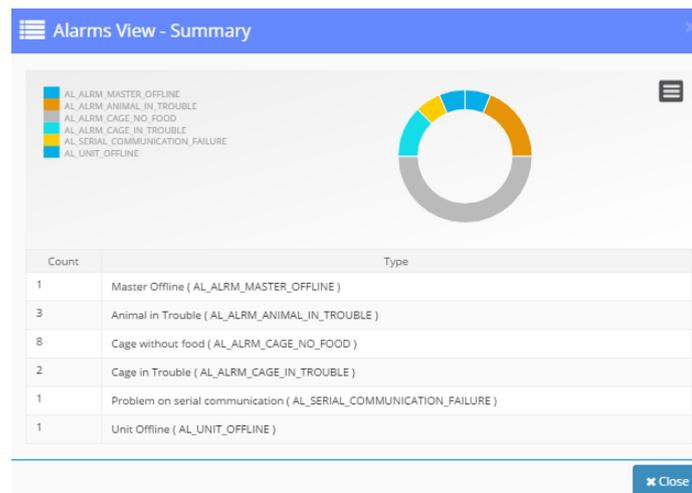
## 2.2 RIGHT SIDE BAR

This bar is always available whichever tab or window is browsed and displays crucial information about the entire DVC® system:

First, the view shows the **last five active alarms** currently open in the system.



Clicking on the icon  all the active alarms are grouped by type:

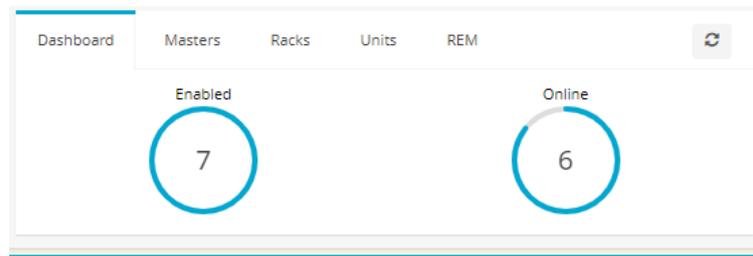


Moreover, in this section, there is the opportunity to choose **local time** from a list of all the



possible world time zones, clicking on the corresponding icon \_\_\_\_\_.

Below the Alarm section, another important section is displayed, called **dashboard**. This section shows how many devices are enabled and currently online.



By clicking on the different tabs, a detailed view of the corresponding item is displayed.

The last important piece of information displayed in this right side bar is the quick recap of the Facility cage occupancy:

	Positions	(%)	Cages	Registered	In alarm
Not Localized	0	0%	0	0	0
ALL	80	97%	78	15	15

Last Update : 15/10/2021 15:33:18

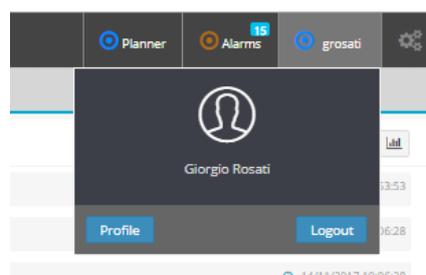
- **Positions:** number of DVC® slot positions in the facility
- **(%):** Percentage of occupied positions
- **Cages:** Number of Cages inserted into the DVC® slots
- **Registered:** Number of Cages registered in the system which are currently inserted into the DVC® Racks
- **In alarm:** number of Cages currently in alarm in the system



Keep in mind that the "Not Localized Area" should always be empty because otherwise, the DVC® system cannot localize cages.

### 2.3 HOW TO LOG OUT

For security reasons, Users should always log out once finished working. To accomplish that, click on the username on the top right corner and then the **Logout** button.

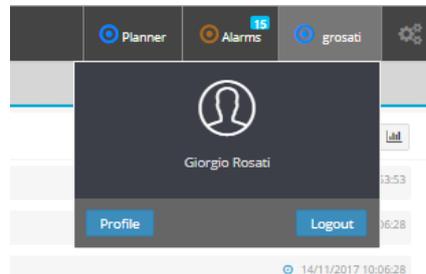


After logging out, the user will be immediately disconnected. In any case, for security reasons,



any active session is automatically closed after 5 minutes of inactivity.

## 2.4 USER PROFILE



By clicking on the **Profile** button, the user has access to a full detailed table referring to all the enabled functionalities of the DVC<sup>®</sup> system related to the user currently logged in.

Resources	Permissions	Locations	Alarms Subscriptions
<b>Home</b> 2			
Home			
Facility Workload			FULLCONTROL
Facility Equipments Status			FULLCONTROL
<b>Administration</b> 3			
Accounts Manager			FULLCONTROL
Units Manager			FULLCONTROL
Profile Manager			FULLCONTROL
<b>Facility</b> 18			
Structure Editor			FULLCONTROL
Sites Manager			FULLCONTROL
Facilities Manager			FULLCONTROL
Buildings Manager			FULLCONTROL
Floors Manager			FULLCONTROL
Rooms Manager			FULLCONTROL
Operators			FULLCONTROL
Researchers			FULLCONTROL
Research Group			FULLCONTROL
Research Protocols			FULLCONTROL
DVC Changing Protocols			FULLCONTROL
Custom Changing Protocols			FULLCONTROL
Animals			FULLCONTROL

These functionalities are grouped by:

- Access to Resources;
- Enabled Permissions;
- Access to Locations;
- Alarm subscriptions;

## 3 HOME

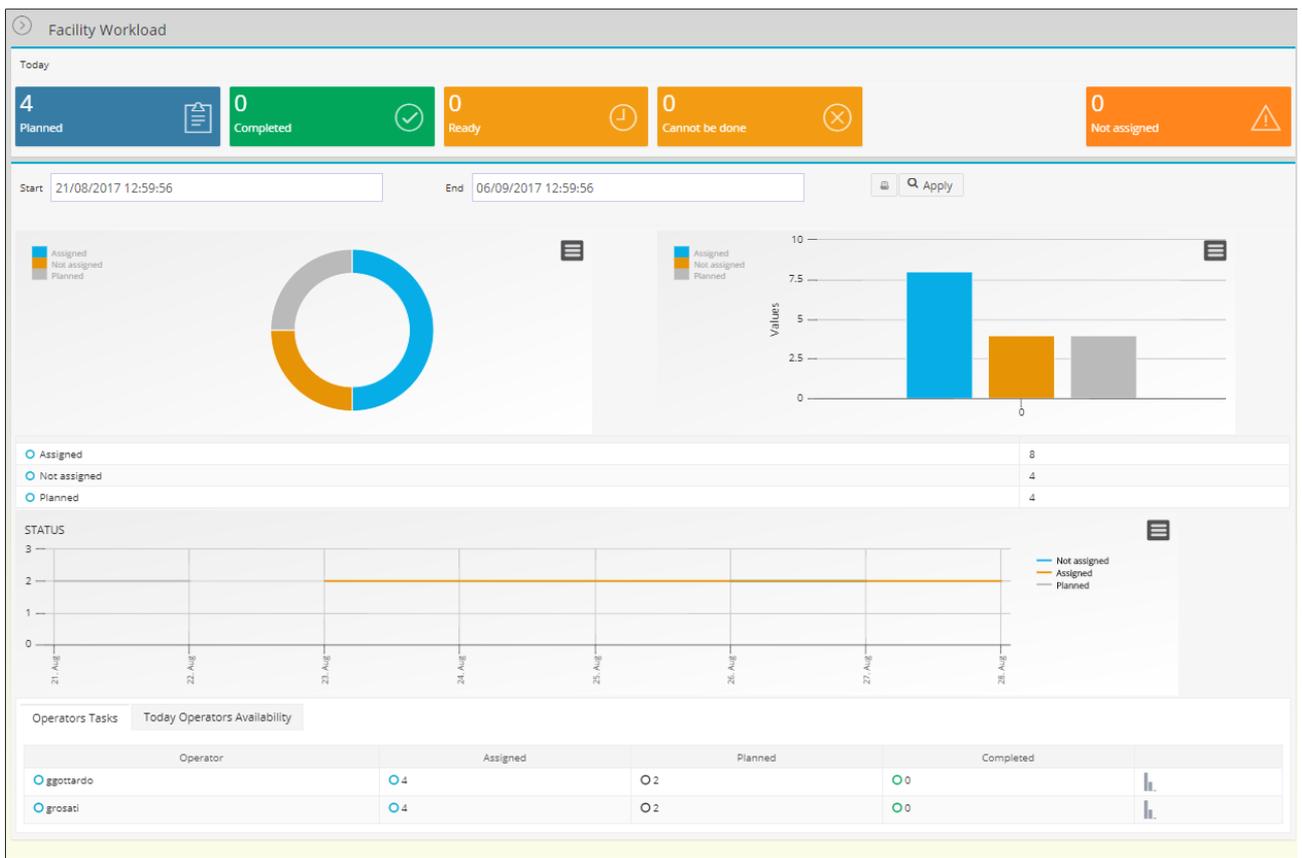
Once the authentication has been completed, the homepage will be displayed.



In the Home Page, the user can find the **current Facility Workload** based on the planned tasks coming from the DVC<sup>®</sup> system and a second section called **Facility Equipment Status**. Finally, a recap of all the equipment status is presented.

### 3.1 FACILITY WORKLOAD

In this section, the user can find a recap of the current workload of the facility with the trend in the selected period.



A task is a group of activities, and any activity can be:

- **Planned:** the DVC<sup>®</sup> Planner has scheduled the activity for someone for the current day
- **Assigned:** the DVC<sup>®</sup> Planner has scheduled the activity for someone in the future
- **Ready:** the activity is being performed at the moment
- **Completed:** the activity has been performed by the Operator
- **Cannot be done:** the Operator rejected the activity that has been recorded accordingly
- **Not Done:** if the Operator has not performed the activity assigned for the current day (planned), at midnight, the activity is converted into a Not Done activity
- **Partially completed:** It refers to the task (group of activities), and it occurs when some activities in the task have been performed while some others have not been performed or have been rejected

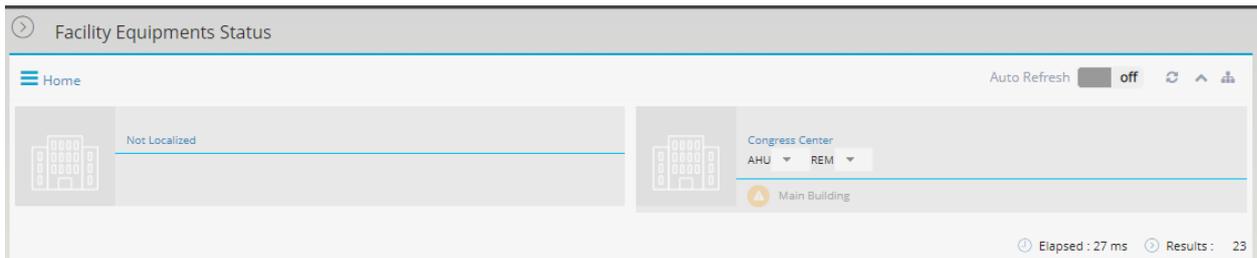


## 3.2 FACILITY EQUIPMENT STATUS

In this section, the user can surf in the facility and see how the DVC® equipment performs. There are two different available views to navigate through the facility:

### 3.2.1 BLOCKS VIEW

By clicking on the  button, the user can display the units organized by Building, Floor, Room, Master (Buoy) and Racks, down to the Cages.

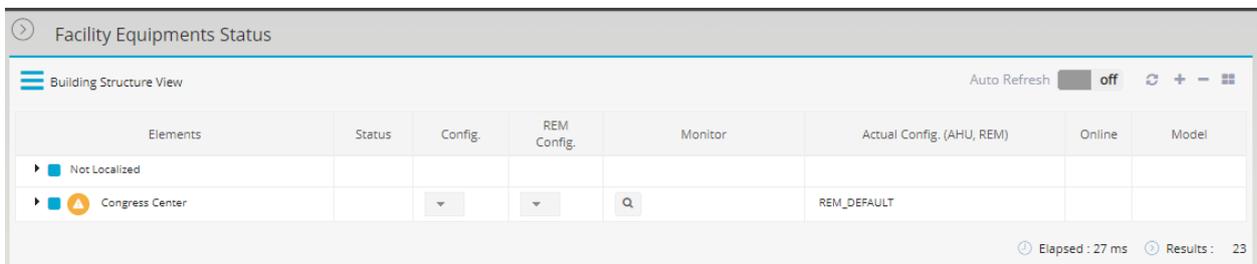


### 3.2.2 BUILDING STRUCTURE VIEW

By clicking on the  button, a tree view is displayed. Here the user can check out statistics and functions about the connected or registered devices, open the device monitor, check the status.



Remember that every DVC® Master linked to a registered Buoy is placed inside a Room, Floor and Building. Any unregistered DVC® Master or Buoy will be placed in the "Not Localized Area".



The user can also **expand all** or **collapse all** by clicking on the + - buttons.

By clicking on the  icon, a brief review of the select building/floor/room/equipment will pop up.



Master: dvc-master-showroom

Device Name: dvc-master-showroom

Serial: dvc-master-showroom

Model: Master Base Model (DVC Master Base Model)

Type: DVC

General Data | Configurations History | Buoy History | Status History | Alarms History | Events History

Description: DVC Commissioned Master

Status: ENABLED

Buoy: Pos\_A

Close

A new window will pop up by clicking on the / icon, showing a deep insight into the monitored equipment (Master and Rack).

Facility Equipments Status

Tecniplast > Tecniplast HQ > Congress Center > Ground Floor > Showroom > 17001066A

Rack View

17001066A (17001066A) - Side A | Layout (10x8) | Model Rack Base Model | Family DVC

A B C D E F G H

1 2 3 4 5 6 7 8 9 10

Rack Occupancy: 78 / 80

In alarm: 15

Registered: 15

## 4 ADMINISTRATION

Here the user finds a complete list of the functionalities and sub-menus needed to create profiles and set up the alarm notification.

### 4.1 ACCOUNTS MANAGER

From the **Account Manager** page, it is possible to edit profile info or edit other Users' profiles



if granted.

The screenshot shows the Accounts Manager interface with a table of users. The table has columns for Name, Family Name, Login, Profile, Mail, Unit, and Status. The first three rows represent built-in users: facility, operator, and Researcher (Andrea). The remaining rows represent other users with various profiles and email addresses.

Opts.	Name	Family Name	Login	Profile	Mail	Unit	Status
Q	facility	facility	facility	facility	UNDEFINED	Facility	ⓘ
Q	operator	operator	operator	operator	UNDEFINED	Facility	ⓘ
Q	Andrea	Maggio	amaggio	Facility_Web	andrea.maggio@tecniplast.it	Facility	ⓘ
Q	AndreaNazzareno	Peruffo	aperuffo	Facility_Web	andrea.peruffo@tecniplast.it	Facility	ⓘ
Q	Bill	Profic	bill	Facility_Web	BillP@TecniplastUK.com	Facility	ⓘ
Q	Cameron	Jaillet	CameronTP	Facility_Web	cameron@tecniplast.com.au	Facility	ⓘ
Q	Cario	Demaide	cdemaide	Facility_Web	cario.demaide@tecniplast.it	Facility	ⓘ
Q	Chantal	TARABHAT	chantal	Facility_Web	chantal@tecniplast.fr	Facility	ⓘ
Q	Cristian	Zinca	zinca	Facility_Web	cristian.zinca@seapaco2000.ro	Facility	ⓘ
Q	Daniel	Stalker	danielTP	Facility_Web	daniel@tecniplast.com.au	Facility	ⓘ

There are three built-in Users: **Facility, Operator and Researcher**.

- **Facility** is the default user as the head of the facility. Therefore, all other users profiles should be created from this one.
- **Operator** is the default profile for all the users (Animal Care Taker) who should not gain access to any part of the administrative interface
- **Researcher** is the default profile for all the potential researchers who should gain access to some parts of the administrative interface.

#### 4.1.1 ADD A NEW USER

To create a new User, click on the **Add** button. Then, a new window is shown, and the fields have to be filled:

- **Login:** enter a unique name for the new user. This is the username of the Login page. Once created, the name cannot be edited anymore.
- **Profile:** choose the profile level of the new user. The profile is a collection of **Locations, Resources and Permissions** available to all users with the same profile. As user permissions are restricted to the resources and locations specified for the selected profile, remember to select the correct profile, check or edit the permissions of an existing profile or create a new profile before creating or enabling a new account.
- **Name, Family Name and Mail:** these fields are mandatory and can be modified any time after creation.
- **Phone Number:** enter a valid phone number (this field is not mandatory).



Before the first Login, the account is still suspended. First, the user has to log in by using the same password as the username. Then, the final password can be fill.

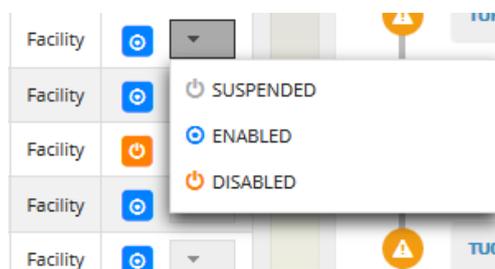


#### 4.1.2 EDIT USER

To edit an existing User, click on the  button. Once the profile has been modified, click on **Update** to confirm the changes or click **Close** to close the **Account Update** window without saving.

#### 4.1.3 REMOVE OR DISABLE USER

To disable a User, click on the  button.



Three different options are displayed:

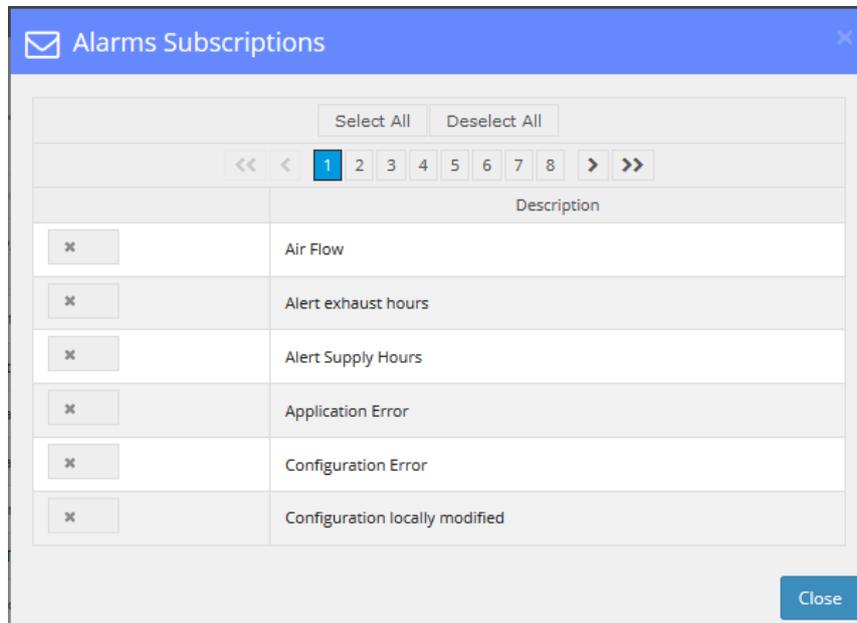
- **Enabled:** It means that the user is active and can interact with the DVC® User interface.
- **Disabled:** It allows to disable a user from entering the system. If a disabled user tries to Log in, the system will reject the request and ask the user to contact a system administrator.
- **Suspended:** This state is applicable when there is a need to reset the credentials of a specific user. For example, if a user forgets his/her password, the administrator can change the state to SUSPENDED. When this happens, the Login of the user will be as if he/she has to log in for the first time. Therefore, the password will be the same as the username, and a new password can be set. If the system uses LDAP, this state does not work. Contact the local IT manager to be enabled to gain access again.

#### 4.1.4 EDIT ALARM SUBSCRIPTIONS

To view and edit alarm subscriptions, click on the  button. Then, the user can either enable/disable a single subscription by clicking on each one or enable/disable all



subscriptions by clicking on **Select All** or **Unselect All** buttons. The selected types of alarm will generate alarm notifications when occurring in the animal rooms.

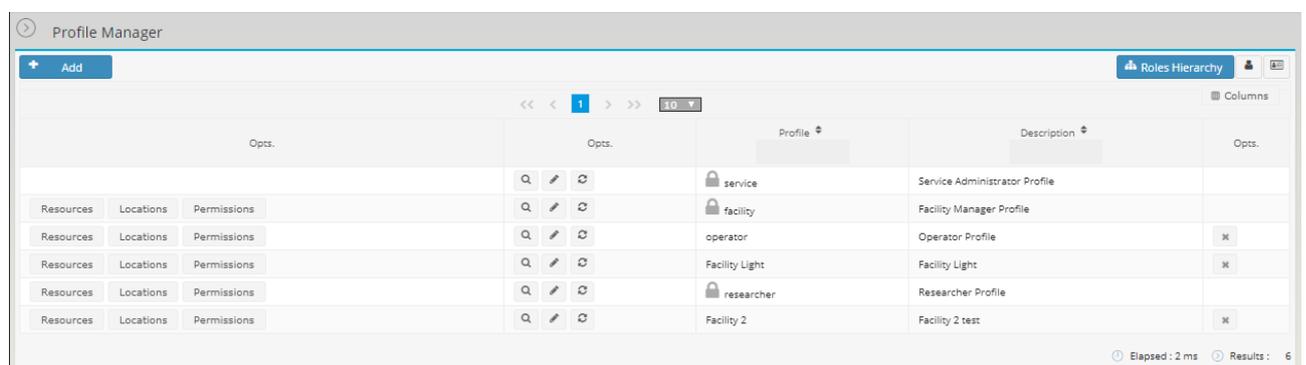


For a detailed explanation of all the alarms, see annexe A.

## 4.2 PROFILE MANAGER

The profile manager allows adding, edit and remove profiles. Profiles are used to grant access to defined rooms and/or units specifying the access type for that resource. However, they can also grant or deny access to system-wide resources like other users' profile management or structure, building, room etc. In addition, there are three built-in unmodifiable and undeletable profiles: **Facility, Operator and Researcher**, with already set permissions. All other profiles can be created from one of these default profiles.

Each user with the same profile has the same permissions and can access the same resources. For this reason, it is recommended to take advantage of the profile permissions inheritance by first creating profiles for the supervisors and then creating child profiles with fewer permissions for the employees.



Please note that these grants will be inherited by each user and profile based on a restrictive policy. For example, suppose a profile has permissions to watch or edit a building, and these permissions are removed. In that case, every child (both profiles and users generated from or related to this profile) will no longer be able to check the same building even if they were



previously granted to do so.

#### 4.2.1 ADD A NEW PROFILE

To add a new profile, click on the Add button and fill in the requested fields. First, the user needs to give a name to this new Profile and enter a Description; then, it is requested to choose the Parent Profile to inherit the features.

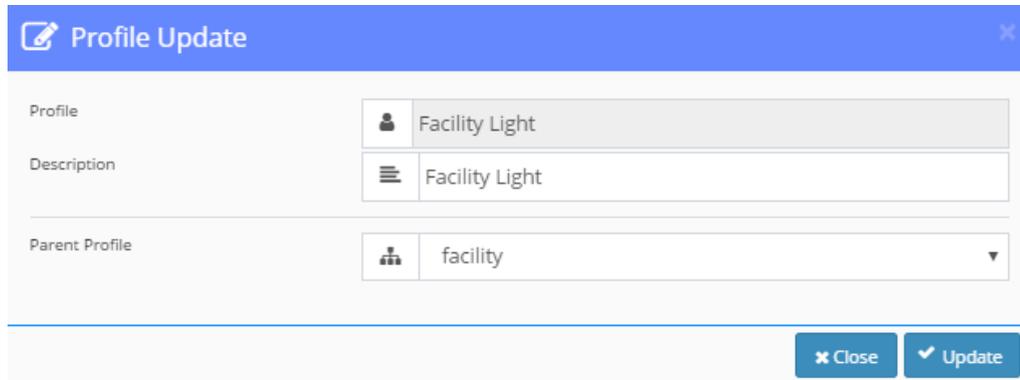
The screenshot shows a 'Profile Creation' dialog box with the following fields and controls:

- Profile:** A text input field with a person icon on the left.
- Description:** A text input field with a list icon on the left.
- Parent Profile:** A dropdown menu with a group icon on the left and the text 'facility' selected.
- Buttons:** 'Close' and 'Add' buttons located at the bottom right of the dialog.



## 4.2.2 EDIT AN EXISTING PROFILE

To edit the description of an existing profile, click on the  button.



**Profile Update**

Profile: Facility Light

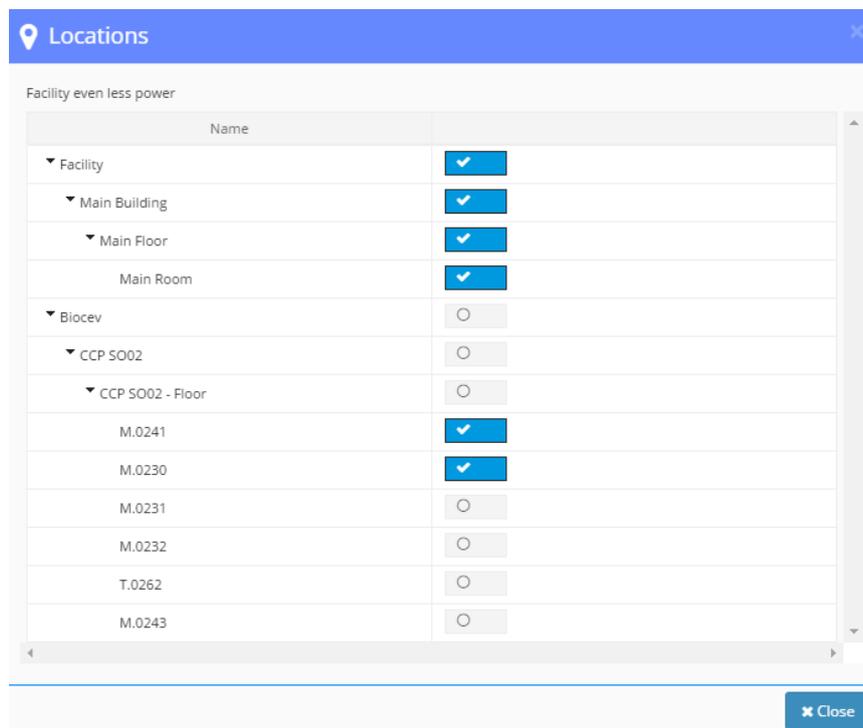
Description: Facility Light

Parent Profile: facility

## 4.2.3 SELECT LOCATIONS

For any new profile, the user must select the locations where this profile is enabled to receive information and navigate. Clicking on the  button, a new window (like the one displayed hereunder) will pop up, and it will be possible to set different permissions. This is useful when it is important to separate operations across different locations and/or teams.

The lower location level to which a profile can be enabled is the room level.



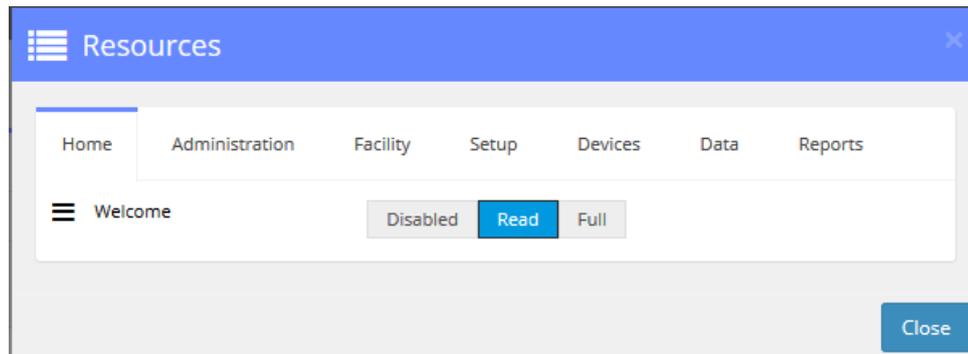
**Locations**

Facility even less power

Name	
Facility	<input checked="" type="checkbox"/>
Main Building	<input checked="" type="checkbox"/>
Main Floor	<input checked="" type="checkbox"/>
Main Room	<input checked="" type="checkbox"/>
Biocev	<input type="checkbox"/>
CCP SO02	<input type="checkbox"/>
CCP SO02 - Floor	<input type="checkbox"/>
M.0241	<input checked="" type="checkbox"/>
M.0230	<input checked="" type="checkbox"/>
M.0231	<input type="checkbox"/>
M.0232	<input type="checkbox"/>
T.0262	<input type="checkbox"/>
M.0243	<input type="checkbox"/>

## 4.2.4 SELECT RESOURCES

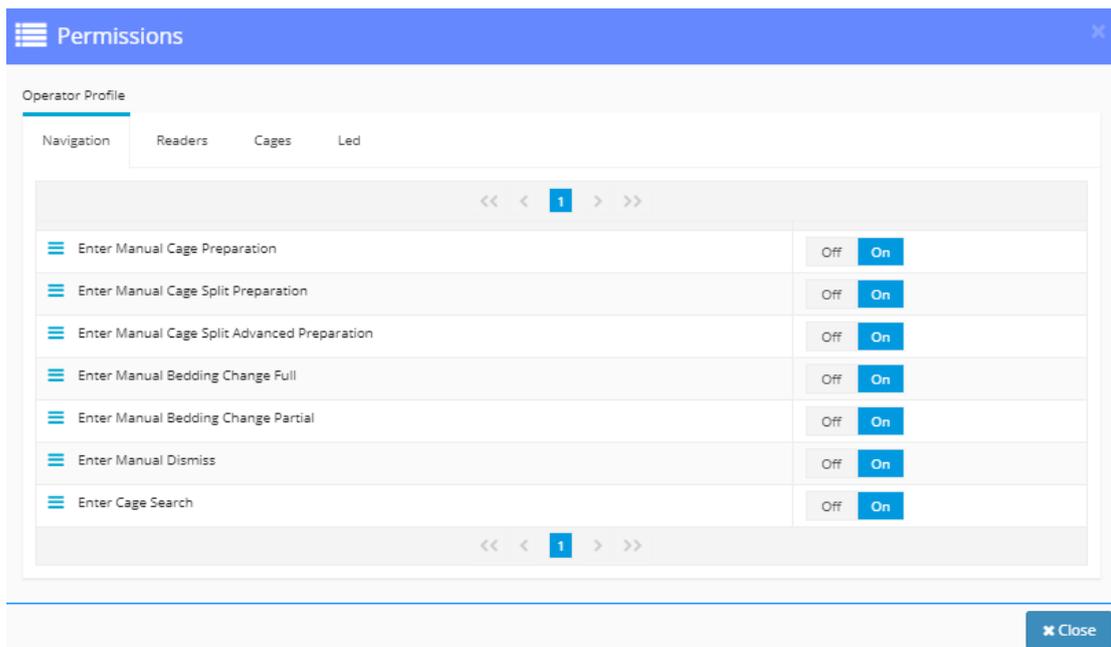
To edit the available resources for that profile, click on the  button and browse the different tabs for different sets of permissions. A window like the one displayed hereunder will pop up. This is useful when the user wants to set or change general administrations settings or change permissions to all the locations made available in the **Location Administration** window and consequently on the available appliances.



These profile settings apply to all the users within the same profile.

#### 4.2.5 ASSIGN PERMISSIONS

To assign the available permissions for that profile, click on the **Permissions** button and browse the different tabs for different sets of permissions. Permissions are related to what this profile can do and see working with the DVC<sup>®</sup> Operator interface. For example, a window like the one displayed hereunder will pop up. This is useful when it is requested to set or change general administrations settings or change permissions to all the users.

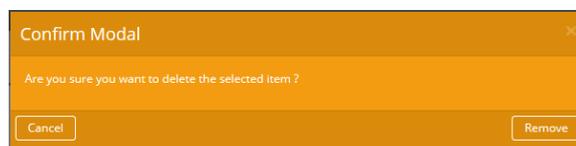


These profile settings apply to all the Users within the same profile.

For a detailed explanation of all the permissions, please refer to Annex B.

#### 4.2.6 REMOVE AN EXISTING PROFILE

To remove a profile, click on the **x** button and then choose **Remove**. If the profile is still in use or has access to any resource, it cannot be removed, and an error message will pop up.





## 4.3 NOTIFICATION SETUP

The notification setup allows the user to decide when the e-mail notifications should be sent.

Day	Status	Time Range
MONDAY	Disable	11-18
TUESDAY	Disable	4-12
WEDNESDAY	Disable	0-24
THURSDAY	Disable	0-24
FRIDAY	Disable	0-24
SATURDAY	Enable	10-18
SUNDAY	Disable	10-18

 Please note that the white bar is the time of the day the alarms are not sent.

### 4.3.1 HOW TO CHANGE NOTIFICATION TIMERS

The blue bar indicates that e-mail notification will be sent automatically to any user who has a subscription for the occurred event if the related warning or error is triggered during that period. White zones indicate that no e-mail notifications will be sent, no matter the error or warning triggered during that period. For example, in the previous image, notifications will be sent on Monday from 00:00 to 11:00 and from 18:00 to 23:59.

### 4.3.2 ENABLE OR DISABLE NOTIFICATIONS

When **enabled**, notifications will be sent and displayed only within the pre-set time interval. When **disabled**, the user will receive notifications without any time limit. Once all settings have been carried out, click on the **Update** button to confirm changes. All modifications will be lost if this window is closed or swap to another window without clicking on the Update button.

 Please note that all the users share the notification period. This is a general Facility setting.

## 5 FACILITY

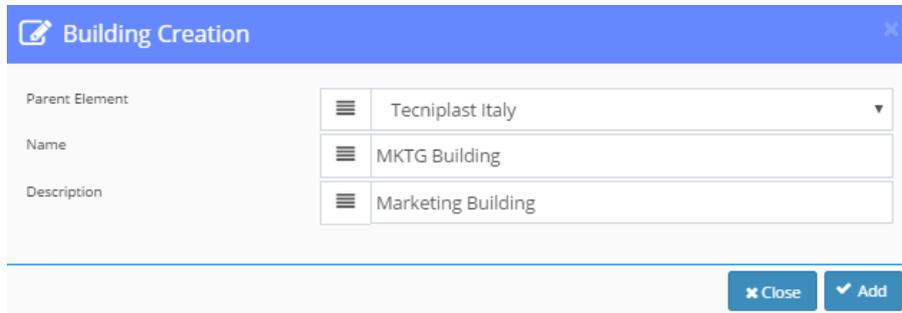
The Facility tab allows to manage the configuration of the buildings.

There are several layers in the facility:

- **Sites Manager**: for instance, Tecniplast company
- **Facilities Manager**: for instance, Tecniplast Italy
- **Buildings Manager**: for instance, Congress Center
- **Floors Manager**: for instance, ground floor
- **Rooms Manager**: for instance, Showroom



By clicking  to create a new Building and enter the Parent element.

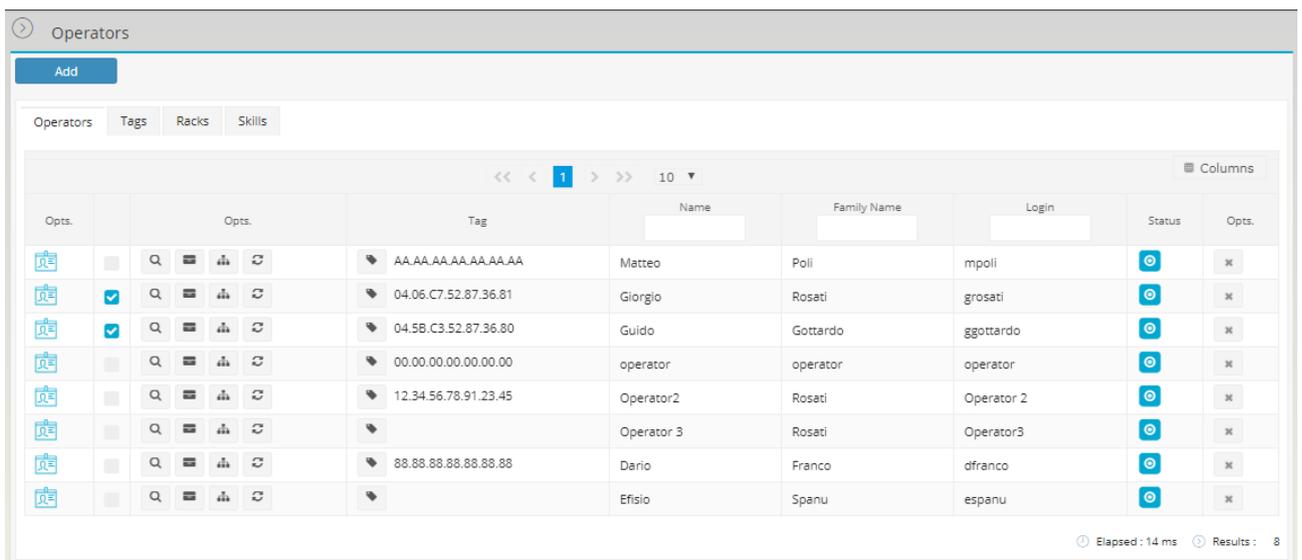


The dialog box titled "Building Creation" has a blue header with a pencil icon and a close button. It contains three input fields: "Parent Element" with a dropdown menu showing "Tecniplast Italy", "Name" with a text field containing "MKTG Building", and "Description" with a text field containing "Marketing Building". At the bottom right, there are "Close" and "Add" buttons.

By doing this for all the different levels, it is possible to recreate the entire Facility structure.

## 5.1 OPERATORS

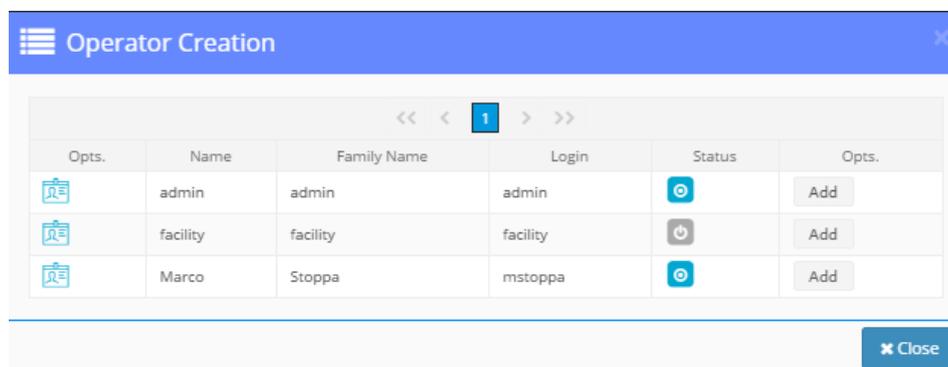
In this section, the user can find the list of all the current users registered in the DVC® system as Animal Care Taker, who can access the web application made for working in the Animal Rooms (DVC® Operator).



The "Operators" table shows a list of users with columns for Opts., Tag, Name, Family Name, Login, Status, and Opts. The first row is selected. The table includes search, filter, and refresh icons for each row.

Opts.	Opts.	Tag	Name	Family Name	Login	Status	Opts.
	<input type="checkbox"/>	AA.AA.AA.AA.AA.AA.AA	Matteo	Poli	mpoli		
	<input checked="" type="checkbox"/>	04.06.C7.52.87.36.81	Giorgio	Rosati	grosati		
	<input checked="" type="checkbox"/>	04.58.C3.52.87.36.80	Guido	Gottardo	ggottardo		
	<input type="checkbox"/>	00.00.00.00.00.00.00	operator	operator	operator		
	<input type="checkbox"/>	12.34.56.78.91.23.45	Operator2	Rosati	Operator 2		
	<input type="checkbox"/>		Operator 3	Rosati	Operator3		
	<input type="checkbox"/>	88.88.88.88.88.88.88	Dario	Franco	dfranco		
	<input type="checkbox"/>		Efisio	Spanu	espanu		

To create a new Operator, click on  and then  from the list of available ones.



The dialog box titled "Operator Creation" shows a table with columns for Opts., Name, Family Name, Login, Status, and Opts. The table lists three operators: "admin", "facility", and "Marco". Each row has an "Add" button. At the bottom right, there is a "Close" button.

Opts.	Name	Family Name	Login	Status	Opts.
	admin	admin	admin		Add
	facility	facility	facility		Add
	Marco	Stoppa	mstoppa		Add



Please note that it is possible only to add already created users (see Paragraph 4.1 Accounts Manager)



Once the user has been added, it is necessary to assign a valid RFID TAG number to this user by clicking the corresponding icon



Opts.	Opts.	Tag	Name	Family Name	Login	Status	Opts.
		AA.AA.AA.AA.AA.AA.AA	Matteo	Poli	mpoli		
		04.06.C7.52.87.36.81	Giorgio	Rosati	grosati		
		04.58.C3.52.87.36.80	Guido	Gottardo	ggottardo		
		12.34.56.78.91.23.45	operator	operator	operator		
			Marco	Stoppa	mstoppa		

**Tag - mstoppa**

Name: Marco  
Family Name: Stoppa

Current Tag: \_\_\_\_\_

New Tag:

Please note that a 14-digits number is requested (RFID TAG number).

### 5.1.1 SKILLS

For each Operator, it is possible to select a list of built-in skills related to the planned tasks he/she can perform in the Animal Room.

By clicking on the corresponding icon , a popup menu is displayed where it is possible to select all the different tasks that the user can perform.

**Skills - grosati**

Select All Deselect All

Skill		
Bedding Change	BEDDING_CHANGE	<input checked="" type="checkbox"/>
Anomaly Check	ANOMALY_CHECK	<input checked="" type="checkbox"/>
Daily Check	DAILY_CHECK	<input checked="" type="checkbox"/>

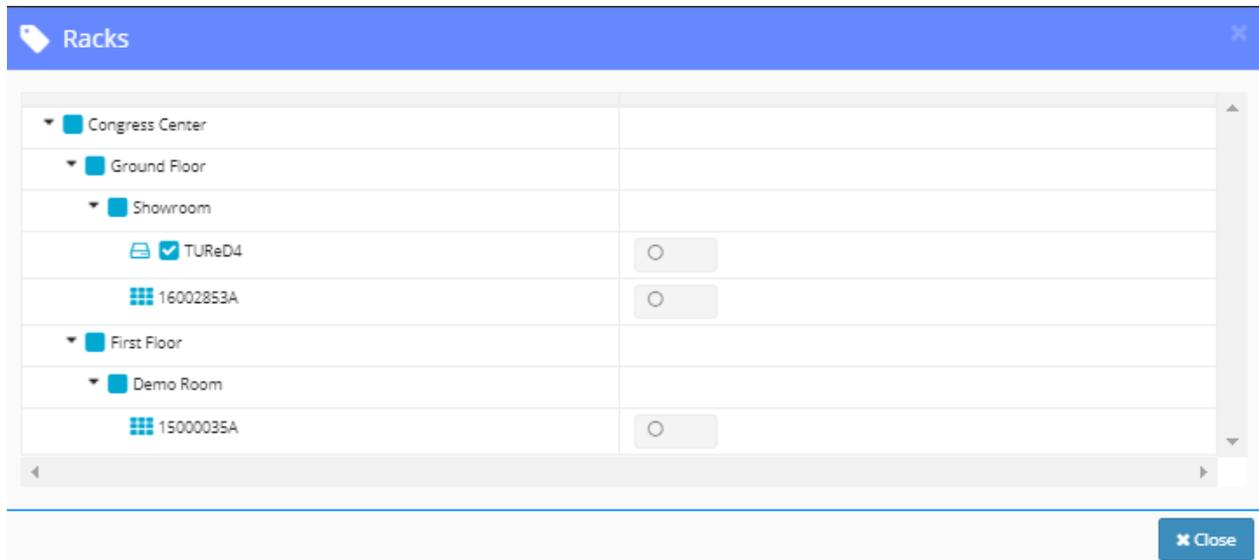
The three current different available "skills" are the next:

- **Bedding Change:** the user can receive tasks from the DVC<sup>®</sup> Planner to perform the cage change task.
- **Anomaly Check:** the user can receive tasks from the DVC<sup>®</sup> Planner related to the careful check of animal conditions.
- **Daily check:** the user can receive tasks from the DVC<sup>®</sup> Planner to perform Daily Check on animals.



## 5.1.2 RACKS

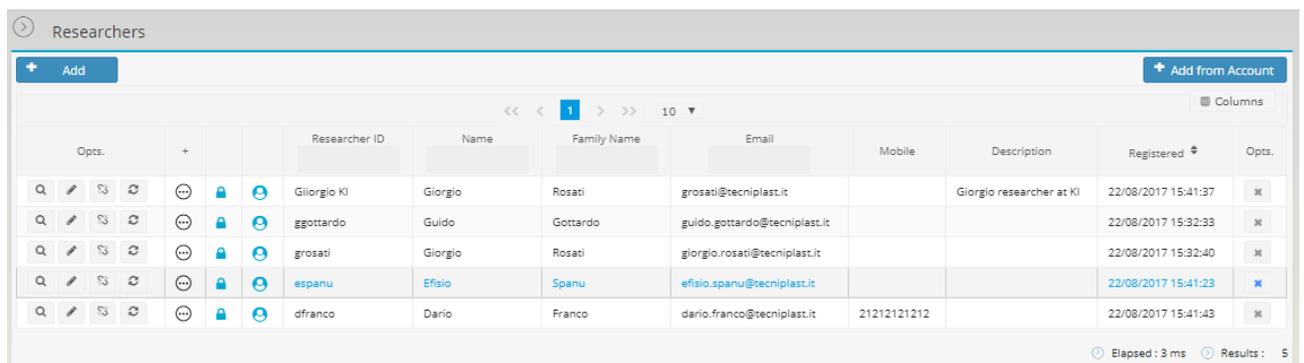
Thanks to this function, the user can be enabled to work and receive planned tasks only from the selected areas. The minimum level is the DVC® Rack level.



## 5.2 RESEARCHER

In this section, the user can register all the Researchers currently working in the facility. This is important information because the Operator can use it when he/she is working in the Animal Room preparing new Cages and wants to add the Owner information to the Cage label.

To create a new Researcher, click on the corresponding button **+ Add** to create a new one or **+ Add from Account** to associate an already created user to a Researcher.



## 5.3 RESEARCHER GROUP

The user can also create a Researcher Group by clicking on the corresponding icon **+ Add** and entering all the necessary data.



Research Group

+ Add

<< < 1 > >> 10 Columns

Opts.		Group ID	Description	Registered	Opts.
	+	MKTG Group	MKTG Group	31/07/2017 17:49:21	
	+	NeuroGroup	Neuro Group of Researcher	22/08/2017 16:23:58	

Elapsed : 2 ms Results : 1

To add Researchers to this just created group, click on the corresponding icon and select the already available researchers to be added, clicking on .

NeuroGroup - Add Researchers

Group ID: NeuroGroup  
Description: Neuro Group of Researcher

Group Researchers | All Researchers

			Registered
	Gioglio KI	Gioglio researcher at KI	22/08/2017 15:41:37
	ggottardo		22/08/2017 15:32:33
	grosati		22/08/2017 15:32:40
	espanu		22/08/2017 15:41:23
	dfranco		22/08/2017 15:41:43

Close

Click on the GROUP RESEARCH tab and on icon to eliminate Researchers from the group.

NeuroGroup - Add Researchers

Group ID: NeuroGroup  
Description: Neuro Group of Researcher

Group Researchers | All Researchers

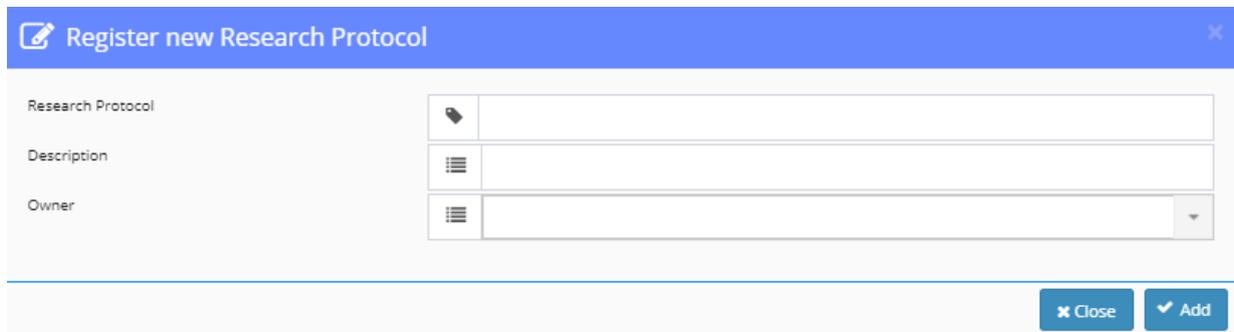
			Registered
	grosati		22/08/2017 15:32:40
	Gioglio KI	Gioglio researcher at KI	22/08/2017 15:41:37

Close

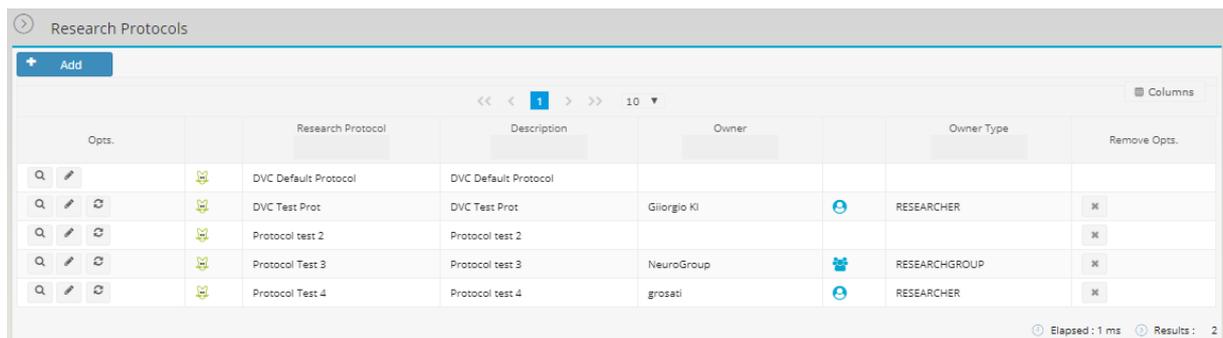


## 5.4 RESEARCHER PROTOCOLS

From this section, the user can create a list of available Researcher Protocol that can be assigned to a Cage under preparation. Then, click on the button  and enter the necessary information as shown in the below picture.



Please note that the Owner information (Researcher or Researcher Group) is not mandatory. The user can create a new Researcher Protocol and decide if to assign it to a specific Researcher or group of Researchers or not.



Opts.	Research Protocol	Description	Owner	Owner Type	Remove Opts.
 	DVC Default Protocol	DVC Default Protocol			
  	DVC Test Prot	DVC Test Prot	Giorgio KI	RESEARCHER	
  	Protocol test 2	Protocol test 2			
  	Protocol Test 3	Protocol test 3	NeuroGroup	RESEARCHGROUP	
  	Protocol Test 4	Protocol test 4	grosati	RESEARCHER	

## 5.5 DVC® CHANGING PROTOCOL

In this section, the user can find the applied DVC® Changing configuration applied to the entire facility.

Currently, there are two different bedding changing policies:

- Total bedding Change (Total\_Only)
- Partial Bedding Change (Partial\_preferred)

In the DVC® system, Total bedding Change (i.e. total cage change) means that an entire new clean cage is used to move the animals from dirty bedding to clean bedding.

Vice versa, a Partial bedding Change (i.e. partial cage change) means that the cage top currently in use for the dirty cage is moved to the clean bottom cage where the animals are moved.



The user must input the time (duration in seconds) necessary to perform the cage change task in both cases.



The DURATION field is essential as the DVC® Planner balance the proper time availability with the time needed to perform the current tasks.

When Partial\_PREFERRED is selected, the user is requested to specify also other fields:

- Number days after total bedding change
- Number consecutive partial bedding change

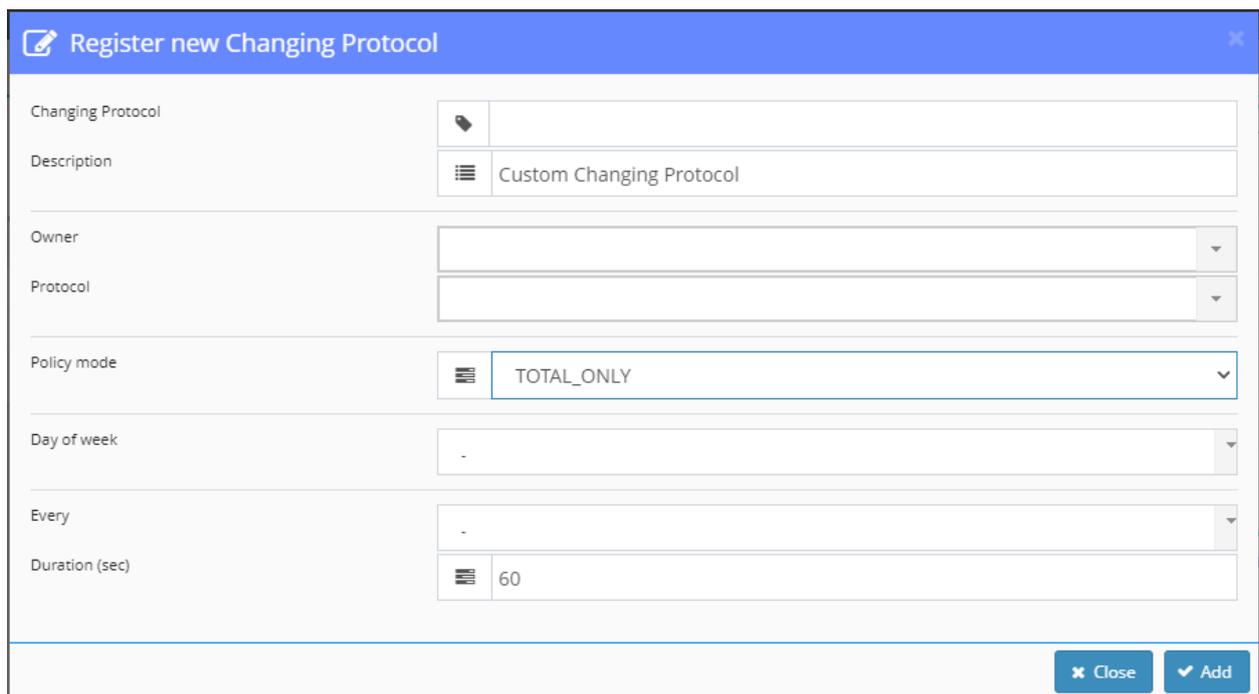
In the above example, a total cage change is performed either when the cage has been changed partially three times (the fourth will be generated as a total cage change task) or the last total cage change was performed more than 30 days ago.



## 5.6 CUSTOM CHANGING PROTOCOL

Suppose the user does not want to follow the DVC<sup>®</sup> suggestions to perform the cage change but needs to set a fixed time interval between cage changes (for instance for experimental cages). In that case, he/she can create custom changing protocols and associate them to specific Researchers or Research Protocols (or a combination of the two). In this way, all the registered cages that belong to a specific Researcher Protocol or Owner associated with a specific custom changing protocol will be changed according to the settings of the custom changing protocol itself.

By clicking the button  a popup window is displayed.



The user needs to enter the following information:

- **Changing Protocol Name**
- **Owner** and/or **Protocol** from a list of already created ones
- **Policy Mode**, Total\_Only or Partial\_preferred
- **Day of week** the Cage change has to be performed (from Monday to Sunday)
- Set a **weekly** or a **biweekly Cage change** (according to the user needs)
- Enter the time to perform the task (**duration**), used by the DVC<sup>®</sup> Planner to balance the workload of the available resources



In order to correctly assign a Custom Changing Protocol to specific cages, the custom protocol **MUST** be created **BEFORE** creating the cages in the Operator view. It does not work retroactively until the following cage change task is performed.

## 5.7 ANIMALS

In this section, a recap list of all the animals currently registered in the system is displayed.



Opts.	Type	Animal ID	Sex	Health	Cage Name	Research Protocol	Strain	Markings
		MOUSE 35	♂ MALE	HEALTHY	c-383	122235AB	C57BL6j1	
		MOUSE 196	♂ MALE	DEAD			C57BL6j1	
		MOUSE 341	♂ MALE	HEALTHY	c-383	122235AB	C57BL6j1	
		MOUSE 340	♂ MALE	SICK	c-383	122235AB	C57BL6j1	
		MOUSE 139	♀ FEMALE	DEAD	c-310	DVC Default Protocol	C57BL6j1	
		MOUSE 147	♂ MALE	HEALTHY	c-384	332244D	C57BL6j	
		MOUSE 173	♂ MALE	HEALTHY	c-384	332244D	C57BL6j	
		MOUSE 13	♂ MALE	HEALTHY	c-384	332244D	C57BL6j	
		MOUSE 187	♂ MALE	HEALTHY	c-366	DVC Default Protocol	C3H	
		MOUSE 172	♀ FEMALE	HEALTHY	c-366	DVC Default Protocol	C3H	

Elapsed : 4 ms Results : 132

Click on the corresponding icon to show in which cage the selected animal is currently housed (if still alive).

**Animal ID : 34317312**

Type: MOUSE  
Animal ID: 34317312  
UUID: 0268bab1-176d-4cfa-8818-e54f9945ab96

Sex: ♀ FEMALE

**Cage-66**

Strain: REGISTERED  
Status: REGISTERED

**Close**

### 5.7.1 STRAIN

This section displays a recap list of all the animal strains registered in the system by the user working with the DVC® Operator interface.

Opts.	Strain	Description	Opts.
	C57Bl6j	Automatically Registered Strain	
	Balb/c	Automatically Registered Strain	
	c57b1/6j	Automatically Registered Strain	
	b	Automatically Registered Strain	
	c-57	Automatically Registered Strain	
	c57	Automatically Registered Strain	

Elapsed : 14 ms Results : 6



## 5.7.2 EXPERIMENTS

As for the STRAIN section, also this EXPERIMENT section displays a recap list of all the experiment IDs registered in the system by the user working with the DVC® Operator interface.

Experiment ID	Research protocol
123	DVC Default Protocol
25678	Red Cages
410-10 abc	Running Wheels
45677	Red Cages
7654	Red Cages
98765	Red Cages
ABC	DVC Default Protocol

## 5.7.3 SICKNESS REASONS

Thanks to this section, the user can recreate all the “Sickness Reasons” generally applied in the animal room to declare an animal sick.

By default, a generic “other” with “no reason explained” definition is built in the system.

In order to start creating new “Sickness Reasons”, simply click on the **+ Add** and then write the name of the Sickness Reason as well a description (that is not mandatory)

**Create a new item**

Value

Description

**Close** **Add**

By clicking Add, the new reason is included in the list.

Opts.	Value	Description	Built In	Enabled	Opts.
<input type="checkbox"/>	other	no reason explained	true	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	Teeth	Growing teeth issue	false	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Tumor head	tumor growing in the head	false	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Wounds	wounding due to fighting	false	<input checked="" type="checkbox"/>	<input type="checkbox"/>

By default, any new “Sickness Reason” is enabled.

If a “Sickness Reason” is not valid anymore, instead of deleting it, it can be disabled and will not appear anymore as available in the DVC® Operator interface.

## 5.7.4 DEATH REASONS

This section can create unlimited possible “Death Reasons” to be selected by the Operator when



interacting with animals by editing the DVC® cage label.

By default, a generic “other” with “no reason explained” definition is built in the system.

In order to start creating new “Death Reasons”, simply click on the **+ Add** and then write the name of the Death Reason as well a description (that is not mandatory)

Create a new item

Value

Description

Close Add

By clicking Add, the new reason is included in the list.

Death Reasons

+ Add

Sync

<< < 1 > >> 10 Columns

Opts.	Value	Description	Built In	Enabled	Opts.
Q	other	no reason explained	true	on	
Q	End of Experiment	Animals are culled because the experiment is completed	false	on	×
Q	Fighting	Animal is found death because of too wounds	false	on	×
Q	Euthanize	Researcher asked to euthanize the animal	false	on	×

Elapsed: 56 ms Results: 4

By default, any new “Death Reason” is enabled.

If a “Death Reason” is not valid anymore, instead of deleting it, it can be disabled and will not appear anymore as available in the DVC® Operator interface.

## 5.7.5 TREATMENTS

This section can create unlimited possible “Treatments” to be selected by the Operator when interacting with animals by editing the DVC® cage label.

A generic “other” with “no reason explained” definition is built in the system by default.

In order to start creating new “Treatments”, click on the **+ Add** and then write the name of the Treatments as well a description (that is not mandatory).

Create a new item

Value

Description

Close Add

Clicking Add, the new treatment is included in the list.



Opts.	Value	Description	Built In	Enabled
<input type="checkbox"/>	other	no reason explained	true	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Injection	The mouse has been injected	false	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Analgesia	The mouse has been provided with Analgesia	false	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Drug	The drug has been delivered to the mouse	false	<input checked="" type="checkbox"/>

By default, any new "Treatment" is enabled.

If a "Treatment" is not valid anymore, instead of deleting it, it can be disabled and will not appear anymore as available in the DVC® Operator interface.

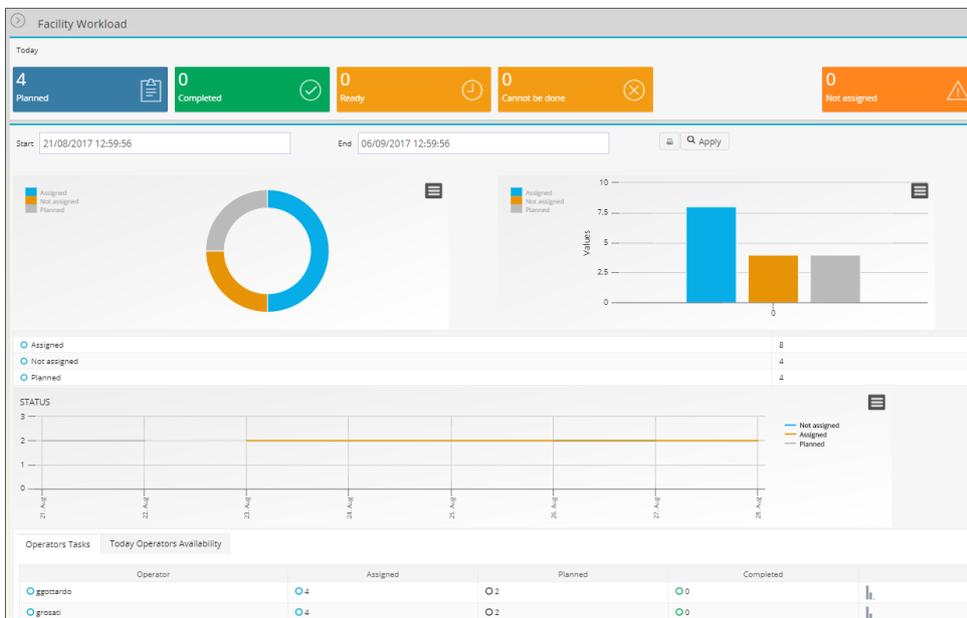
## 6 DVC® PLANNER

The DVC® Planner is one of the most important modules of the DVC® system.

It works assigning tasks to the available and skilled Operators. The outcome of the Planner is a daily task list generated every night collecting data coming from the field.

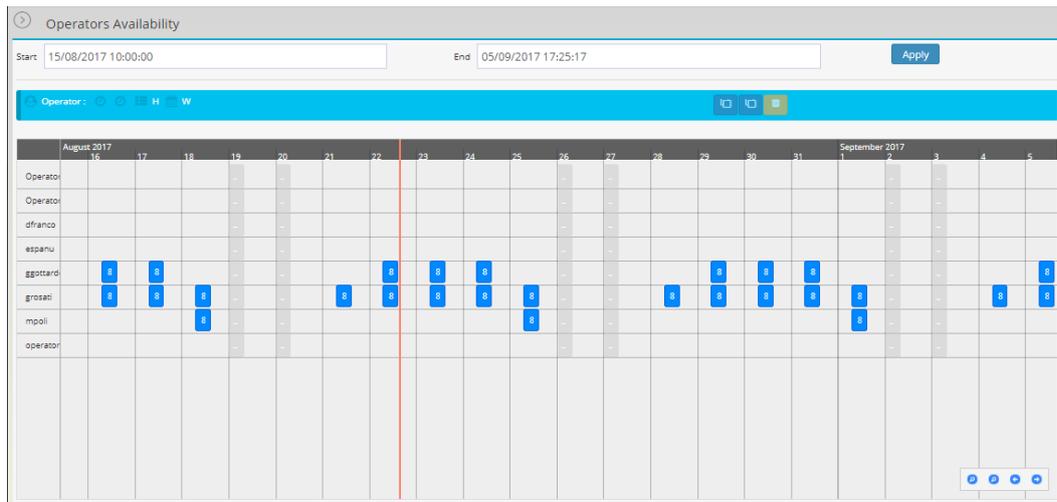
### 6.1 DVC® PLANNER DASHBOARD

The DVC® Planner Dashboard is like the previously described Home Page. The recap of the current Facility Workload in the selected period (see Paragraph 3.1 Facility Workload for further explanation).



### 6.2 OPERATORS AVAILABILITY

This is a vital section. First, a list of all the created Operators is displayed.

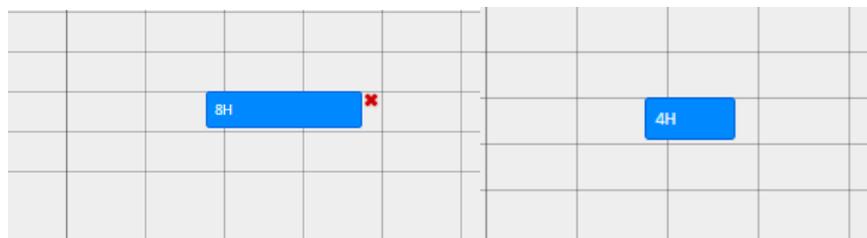


Please note that a time availability must have been set for each Operator in the system. Otherwise, no tasks will be assigned to him/her.

The user can zoom in, zoom out and move backwards and forward the calendar using the little four icons at the bottom of the screen .

By double-clicking on a specific date, a standard 8-hours working day is assigned.

If it is needed to assign fewer working hours, just zoom in, select the time slot, click once, and then click and drag with the mouse on the side of the selected time slot.



If the user wants to delete a specific time slot, click once on the corresponding slot. A red cross will be displayed. Click on it to delete the time slot.

## 6.2.1 CLONE WEEK

To quickly assign Operator availability to a larger time interval, after having assigned a complete working week, select a time slot and then click on the top icon CLONE WEEK .

The system will ask to select the length of the interval to clone the current week:

Operator	Guido Gottardo
Start	13/06/2017 09:00:00
End	13/06/2017 17:00:00
Hours	8 H

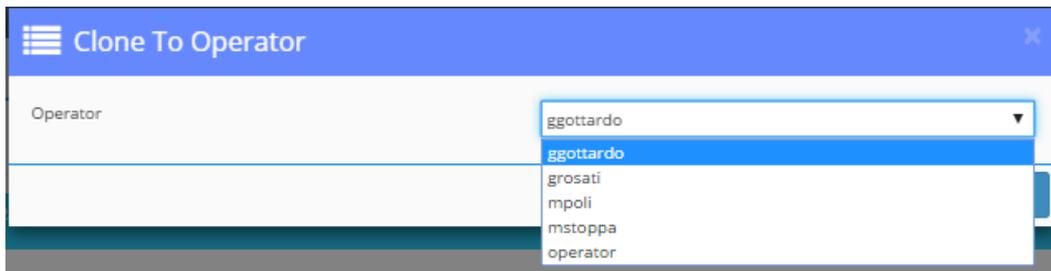
Period

Week  Month  Quarter  Half  Year



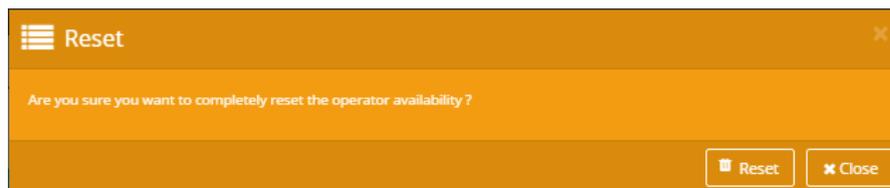
## 6.2.2 CLONE TO OPERATOR

Suppose more Operators share the same working hours. In that case, the user can easily clone one Operator working week by selecting a time slot of the selected Operator and then clicking on the button  the system asks to select the Operator to whom the original working hours are to be cloned.



## 6.2.3 RESET

If the user wants to reset an Operator time availability, select the Operator slot and click on the reset button . The system will ask for a confirmation before officially proceeding.



## 6.3 TASK WORK PACKAGES

This section is fundamental, especially when the manager moves an assigned task from an Operator to another. This is typically happening when the first Operator is sick or simply not available anymore.

In this section, the list of all the created tasks are listed:

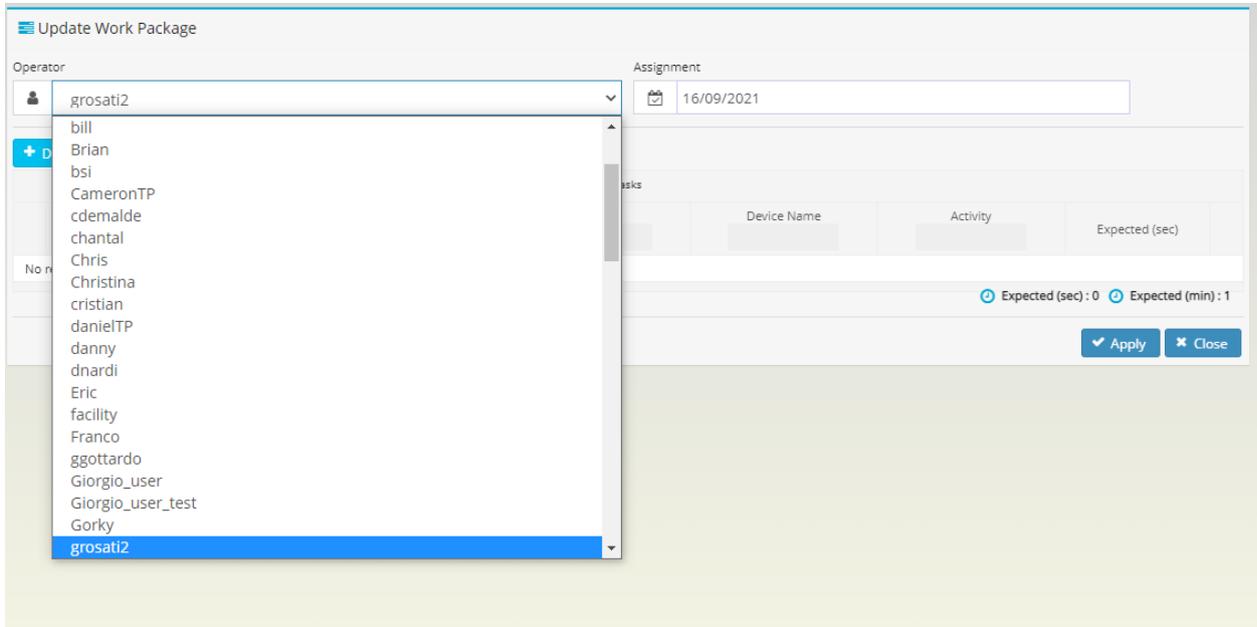
Opts.	Status	Tasks	Expected (min)	Operator	Assignment	Created	Created By
		5	4	grosati2	29/09/2021	29/09/2021	admin
		4	3	cristian	29/09/2021	29/09/2021	admin
		3	1	Researcher_3	29/09/2021	29/09/2021	admin
		1	1	vet	29/09/2021	29/09/2021	admin
		3	1	admin	17/09/2021	17/09/2021	admin
		4	3	grosati2	16/09/2021	16/09/2021	grosati2
		3	1	grosati2	16/09/2021	16/09/2021	grosati2
		0	0	grosati2	16/09/2021	16/09/2021	admin
		1	1	grosati2	16/09/2021	16/09/2021	admin
		3	1	grosati2	16/09/2021	16/09/2021	admin

The manager has to click on the corresponding icon  of the task assigned to a specific



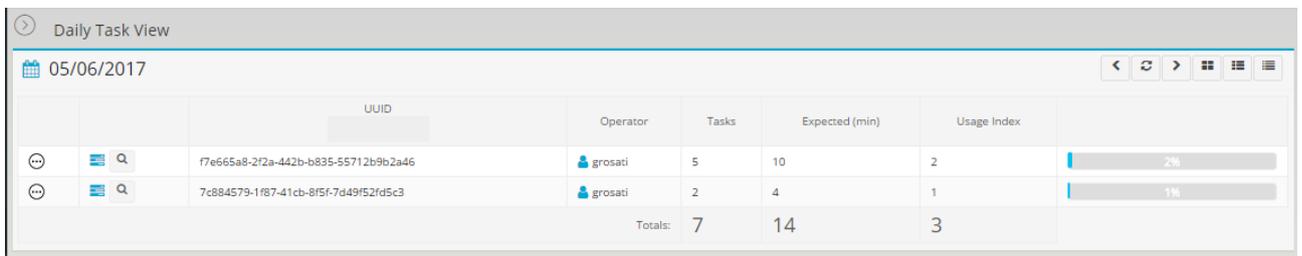
Operator that must be moved to another.

By selecting from the drop-down list the other Operator and then clicking Apply, the task is moved.

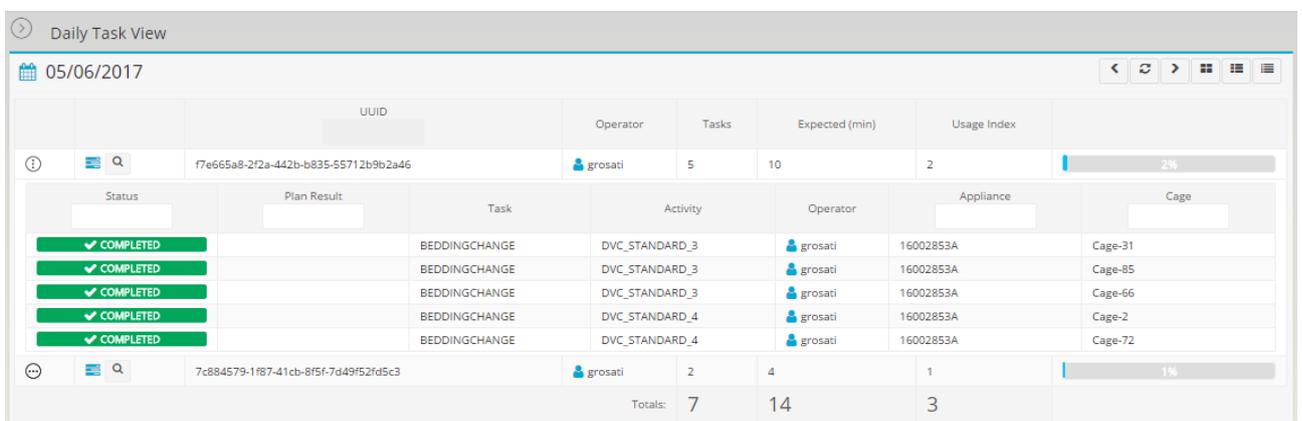


## 6.4 DAILY TASK VIEW

Thanks to this view, it is possible to check all the daily tasks assigned to the Operators and the time (minutes) expected to perform the tasks.



Click on the expanding icon to display the assigned activities in detail.



The user can check the status of the activity, the DVC<sup>®</sup> Rack where it should be performed and the cage to which the activity is assigned.



Click on the arrows  to move backwards or forward in time.

## 6.5 TASKS TREE DAILY VIEW

This view displays a recap of the tasks assigned at the various levels of the facility (a kind of workload by locations, not by Operators) down to DVC<sup>®</sup> Rack level.

Tasks Tree Daily View							
09/06/2017							
Elements	Tasks	Tasks	Tasks	Status	Online	Model	
Not Localized							
Facility							
Main Building							
Main Floor							
Main Room							
Biocev	225						
CCP 5002	225						
CCP 5002 - Floor	225						
M.0241	225						
biocev-15004127	31					Master Base Mod	
16000537A	16					Rack Base Model	
16000530A	4					Rack Base Model	
15002567A	11					Rack Base Model	
16000528A						Rack Base Model	
biocev-15004131	27					Master Base Mod	
16002398A	12					Rack Base Model	
16002398B						Rack Base Model	
16002295B	11					Rack Base Model	
16002295A	4					Rack Base Model	



## 6.6 TASKS

This is the most detailed view of all the activities in the facility.

Selecting a proper period of analysis, it is possible to display: a list of all the tasks and of the Operators to whom tasks have been assigned, the period in which the task is to be performed (or has been performed), the cages involved and their status (as described in section 5.1).

The screenshot shows a 'Tasks' management interface. At the top, there are search filters for 'Start' (21/08/2017 17:32:12) and 'End' (06/09/2017 17:32:12), along with 'Apply' and 'Toggle Aggregated View' buttons. Below the filters is a table with columns: Opts., Status, Plan Result, Task, Activity, Operator, Created by, Appliance, Cage, Assignment, and Created. The table contains 16 rows of task data. Each row includes a status icon (e.g., 'Planned' or 'Assigned') and a date in the 'Assignment' column. At the bottom right, it shows 'Elapsed: 8 ms' and 'Results: 16'.

This section is important if the user wants to manually force the assignment of the activity to a different Operator or on a different day. To do so, click on the corresponding icon  and select the Operator to assign the task to or change the date.

The screenshot shows a modal form titled 'DAILYCHECK'. It has two main input fields: 'Operator' with a dropdown menu currently showing 'grosati', and 'Assignment' with a date picker showing '21/08/2017'. At the bottom right, there are two buttons: 'Close' and 'Update'.



Please remember that a task is the collection of different activities. The manager can choose to move the entire package of activities (the task) or the individual activity



## 7 DEVICES

Here the user can find the necessary tabs to install or edit any element of the DVC® system.

### 7.1 UNITS

This is the list of all the units (GATEWAY) installed in the facility and dedicated to monitoring the blower data (AHU or ISO).

+	Opts.	Status	Offline Off	Monitor	Serial	Device Name	Model	Buoy	Location	Controller	IP Address
...	🔍 ✎ 📍 ☰	🔵 ENABLED	🔵	📊	18001181	🟡 TU18001181	Sky Flow (AHU)	Pos_B	Showroom	SA_62_QUAD_RS485	10.0.0.81
...	🔍 ✎ 📍 ☰	🔵 ENABLED	🟡	📊	18001177	🟡 TU18001177	Smart Flow (AHU)	Pos_C	Showroom	SA_62_QUAD_RS485	UNDEFIN
...	🔍 ✎ 📍 ☰	🔵 ENABLED	🔵	📊	18001178	TU18001178	Easy Flow (AHU)			SA_62_QUAD_RS485	UNDEFIN
...	🔍 ✎ 📍 ☰	🔵 ENABLED	🔵	📊	ReD4	TUReD4	Wi Flow (AHU)			SA_62_RS232	10.0.1.19

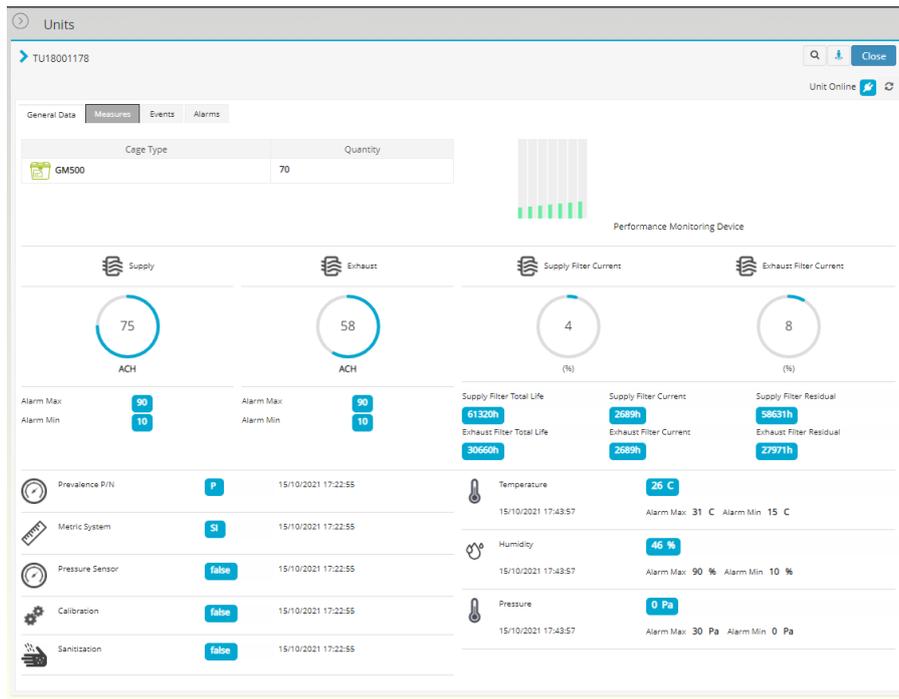
Elapsed : 5 ms Results : 4

This section is important to DISABLE units if not in use anymore or that need to be disinfected. By disabling the unit before switching it off, the user is preventing generating (false) alarms. It is clear that the unit has to be set back as ENABLE before switching it on.

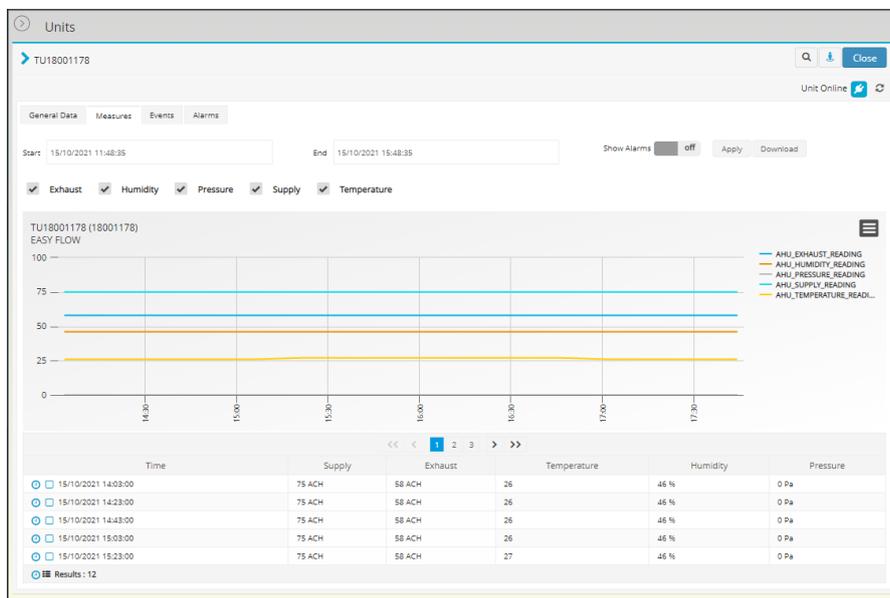
More specifically, by clicking the small icon , it is possible to set a UNIT as:

- Out\_of\_order
- Dismissed
- Enabled
- Disabled

Then, by clicking the monitoring icon  it is possible to display the latest blower data:



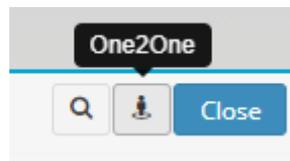
Then, clicking on the “Measures” button, it is possible to display the trend of data in the selected time interval and click on the “Download” button to prepare the download of the corresponding data in a .csv file format.



Lastly, by clicking the “Events” and “Alarms” tab, the interface displays the related events and alarms generated by the unit.

### 7.1.1 ONE TO ONE FUNCTIONALITY

When navigating in the UNITS pages, a top-right icon is always displayed. This icon refers to the One to One functionality that can be enabled by clicking on it.



A dedicated new web page is opened. Please refer to the dedicated instruction manual of the “One to One” to know the functionalities.

## 7.2 BUOYS

Buoys are used to define a unit location. Each Buoy has the attributes that define itself and the units linked to it.

	Opts.	Status	Serial	Device Name	Location
⊖	🔍 ✎ 📍 ☰	ACTIVE	00000001	Showroom_A	Showroom
⊖	🔍 ✎ 📍 ☰	ACTIVE	00000002	Demo Room_A	Demo Room
⊖	🔍 ✎ 📍 ☰	NOT_ACTIVE	10000009	10000009	
⊖	🔍 ✎ 📍 ☰	NOT_ACTIVE	00000021	00000021	Showroom
⊖	🔍 ✎ 📍 ☰	ACTIVE	c7d8f13811979c51859713d230456c92	Showroom_B	Showroom



Please note that each DVC® Master must have an attached BUOY, and the BUOY must be assigned to a specific location; otherwise, the cages inserted into the DVC® Rack (attached to the DVC® Master) can not be localized.

### 7.2.1 ADD BUOY

To add a new Buoy, plug it in the DVC® Master already connected to the DVC® Server and proceed with the registration.

Once the Buoy has been plugged in, a popup message will be displayed to notify that the Buoy has been successfully recognized.

### 7.2.2 UPDATE BUOY

To edit a Buoy, click on the  button and edit any field.



 Please note that the most important information to enter is the position of the BUOY. Otherwise, the BUOY will be placed in the "Not Localized" area that is a big wrong.

### 7.2.3 CHANGE BUOY'S STATUS

To change the status of the Buoy, click on button  and select one of the following:

- **Enabled** (icon ): The Buoy is active and connected to a DVC™ system.
- **Disabled** (icon ): The Buoy disabled, not in use.
- **Out of Order** (icon ): This status indicates that the Buoy is not in use due to a failure and needs to be sent to technical service.

### 7.3 REM

This section lists all the installed REM in the system:

Opts.	Status	Offline	Monitor	Serial	Device Name	HW Release	FW Release	SW Release
  	 ENABLED	 Off		19200030	19200030	3	38	1.5.1

The latest data generated by the device can be displayed by clicking the corresponding icon





REM

Tecniplast > Tecniplast HQ > Congress Center > Ground Floor > Showroom > 19200030

General Data Measures Alarms

Temperature 15/10/2021 18:00:00 **22.7 °C**  
Alarm Max 24 °C Alarm Min 20 °C

Humidity 15/10/2021 18:00:00 **40 %**  
Alarm Max 70 % Alarm Min 40 %

Noise 15/10/2021 18:00:00 **49 dBA**  
Alarm Max 70 dBA for more than 5 minutes

Acceleration 15/10/2021 18:00:00 **0.025 g**  
Alarm Max 0.05 g for more than 5 minutes

Light 15/10/2021 18:00:00 **ON**  
Alarm ON within 07:00 (24h) to 19:00 (24h)  
Alarm OFF within 20:00 (24h) to 06:00 (24h)

Person Presence 15/10/2021 18:00:00 **0.0**

Moreover, by clicking the “Measures” button, the trend of the REM’s data in the selected time interval are displayed as well as they can be downloaded in a .csv file format by clicking the corresponding “downloading” icon

REM

Tecniplast > Tecniplast HQ > Congress Center > Ground Floor > Showroom > 19200030

General Data Measures Alarms

Start: 15/10/2021 12:00:10 End: 15/10/2021 16:00:10 Show Alarms  off Apply Download

Acceleration  Humidity  Light  Person Presence  Noise  Temperature

19200030 (19200030)  
REM MODEL

150  
100  
50  
0

14:00 14:30 15:00 15:30 16:00 16:30 17:00 17:30 18:00

REM\_ACCELERATION  
REM\_HUMIDITY  
REM\_LIGHT  
REM\_PERSON\_PRESENCE  
REM\_NOISE  
REM\_TEMPERATURE

Time	Temperature (°C)	Humidity (%)	Noise (dBA)	Acceleration (g)	Person Presence	Light (%)
15/10/2021 14:00:00	22.4	39	46	0.024	0.0	100
15/10/2021 14:02:00	22.4	39	49	0.024	0.0	100
15/10/2021 14:04:00	22.4	39	45	0.025	0.0	100
15/10/2021 14:05:00	22.4	39	45	0.024	0.0	100
15/10/2021 14:06:00	22.4	39	52	0.025	0.0	100

Results : 194

Last, all the alarms generated by the device are listed under the tab “Alarms”.

## 7.4 MASTERS

In this section, the user can find the list of all the DVC® masters registered in the system.



	Opts.	Status	Offline	Serial	Device Name	Model	Buoy	Location	IP Address
		ENABLED	Off	dvc-master-showroom	dvc-master-showroom	Master Base Model (DVC)	Showroom_A	Showroom	
		ENABLED	Off	dvc-master-demoroom	dvc-master-demoroom	Master Base Model (DVC)	Demo Room_A	Demo Room	dvc-master-demoroo
		DISABLED	Off	staging-master02.vivatronics.inet	staging-master02.vivatronics.inet	Master Base Model (DVC)	10000009		staging-master02.viva
		DISABLED	Off	DanMan	DanMan	Master Base Model (DVC)	00000021	Showroom	DanMan

Click on the corresponding icons to get information about the date of creation and the status of each DVC® Master.



Please note that if a DVC® Master status is DISABLED, it does not send any alarm. Therefore, it is important to disable the DVC® Master before switching it off.

## 7.5 RACKS

In this section, the user can find the list of all the registered DVC® Racks in the system.

	Opts.	Status	Offline	Serial	Device Name	Model
		OUT_OF_ORDER	Off	12345678	12345678	Rack Base Model
		ENABLED	Off	15000035	15000035	Rack Base Model
		ENABLED	Off	16002853	16002853	Rack Base Model
		OUT_OF_ORDER	Off	17000395	17000395	Rack Base Model
		OUT_OF_ORDER	Off	17000392	17000392	Rack Base Model

Click on the corresponding icons to get information about the date of creation and the status of each DVC® Rack.



Please note that if a DVC® Rack status is DISABLED, it does not send any alarm. Therefore, it is important to disable the DVC® Rack before switching it off.

## 7.6 RACK ELEMENT

In the DVC® system, each Rack side is considered an ELEMENT (i.e. a double-sided DVC® Rack features 2 Racks elements). In this section, the user can find the list of all the registered DVC® Racks elements in the system.



+	Opts.	Status	Offline Off	Serial	Device Name	Model	Geometry
⊞	🔍 ✎ 📄	ENABLED	👉	1500035A	1500035A	Rack Base Model	RACK_GEOMETRY3X5
⊞	🔍 ✎ 📄	ENABLED	👉	16002853A	16002853A	Rack Base Model	RACK_GEOMETRY10X6
⊞	🔍 ✎ 📄	DISABLED	👉	17000395A	17000395A	Rack Base Model	RACK_GEOMETRY10X8
⊞	🔍 ✎ 📄	DISABLED	👉	17000392A	17000392A	Rack Base Model	RACK_GEOMETRY10X7

Elapsed: 3 ms Results: 4

## 7.7 CAGES

In this section, the user can find a recap list of all the Cages registered into the DVC® system since the installation date.

Opts.	+	Status	Name	Type	Research Protocol	AMS ID
🔍 📄	⊞	INSERTED	Cage-74	GENERIC	DVC Default Protocol	Cage-74
🔍 📄	⊞	INSERTED	Cage-85	GENERIC	DVC Default Protocol	Cage-85
🔍 📄	⊞	INSERTED	Cage-66	GENERIC	DVC Default Protocol	Cage-66
🔍 📄	⊞	INSERTED	Cage-2	GENERIC	DVC Default Protocol	Cage-2
🔍 📄	⊞	ALARM	Cage-72	GENERIC	DVC Default Protocol	Cage-72
🔍 📄	⊞	INSERTED	Cage-31	GENERIC	DVC Default Protocol	Cage-31
🔍 📄	⊞	INSERTED	Cage-30	GENERIC	DVC Default Protocol	Cage-30
🔍 📄	⊞	INSERTED	Cage-71	GENERIC	DVC Default Protocol	Cage-71
🔍 📄	⊞	NORMAL	c-303	GENERIC	DVC Default Protocol	
🔍 📄	⊞	TERMINATED	c-383	GENERIC	DVC Default Protocol	

Elapsed: 4 ms Results: 70

Clicking on the expand icon the user can find all the information related to how many animals are in this Cage.

Opts.	+	Status	Name	Type	Research Protocol	AMS ID
🔍 📄	⊞	INSERTED	Cage-74	GENERIC	DVC Default Protocol	Cage-74
🔍 📄	⊞	INSERTED	Cage-85	GENERIC	DVC Default Protocol	Cage-85

Animals		Status	Sex
👤	34317310	REGISTERED	FEMALE
👤	34317309	REGISTERED	FEMALE
👤	34317308	REGISTERED	MALE

Status	Task	Activity	Operator	Assignment
COMPLETED	BEDDINGCHANGE	DVC_STANDARD_3	grosati	11/05/2017
COMPLETED	BEDDINGCHANGE	DVC_STANDARD_3	grosati	08/05/2017
COMPLETED	BEDDINGCHANGE	DVC_STANDARD_3	grosati	08/05/2017
COMPLETED	BEDDINGCHANGE	DVC_STANDARD_3	grosati	08/05/2017
COMPLETED	BEDDINGCHANGE	DVC_STANDARD_3	grosati	08/05/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	grosati	12/05/2017
CANT_BE_DONE	BEDDINGCHANGE	DVC_STANDARD_3	ggottardo	31/07/2017
COMPLETED	BEDDINGCHANGE	DVC_STANDARD_3	grosati	05/06/2017
CANT_BE_DONE	BEDDINGCHANGE	DVC_STANDARD_3	ggottardo	30/05/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	ggottardo	05/05/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	ggottardo	05/05/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	offranco	18/07/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	ggottardo	05/05/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	grosati	16/06/2017
UNDONE	BEDDINGCHANGE	DVC_STANDARD_3	grosati	28/07/2017

Tasks

Last, by clicking on the icon it is possible to access a list of all the tasks performed on this specific cage.



Device Name: c-385

Status	Plan Result	Task	Activity	Operator	Created by	Appliance	Cage	A
Started		BEDDINGCHANGE	DVC_STANDARD	ggottardo	admin	16002853A	c-385	
Not done		BEDDINGCHANGE	DVC_STANDARD	Giorgio	admin	16002853A	c-385	
Started		BEDDINGCHANGE	DVC_STANDARD	ggottardo	admin	16002853A	c-385	
Completed		ANOMALYCHECK	DVC_ANOMALY_3	ggottardo	admin	16002853A	c-385	
Not done		BEDDINGCHANGE	DVC_STANDARD	ggottardo	admin	16002853A	c-385	

Elapsed: 13 ms Results: 5

Close

## 7.8 PHYSICAL CAGES

In this section, the user can find the list of all the (physical) cages inserted into the DVC® system since the time of installation (all the cages read at list once by the DVC® Racks)

Physical Cages

+	Opts.	Status	Serial	Device Name	Model
		NOT_AVAILABLE	04811CBA084984	04811CBA084984	Cage DVC Base Model
		NOT_AVAILABLE	049D48BA084980	049D48BA084980	Cage DVC Base Model
		MISSING	04CB22BA084984	04CB22BA084984	Cage DVC Base Model
		MISSING	04B6F0BA084980	04B6F0BA084980	Cage DVC Base Model
		NOT_AVAILABLE	046FDDBA084980	046FDDBA084980	Cage DVC Base Model
		MISSING	04CEDABA084980	04CEDABA084980	Cage DVC Base Model
		MISSING	04D86FBA084980	04D86FBA084980	Cage DVC Base Model
		MISSING	045BEBBA084980	045BEBBA084980	Cage DVC Base Model
		MISSING	040487BA084981	040487BA084981	Cage DVC Base Model
		NOT_AVAILABLE	04B891BA084980	04B891BA084980	Cage DVC Base Model

Elapsed: 6 ms Results: 110

## 8 DATA

In this section, the user can find the historical alarms generated in the DVC® system.



Please note that the DVC® system stores historical data without any time limit. Therefore, the hard disk space is the only storage limit, and it needs to be supplied by the final user (unless other agreements have been made).

### 8.1 ALARM HISTORY

In this section, the user can find a list of the alarms received by the DVC® system during a selected period.



Opts.	Level	Type	Active Off	Appliance	Cage	Time	Closed	Registered
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	23/08/2017 09:43:53	23/08/2017 09:59:15	23/08/2017 09:43:53
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	23/08/2017 09:13:11	23/08/2017 09:28:32	23/08/2017 09:13:11
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	23/08/2017 04:06:30	23/08/2017 07:56:28	23/08/2017 04:06:30
Q	ALARM	Master Offline (AL_ALARM_MASTER_OFFLINE)	<input type="checkbox"/>	dvc-master-showroom		22/08/2017 12:12:37	22/08/2017 12:12:39	22/08/2017 12:12:38
Q	ALARM	Master Offline (AL_ALARM_MASTER_OFFLINE)	<input type="checkbox"/>	dvc-master-demoroom		22/08/2017 12:12:37	22/08/2017 12:12:39	22/08/2017 12:12:38
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	22/08/2017 10:58:15	22/08/2017 11:28:57	22/08/2017 10:58:15
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	22/08/2017 05:35:50	22/08/2017 09:26:07	22/08/2017 05:35:51
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	21/08/2017 12:43:08	21/08/2017 21:09:26	21/08/2017 12:43:08
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	21/08/2017 11:57:12	21/08/2017 12:12:34	21/08/2017 11:57:12
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input type="checkbox"/>	049B09BA084984	Cage-72	21/08/2017 10:40:27	21/08/2017 10:55:48	21/08/2017 10:40:27

The list of all the alarms triggered by the DVC® elements (cage, rack, Master, REN, unit.) is displayed.

Each row displays the following information:

- **Type:** it describes the current alarm.
- **Active:** it indicates whether the alarm is still active or not.
- **Appliance:** it identifies the device that triggered the alarm.
- **Cage:** it shows the Cage ID (if any).
- **Time:** it shows the date and time in which the alarm has been triggered.
- **Closed:** it indicates the date in which the alarm was solved.
- **Registered:** it gives information about the time in which the DVC® registered the alarm (if the network communication is acceptable, "Registered" and "Time" fields are the same).

Click on icon  to filter only active alarms.

Opts.	Level	Type	Active On	Appliance	Cage	Time	Closed	Registered
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input checked="" type="checkbox"/>	046D55BA084980	c-400	20/08/2017 02:10:41		20/08/2017 02:10:41
Q	ALARM	Cage without food (AL_ALARM_CAGE_NO_FOOD)	<input checked="" type="checkbox"/>	04CB1ABA084980	c-56	03/08/2017 12:53:23		03/08/2017 12:53:23
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input checked="" type="checkbox"/>	04CB1ABA084980	c-56	03/08/2017 12:53:23		03/08/2017 12:53:23
Q	ALARM	Cage without food (AL_ALARM_CAGE_NO_FOOD)	<input checked="" type="checkbox"/>	04309BBA084980	c-307	01/08/2017 11:16:36		01/08/2017 11:16:36
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input checked="" type="checkbox"/>	04309BBA084980	c-307	01/08/2017 11:16:36		01/08/2017 11:16:36
Q	ALARM	Cage without food (AL_ALARM_CAGE_NO_FOOD)	<input checked="" type="checkbox"/>	048322BA084980	c-31	31/07/2017 18:06:37		31/07/2017 18:06:37
Q	ALARM	Cage without food (AL_ALARM_CAGE_NO_FOOD)	<input checked="" type="checkbox"/>	04D189BA084980	c-60	31/07/2017 17:36:52		31/07/2017 17:36:52
Q	ALARM	Cage without food (AL_ALARM_CAGE_NO_FOOD)	<input checked="" type="checkbox"/>	04C336BA084980	c-382	31/07/2017 17:35:59		31/07/2017 17:35:59
Q	ALARM	Cage without bottle (AL_ALARM_CAGE_NO_BOTTLE)	<input checked="" type="checkbox"/>	040FC6BA084980	c-57	31/07/2017 17:22:02		31/07/2017 17:22:02
Q	ALARM	Cage without food (AL_ALARM_CAGE_NO_FOOD)	<input checked="" type="checkbox"/>	040858BA084981	c-44	31/07/2017 17:21:32		31/07/2017 17:21:32

Click on icon  to display the location to which the alarm is referred and other important information.





Tree Charts

Units Reports - Selection

Elements			Config.	Status	Online	Model
▼ Not Localized	Q					
TUReD4	Q	↓	LOCAL_AHU_POSITIVE	⊙	🚀	WI Flow
TU18001178	Q	↓	LOCAL_AHU_POSITIVE	⊙	🚀	Easy Flow
▼ Congress Center	Q					
▼ Ground Floor	Q					
▼ Showroom	Q					
TU18001181	Q	↓		⊙	🚀	Sky Flow
Pos_D	Q			⊙		Buoy
TU18001177	Q	↓		⊙	⚠️	Smart Flow
dvc-master-showroom	Q			⊙		Master Base Model
17001066A	Q			⊙		Rack Base Model
19200030	Q			⊙	🚀	REM model
TUReD4	Q			⊙		Buoy

To show details of a defined unit, click on the associated Select button. Once opened, a graph with the recorded values and performance will be displayed. The user can adjust the timeframe and select the parameters to show. Once the parameters have been defined, click on the Apply button to apply changes, generate the report and display the graph.

The user can manually zoom in by clicking and holding down the mouse button from the chosen starting point to the desired end. Then, to go back to the original view, press the Reset zoom button. It is also possible to choose which parameter to display by flagging/unflagging the corresponding box next to it. For example, select a single parameter to display the minimum and maximum thresholds (or check when thresholds have been exceeded graphically).

Click on the Download button next to the generated report to download the chosen parameters in the selected timeframe (.CSV file format).

## 9.2 DAILY UNITS REPORTS

This window shows a tree-shaped diagram of all registered and detected units.

A new window will be displayed with the available report by clicking on the Select button of a specific unit.

Each day, a new report is generated as a .csv file and contains the parameters configured in the unit like ACH supply, ACH exhaust, T, RH, P, etc.



TU15002657 Close

Start 03/10/2016 15:36:13 End 03/11/2016 15:36:13 Apply

<< < 1 2 3 > >>

Availability	Date	Reference Date	
Unavailable	03/11/2016 00:00:00	03/11/2016 00:00:00	Create
Unavailable	02/11/2016 00:00:00	02/11/2016 00:00:00	Create
Available	02/11/2016 01:00:29	01/11/2016 00:00:00	Refresh Download
Available	01/11/2016 01:01:28	31/10/2016 00:00:00	Refresh Download
Available	31/10/2016 01:01:25	30/10/2016 00:00:00	Refresh Download
Available	30/10/2016 01:00:52	29/10/2016 00:00:00	Refresh Download
Available	29/10/2016 01:01:11	28/10/2016 00:00:00	Refresh Download
Available	28/10/2016 01:01:11	27/10/2016 00:00:00	Refresh Download
Available	27/10/2016 01:00:59	26/10/2016 00:00:00	Refresh Download
Available	26/10/2016 01:00:32	25/10/2016 00:00:00	Refresh Download
Available	25/10/2016 01:00:23	24/10/2016 00:00:00	Refresh Download
Available	24/10/2016 01:00:17	23/10/2016 00:00:00	Refresh Download

It is possible to download a report by clicking on the Download button. In addition, the user can create a temporary report for the current day by clicking on the Create button and refreshing it with the latest values by clicking on the Refresh button.

### 9.3 DAILY REM REPORTS

This is precisely the same report as the one described in the previous section, but applied to the REM device:

Daily REM Reports Close

19200030

Start 15/09/2021 End 16/10/2021 Apply

<< < 1 2 3 > >>

Availability	Date	Reference Date	Opts.
Unavailable	16/10/2021 02:00:00	16/10/2021	Create
Unavailable	15/10/2021 02:00:00	15/10/2021	Create
Available	14/10/2021 23:59:01	14/10/2021	Refresh Download
Available	13/10/2021 23:59:01	13/10/2021	Refresh Download
Available	12/10/2021 23:59:01	12/10/2021	Refresh Download
Available	11/10/2021 23:59:03	11/10/2021	Refresh Download
Available	10/10/2021 23:59:01	10/10/2021	Refresh Download
Available	09/10/2021 23:59:01	09/10/2021	Refresh Download
Available	08/10/2021 23:59:01	08/10/2021	Refresh Download
Available	07/10/2021 23:59:01	07/10/2021	Refresh Download
Available	06/10/2021 23:59:01	06/10/2021	Refresh Download
Available	05/10/2021 23:59:01	05/10/2021	Refresh Download
Available	04/10/2021 23:59:01	04/10/2021	Refresh Download
Available	03/10/2021 23:59:01	03/10/2021	Refresh Download
Available	02/10/2021 23:59:01	02/10/2021	Refresh Download



## 9.4 DAILY FACILITY REPORTS

This section generates the report of all the units on a single facility. A .zip file containing all the .csv files of all the units separated by folder will be downloaded by clicking on the Download button for a given report.

## 9.5 RACKS OCCUPANCY

Thanks to this report, the user can find the general recap view of the number of DVC® Racks currently registered in the system grouped by the different levels of the facility.

Racks Occupancy						
2 Enabled Racks		75 Positions				
	Positions	(%)	Cages	Registered	In alarm	
Q Not Localized	0	0%	0	0	0	
Q ALL	75	98%	74	46	11	
Q Congress Center	75	98%	74	46	11	
Q First Floor	15	93%	14	14	0	
Q Ground Floor	60	100%	60	32	11	
Q Demo Room	15	93%	14	14	0	
Q Showroom	60	100%	60	32	11	
Device Name	Positions	(%)	Cages	Registered	In alarm	
Q 15000035A	15	93%	14	14	0	
Q 16002853A	60	100%	60	32	11	

Where:

- **Positions:** number of DVC® slot positions in the facility
- **(%):** Percentage of occupied positions
- **Cages:** Number of cages inserted into the DVC® slots
- **Registered:** number of adequately registered cages in the system currently inserted into the DVC® Racks
- **In alarm:** number of cages currently in alarm in the system

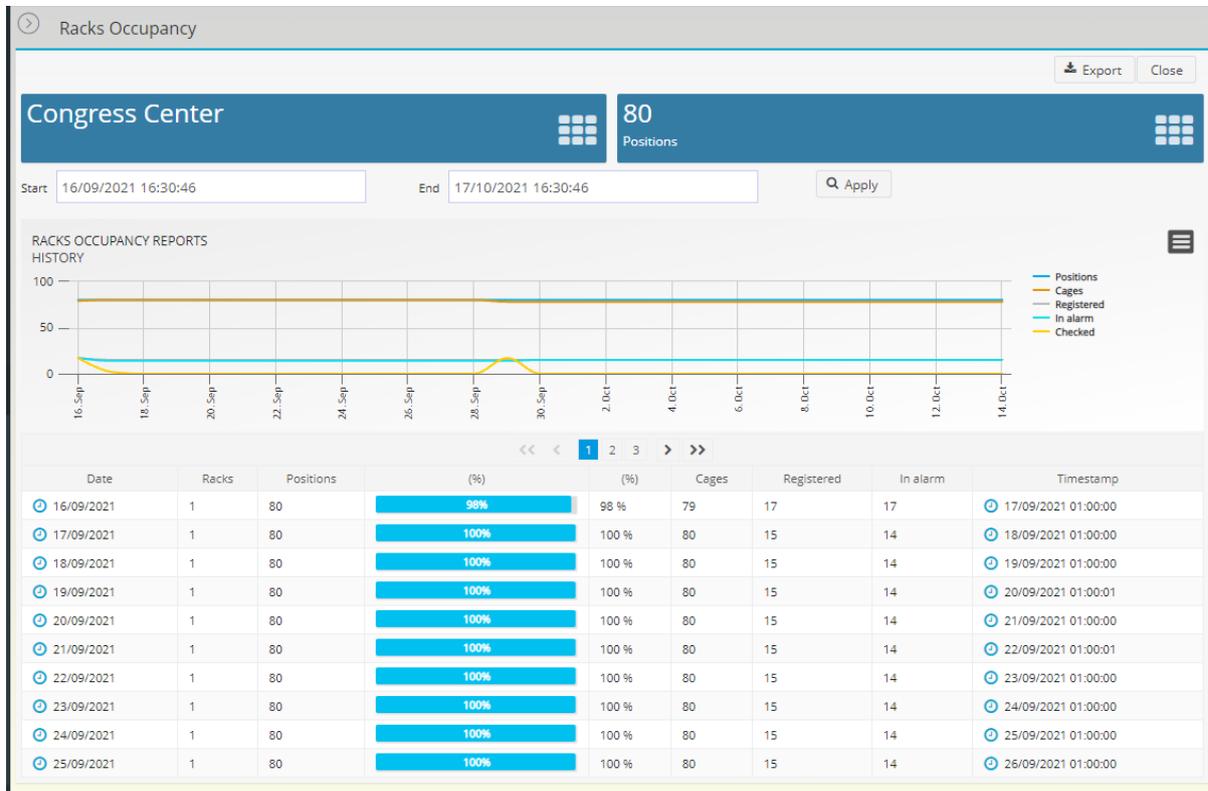


Keep in mind that the "Not Localized Area" should always be empty. Otherwise, the DVC® system cannot localize the cage.



## 9.5.1 HISTORICAL RACK OCCUPANCY

Click on the magnifying lens  to expand each facility level to get a more detailed view of the corresponding rack Occupancy during the selected period.



It is possible to download this section by clicking the corresponding icon 



The report is generated every day at midnight, so it does not consider the common fluctuations due to the working hours.

## 9.6 CAGE TRACKING

In this section, the user can find a detailed view of all the cages currently registered into the system.

Opts.	Status	Name	Research Protocol	AMS ID
	TERMINATED	C-383	DVC Default Protocol	
	TERMINATED	CAGE-383	DVC Default Protocol	
	TERMINATED	CAGE-385	DVC Default Protocol	
	TERMINATED	CAGE-387	DVC Default Protocol	
	TERMINATED	c-46	Behavioural	
	TERMINATED	c-101	Behavioural	
	TERMINATED	C-400	DVC Default Protocol	
	TERMINATED	c-305	DVC Default Protocol	
	TERMINATED	c-307	DVC Default Protocol	
	TERMINATED	c-31	DVC Default Protocol	



Clicking on the corresponding icon , the user can gain access to the official report of the selected cage where all the related information is displayed.

### 9.6.1 EXPORTING CAGE DATA

Click on icon  to export this report in a .csv file.

Timestamp	End	Event	Rack	Location	RFID Tag	User	Master	Buoy	Feedback	Alarm
22/08/2017		INSERTED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
4 18/08/2017		REMOVED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
5 18/08/2017		REMOVED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
6 31/07/2017		INSERTED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
7 31/07/2017		REMOVED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
8 31/07/2017		INSERTED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
9 31/07/2017		REMOVED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		
10 31/07/2017		DAILY CHECKED	(A7)16002853A	Tenicplast-Tenicplast Italy-Congress Center-Ground Floor-Showroom-	041563BA084981	dvc-master-showroom	dvc-master-showroom	1		

### 9.6.2 BEDDING ACTIVITIES

In the Cage Tracking report, there is the opportunity to display the bedding Activities performed during a specific period more in-depth. Click on the button on the top right-hand side of the Cage Tracking report  to gain access to the list of all the Bedding Changes performed in the DVC® system, with a detailed view of the Cage ID, the Operator who performed the activity and the feedback left by the Operator if the DVC® Planner planned the task.



### 9.6.3 DAILY CHECK ACTIVITIES

Another opportunity offered by the Cage Tracking Report is to display a detailed list of all the Cages checked by the Operators.

Just click on the icon  **Daily Check Activities** to access the list of all the Cages checked during the selected period.

Cage Tracking

Daily Check Activities

Start:  End:  Apply Cage Tracking

Export Cancel

Timestamp	Event	Cage	RFID Tag	User	Master	Buoy
31/07/2017 17:13:19	DAILY_CHECKED	c-57	040FC6BA084980	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-41	045BBEBA084980	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-52	04B317BA084984	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-307	04C336BA084980	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-301	04B8AABA084980	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	Cage-72	049B09BA084984	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	Cage-71	04E04FBA084980	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-46	0426E1BA084981	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-32	048399BA084980	grosati	dvc-master-showroom	00000001
31/07/2017 17:12:52	DAILY_CHECKED	c-60	04D189BA084980	grosati	dvc-master-showroom	00000001

Elapsed : 23 ms Results : 124

### 9.7 CAGE CENSUS

This report is extremely important to get a detailed, day by day, accurate census of all the cages and animals registered in the DVC® system.

The user can select a specific time interval by just choosing the proper "Start" and "End" dates and then click "Apply".

Moreover, the user can select a specific "Research Protocol" and/or a specific "Researcher" to get the correspondent list of registered cages and animals for the selected fields.

Cage Census

Start:  End:  Apply Export 🔒

Research Protocol:  Researcher:  Reset All

CAGE CENSUS  
ANIMALS AND CAGES REGISTRATION

Date	Research Protocol	Researcher	Registered Cages	Registered Animals	0 Animal	1 Animal	2 Animals	3 Animals	4 Animals	5 Animals	6+ Animals
10/10/2021			16	38	1	2	6	5	1	1	0
11/10/2021			16	38	1	2	6	5	1	1	0
12/10/2021			16	38	1	2	6	5	1	1	0
13/10/2021			16	38	1	2	6	5	1	1	0
14/10/2021			16	38	1	2	6	5	1	1	0

Month : OCTOBER 2021



Cages are also conveniently divided by the number of animals for a more detailed census activity.

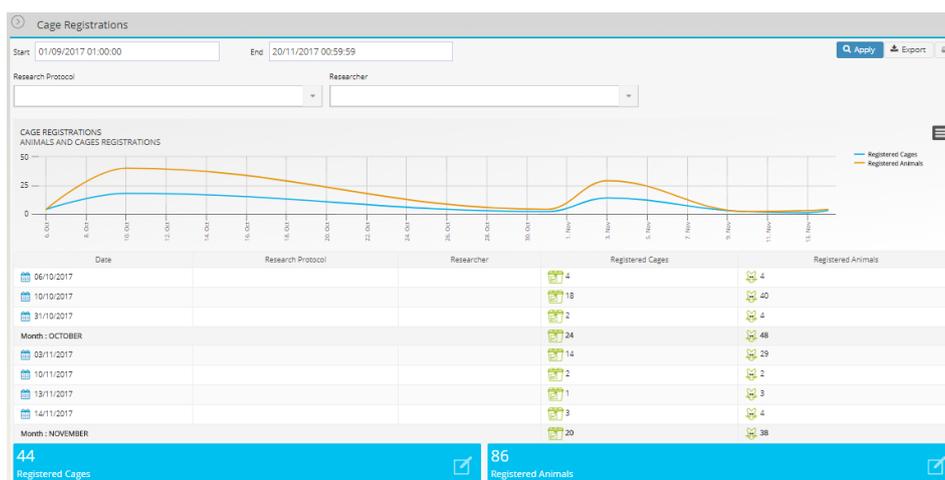
By clicking on the top-right icon  the user can easily download the corresponding .csv file of the selected period and (eventual) other fields (Researcher Protocol and Researcher). This .csv file is extremely powerful to speed up the billing for cages and/or animals purposes.

	A	B	C	D	E
1	Date	Research Protocol	Researcher	Registered Cages	Registered Animals
2	10/10/2017	DVC Default Protocol	ggottardo	1	2
3	11/10/2017	DVC Default Protocol	ggottardo	1	2
4	12/10/2017	DVC Default Protocol	ggottardo	1	2
5	13/10/2017	DVC Default Protocol	ggottardo	1	2
6	14/10/2017	DVC Default Protocol	ggottardo	1	2
7	15/10/2017	DVC Default Protocol	ggottardo	1	2
8	16/10/2017	DVC Default Protocol	ggottardo	1	2
9	17/10/2017	DVC Default Protocol	ggottardo	1	2
10	18/10/2017	DVC Default Protocol	ggottardo	1	2
11	19/10/2017	DVC Default Protocol	ggottardo	1	2
12	20/10/2017	DVC Default Protocol	ggottardo	1	2
13	21/10/2017	DVC Default Protocol	ggottardo	1	2
14	22/10/2017	DVC Default Protocol	ggottardo	1	2
15	23/10/2017	DVC Default Protocol	ggottardo	1	2
16	24/10/2017	DVC Default Protocol	ggottardo	1	2
17	25/10/2017	DVC Default Protocol	ggottardo	1	2
18	26/10/2017	DVC Default Protocol	ggottardo	1	2
19	27/10/2017	DVC Default Protocol	ggottardo	1	2
20	28/10/2017	DVC Default Protocol	ggottardo	1	2
21	29/10/2017	DVC Default Protocol	ggottardo	1	2
22	30/10/2017	DVC Default Protocol	ggottardo	1	2
23	31/10/2017	DVC Default Protocol	ggottardo	1	2
24	01/11/2017	DVC Default Protocol	ggottardo	1	2
25	02/11/2017	DVC Default Protocol	ggottardo	1	2

## 9.8 CAGE REGISTRATION

This report provides a detailed list of all the cage registration events created in the DVC® system.

Like the previous Census Report, the user can select a specific time interval, Research Protocol and/or Researcher to get a more detailed view of the corresponding data.



The report is considering ALL the “cage registration” events. It means that if a cage is registered and then terminated on the same day, it will appear in this current report but not in the previous Census Report.

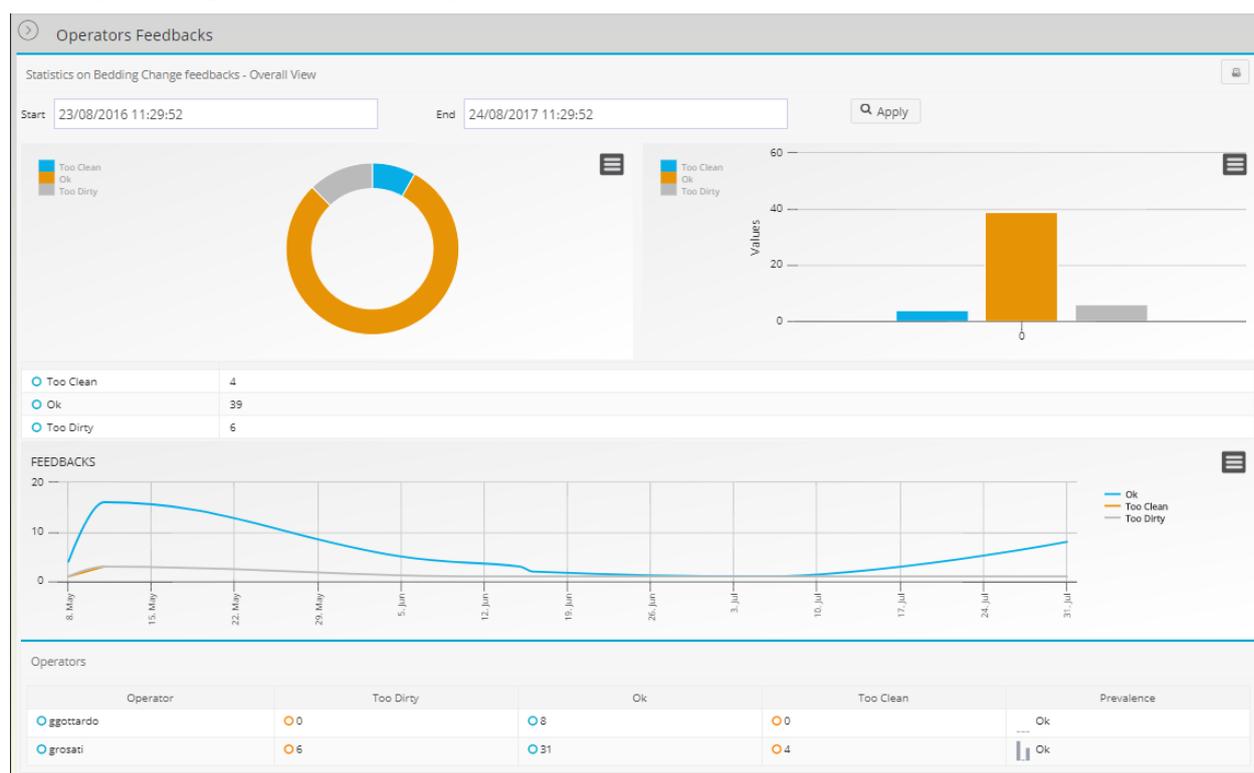


By Clicking on the @top-right icon  the user can easily download the corresponding .csv file of the selected period and (eventual) other fields (Researcher Protocol and Researcher).

	A	B	C	D	E
1	Date	Research	Researche	Registered Cages	Registered Animals
2	06/10/2017	-	-	4	4
3	10/10/2017	-	-	18	40
4	31/10/2017	-	-	2	4
5	03/11/2017	-	-	14	29
6	10/11/2017	-	-	2	2
7	13/11/2017	-	-	1	3
8	14/11/2017	-	-	3	4

## 9.9 OPERATORS FEEDBACKS

This report offers the possibility to evaluate how the DVC® bedding algorithm is performing. Selecting a specific period, the user can display the trend of the Operators' feedback during the cage change task planned by the DVC®Planner.



## 9.10 DAILY CHECKS

This report has a format similar to the previous one related to the Racks Occupancy, but it provides information related to the status of the (mandatory) daily checks the Operators in the Animal rooms should perform every day.



Daily Checks

Export

2 Enabled Racks | 75 Positions

	Positions	Registered	Checked	Not Checked
Not Localized	0	0	0	0
ALL	75	46	0	46
Congress Center	75	46	0	46
First Floor	15	14	0	14
Ground Floor	60	32	0	32
Demo Room	15	14	0	14
Showroom	60	32	0	32
Device Name	Positions	Registered	Checked	Not Checked
15000035A	15	14	0	14
16002853A	60	32	0	32



If a new cage is registered AFTER the Daily Check task has been already performed, the cage is not "tagged" as daily checked.

### 9.10.1 TODAY NOT CHECKED CAGES

Clicking on the corresponding icon  close to the NOT CHECKED column, the user can display the list of the Cages that have not been checked yet.

Daily Checks

Not Checked Cages

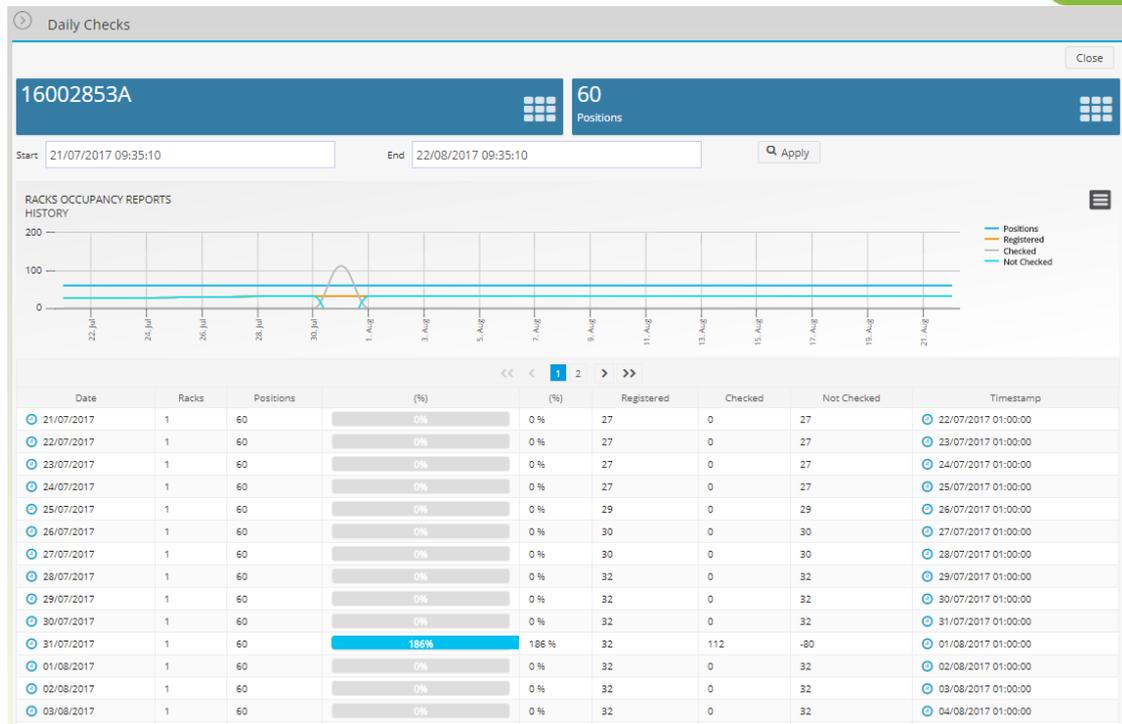
Close

15000035A | 15 Positions

Status	Name	Type	UUID	Research Protocol	AMS ID
INSERTED	d-48	GENERIC	492871f6-d401-4a38-b107-1174621aef75	DVC Default Protocol	
INSERTED	d-412	GENERIC	f3ca726e-64dc-4d6c-9877-ee03c962e6ad	DVC Default Protocol	
INSERTED	d-415	GENERIC	068b7e18-6d3e-4c46-aacc-06e7480af997	DVC Default Protocol	
INSERTED	d-406	GENERIC	d9fe9f8d-4031-44f8-b473-19200b08a843	DVC Default Protocol	
INSERTED	d-409	GENERIC	636d7502-3719-4cb3-a16f-67c0eb29553d	DVC Default Protocol	
INSERTED	d-404	GENERIC	94082294-823e-43a4-8703-907917045935	DVC Default Protocol	
INSERTED	d-401	GENERIC	3cfd649-f465-4330-93ca-cfa80a4d5e77	DVC Default Protocol	
INSERTED	d-414	GENERIC	442a01f-9526-4261-9d69-851223b1cfad	DVC Default Protocol	
INSERTED	d-403	GENERIC	05935d39-bdbd-42bd-84bd-18467d3d4f93	DVC Default Protocol	
INSERTED	d-405	GENERIC	397cfe91-b8e9-4735-98fd-3238f4312648	DVC Default Protocol	

### 9.10.2 HISTORICAL CHECKED CAGES

To display a temporal view of the checked Cages based on the different levels of the facility, click on the corresponding icon .



The historical report is created at 01:00am of the next day.

## 9.11 SICKNESS REPORT

This section lists all the animals (with IDs or generic) with "Sickness" issues generated by the Operator in the corresponding interface.

Opts.	Status	Animal
...	DEAD	189
...	HEALTHY	Generic Animal
...	SICK	Generic Animal
...	SICK	340
...	HEALTHY	341
...	DEAD	139
...	SICK	133
...	DEAD	160
...	SICK	22
...	SICK	175

Each animal can have three different healthy statuses:



Animals are listed in this report when they have been tagged at least once with the label SICK. The one displayed is the last status edited by the Operator (which could also be healthy or Dead).



Moreover, by clicking on the corresponding icon , it is possible to explore the history of the corresponding selected animal more in detail.

Status	Reason	Treatment	Note	Created by	Created on	Cage Name
 DEAD	Fighting	No records found.	K.O at 5 round	Giorgio	 12/04/2018 17:27:55	c-41
 SICK	Growing Teeth	Analgesia	provided today	Giorgio	 12/04/2018 17:26:31	c-41
 SICK	Growing Teeth	No records found.		Giorgio	 12/04/2018 17:19:11	c-41

Furthermore, the user can fully discover the reason, eventual treatment and added Notes, who raised the issue, when (Created on), Cage ID where the animal was at the time of the created issue.

In order to download all these issues, the user can easily click on the corresponding icon  and fully export in a .csv format the list of all the detailed issues listed by the time of the creation:

	A	B	C	D	E	F	G	H	I
	Animal	Status	Cage Name	Reason	Treatment	Position	Created on	Note	Created by
1									
2	139	SICK	c-383	Migraine, Growing Teeth, Tumor, Rectal Prolapse	Injection, Analgesia		2018-03-23 09:42:14.727	yes	Giorgio
3	139	SICK	c-383	Migraine, Growing Teeth, Tumor	Injection, Analgesia		2018-03-23 09:46:03.756		Giorgio
4	139	HEALTHY	c-383				2018-03-23 09:46:33.961		Giorgio
5	139	SICK	c-383	Migraine			2018-03-23 09:47:13.963		Giorgio
6	189	SICK	c-402	other			2018-03-23 10:02:27.524		mpoli
7	340	SICK	c-383	Growing Teeth	Analgesia		2018-03-23 10:18:06.42	No	Giorgio
8		SICK	c-407	Tumor			2018-04-04 10:54:30.146		operator
9		HEALTHY	c-407				2018-04-04 10:57:22.464		operator
10		SICK	c-407	Tumor			2018-04-04 11:00:29.694		operator
11	340	HEALTHY	c-383				2018-04-05 08:21:19.059		ggottardo
12	340	SICK	c-383	other			2018-04-05 08:21:21.766		ggottardo
13	139	HEALTHY	c-383				2018-04-05 08:21:27.56		ggottardo
14	139	SICK	c-383	other			2018-04-05 08:21:28.964		ggottardo
15	341	SICK	c-383	other			2018-04-05 08:21:57.139		ggottardo
16	341	HEALTHY	c-383				2018-04-05 08:22:00.602		ggottardo
17	139	SICK	c-383	other	Injection		2018-04-05 08:28:45.167	NOTE FREE TEXT 50G	ggottardo
18	133	SICK	c-310	Tumor			2018-04-06 08:35:15.241		ggottardo
19	160	SICK	c-41	Growing Teeth			2018-04-12 15:19:11.688		Giorgio
20	160	SICK	c-41	Growing Teeth	Analgesia		2018-04-12 15:26:31.316	provided today	Giorgio
21	22	SICK	c-413	Growing Teeth			2018-04-17 16:06:18.505		operator
22	175	SICK	c-385	Wounds	Analgesia		2018-04-24 10:44:44.471	took 30 sec more	ggottardo
23	13	SICK	c-384	Tumor head	Analgesia		2018-05-07 14:07:40.609	Massimo Ferrari	ggottardo
24									

## 9.12 DEATH REPORT

In this report, the user can access the list of all the animals that have been culled in the system.

Death Report					
Start		End			
01/03/2018 16:24:03		08/05/2018 16:24:03		 Apply  Export	
 10					
Opts.	Animal	Created by	Created on	Received	
	 196	Giorgio	 23/03/2018 10:42:14	 23/03/2018 10:42:14	
	 24	mpoli	 23/03/2018 11:03:56	 23/03/2018 11:03:56	
	 189	mpoli	 23/03/2018 11:04:30	 23/03/2018 11:04:30	
	 189	mpoli	 23/03/2018 11:04:33	 23/03/2018 11:04:33	
	 188	ggottardo	 26/03/2018 08:45:17	 26/03/2018 08:45:17	
	 175	ggottardo	 26/03/2018 08:45:17	 26/03/2018 08:45:17	
	 114	ggottardo	 26/03/2018 08:45:17	 26/03/2018 08:45:17	
	 24	ggottardo	 26/03/2018 10:08:49	 26/03/2018 10:08:50	
	 189	ggottardo	 26/03/2018 10:08:49	 26/03/2018 10:08:50	
	 176	ggottardo	 26/03/2018 10:08:49	 26/03/2018 10:08:50	
 Elapsed : 54 ms  Results : 17					

In order to discover the "Death Reason", the user can conveniently click on the corresponding



icon ☹️ and discover the corresponding reason.

☰ 1

Animal	196
Cage Name	c-383
Position	
Note	killed by giorgio
Created by	Giorgio

All death reasons

End of Experiment	
-------------------	--

✖ Close



In case the cage is terminated using the Operator feature called "Cage Termination", all the animals inside are tagged with the "Death Reason" "cage\_termination".

☰ 11

Animal	175
Cage Name	c-385
Position	
Note	
Created by	

All death reasons

cage_termination	no reason explained
------------------	---------------------

✖ Close

## 10 SET UP

This section has been designed to create unlimited possible AHU and REM configurations applied to the selected units and devices.

Any unit connected to the AHU and REM device has a standard default configuration set initially by Tecniplast.

This standard configuration can be cloned and modified as needed. Then, this new (cloned) configuration can be applied to a specific unit/device or multiple.

### 10.1 EQUIPMENT CONFIGURATION

More specifically, for the units, the standard configurations created by Tecniplast are two (NEGATIVE and POSITIVE) dependently on how the AHU has to work:

🔍 Clone	NEGATIVE	NEGATIVE	AHU	🕒 14/01/2021 13:36:36	🔒
🔍 Clone	POSITIVE	POSITIVE	AHU	🕒 14/01/2021 13:36:36	🔒



By clicking the button **Clone**, the user created a new one that can be modified by clicking the small icon **Define**:



Description	POSITIVE(Clone)
Prevalence	POSITIVE
Unit	AHU

ACH Supply ACH: 75

ACH Exhaust %: -25

ACH Supply set point	75 ACH	<input type="range"/>
Differential	-25 %	<input type="range"/>
ACH Supply Alarms	Min. 10 ACH - Max. 90 ACH	<input type="range"/>
ACH Exhaust Alarms	Min. 10 ACH - Max. 90 ACH	<input type="range"/>
Temperature Alarms	Min. 18 °C - Max. 31 °C	<input type="range"/>
Pressure Alarms	Min. 0 Pa - Max. 30 Pa	<input type="range"/>
Humidity Alarms	Min. 10 % - Max. 90 %	<input type="range"/>

Update Close

The same approach is applied to the REM device. In this case, only one standard configuration is available and can be cloned by clicking the corresponding button:



Now, by clicking the corresponding button **Define**, it is possible to modify the thresholds related to the REM alarms:





**REM\_DEFAULT\_1636976781854**

Description: REM\_DEFAULT(Clone)  
Unit: REM

Temperature alarms: Min. 20 °C - Max. 24 °C  
Relative Humidity alarms: Min. 40 % - Max. 70 %

Noise Alarms: Max. threshold 70 dBA [0 + 120] Minutes above the threshold 5 min [0 + 1440]  
Acceleration Alarms: Max. threshold 0.05 g [0 + 3.00] Minutes above the threshold 5 min [0 + 1440]

Light On Starting at 07:00 [24h format] to 19:00 [24h format]  
Light Off Starting at 20:00 [24h format] to 06:00 [24h format]

**Update** **Close**

In both cases, the name of the new created configuration can be easily changed by clicking the little icon :

**Configuration Update**

Name: POSITIVE\_1636976482571  
Description: POSITIVE(Clone)

**Close** **Update**

**Configuration Update**

Name: REM\_DEFAULT\_1636976781854  
Description: REM\_DEFAULT(Clone)

**Close** **Update**

## 10.2 ASSIGN CONFIGURATION

Now that all the unit and REM configurations have been created, it is time to assign them to the corresponding AHU units and REM devices.

This functionality is available by navigating to the Facility Equipment Status.

A specific configuration can be applied to the different levels of the Facility (Building, Floor, Room, Unit), and all the below devices will get automatically the same settings.



Facility Equipments Status

Building Structure View Auto Refresh  off

Elements	Status	Config.	REM Config.	Monitor	Actual Config. (AHU, REM)	Online	Model
▶ Not Localized							
▼ Congress Center		▼	▼	Q	⚠ REM_DEFAULT		
▼ Ground Floor		▼	▼	Q	⚠ REM_DEFAULT		
▼ Showroom		▼	▼	Q	⚠ REM_DEFAULT		
📄 TU18001181	🟢	▼		Q 📄 ⬇	POSITIVE_TEST	🟢	Sky Flow
▼ dvc-master-showroom	🟢			Q 📄			Master Base Model
▼ 17001066A	🟢			Q 📄			Rack Base Model
📄 19200030	🟢		▼	Q 📄	REM_DEFAULT	🟢	REM model
📄 TU18001177	🟢	▼		Q 📄 ⬇		🟢	Smart Flow
📄 TUReD4	🟢	▼		Q 📄 ⬇	LOCAL_AHU_POSITIVE	🟢	Wi Flow
📄 Pos_D	🟢			Q			Buoy

Elapsed : 40 ms Results : 23

Facility Equipments Status

Building Structure View Auto Refresh  off

Elements	Status	Config.	REM Config.	Monitor	Actual Config. (AHU, REM)	Online	Model
▶ Not Localized							
▼ Congress Center		▼	▼	Q	⚠ REM_DEFAULT		
▼ Ground Floor		▼	▼	Q	⚠ REM_DEFAULT		
▼ Showroom		▼	▼	Q	⚠ REM_DEFAULT		
📄 TU18001181	🟢	▼		Q 📄 ⬇	POSITIVE_TEST	🟢	Sky Flow
▼ dvc-master-showroom	🟢			Q 📄			Master Base Model
▼ 17001066A	🟢			Q 📄			Rack Base Model
📄 19200030	🟢		▼	Q 📄	REM_DEFAULT	🟢	REM model
📄 TU18001177	🟢	▼		Q 📄 ⬇		🟢	Smart Flow
📄 TUReD4	🟢	▼		Q 📄 ⬇	LOCAL_AHU_POSITIVE	🟢	Wi Flow
📄 Pos_D	🟢			Q			Buoy

- POSITIVE\_1636976482571
- POSITIVE\_1636976330757
- POSITIVE\_TEST
- NEGATIVE\_Test
- NEGATIVE
- POSITIVE

Elapsed : 40 ms Results : 23



Facility Equipments Status

Building Structure View Auto Refresh  off

Elements	Status	Config.	REM Config.	Monitor	Actual Config. (AHU, REM)	Online	Model
▶ Not Localized							
▼ Congress Center		▼	▼	Q	REM_DEFAULT		
▼ Ground Floor		▼	▼	Q	REM_DEFAULT		
▼ Showroom		▼	▼	Q	REM_DEFAULT		
TU18001181	🔧	▼	▼	Q	POSITIVE_TEST	🔧	Sky Flow
▼ dvc-master-showroom	🔧						Master Base Model
▼ 17001066A	🔧			Q <input type="text"/>			Rack Base Model
19200030	🔧		▼	Q <input type="text"/>	REM_DEFAULT	🔧	REM model
TU18001177	🔧	▼		Q <input type="text"/> <input type="text"/>		🔧	Smart Flow
TURed4	🔧	▼		Q <input type="text"/> <input type="text"/>	LOCAL_AHU_POSITIVE	🔧	Wi Flow
Pos_D	🔧			Q			Buoy

Elapsed : 40 ms Results : 23

### 10.3 INCOHERENT CONFIGURATION

When managed by the DVC<sup>®</sup> system, the AHU units and the REM device configurations can be only modified by following the previous workflow.

This means that if a User is locally modifying a configuration of the AHU unit, the system detects a difference between what has been set initially (by assigning the created new configuration) and what is locally running. This difference is called "INCOHERENT CONFIGURATION," and this situation triggers a specific alarm.





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