

PdM (PREDECTIVE MANAGEMENT SYSTEM) Application User Guide

Ver 09.10.2021

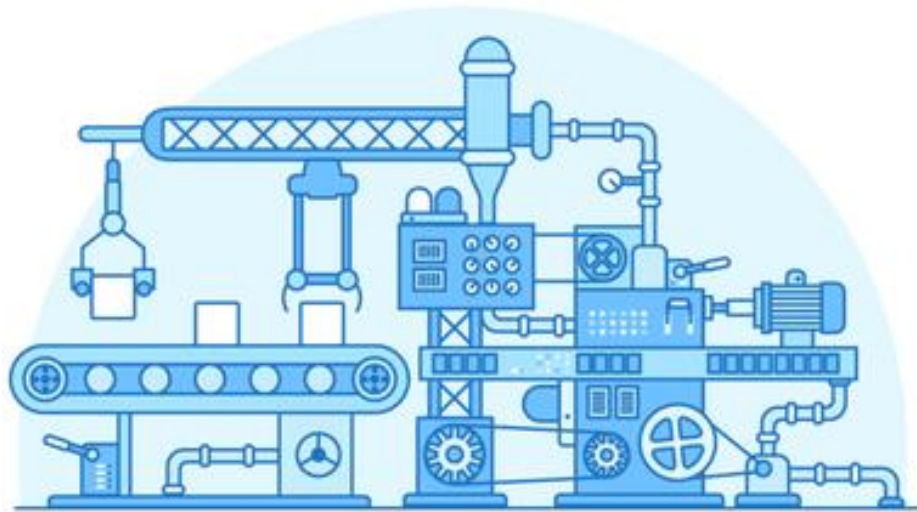


Predictive Management System

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- **About Us Page**



Predictive Maintenance

PdM (Predictive Maintenance) is brought to you by the Predictive Management System Company which is incorporated in Winnipeg, the province of Manitoba of Canada as a corporation. The Company is established in 2020 to provide a solution to save costs for the companies by reducing the expert advice they have to pay for asset maintenance, as the assets themselves will tell what they need if they are unable to fix themselves automatically. The user can receive updates in real-time even remotely. Besides, they receive alerts when the machine seems to have a problem.

[Street Address] [City, ST ZIP Code]

[Telephone]

[Fax]

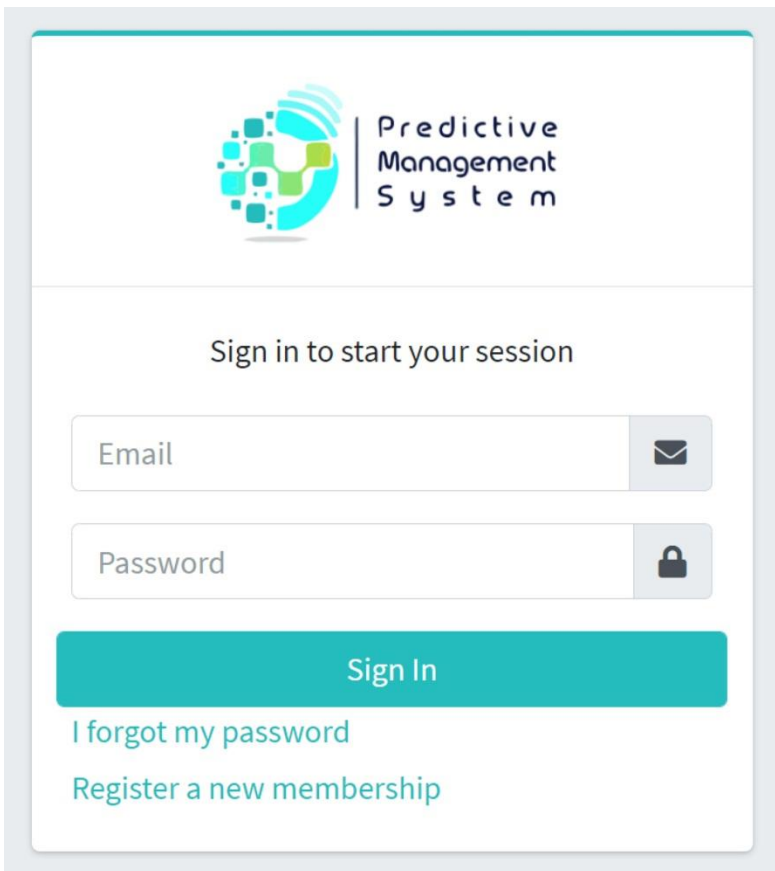
Email: info@predictivemanagementsystem.com

Web: www.predictivemanagementsystem.com

Instagram: predictive_management_system

- **User Management**

Please Login into app.predictivemanagementsystem.com



The image shows a login interface for the Predictive Management System. At the top left is a logo consisting of a cluster of blue and green squares with a white signal-like pattern. To the right of the logo, the text "Predictive Management System" is displayed in a sans-serif font. Below the logo and text, the instruction "Sign in to start your session" is centered. There are two input fields: the first is labeled "Email" and has an envelope icon on its right side; the second is labeled "Password" and has a padlock icon on its right side. Below these fields is a large teal button with the text "Sign In" in white. Underneath the button are two links: "I forgot my password" and "Register a new membership", both in a teal color.

Users who have previously registered for the Web Application must login by:
Entering their **User Name**.
Entering their **Password**.

Selecting **Sign In** to advance to the next screen and begin using the application.

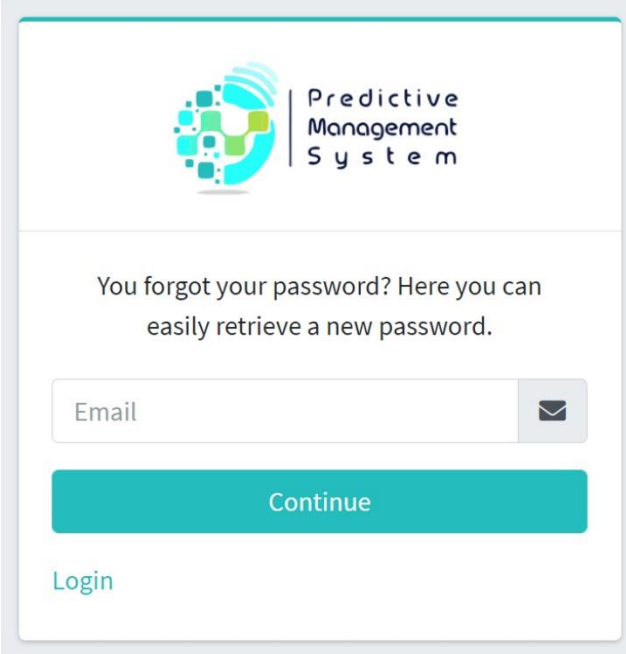
Register a new membership


Users who have not previously registered for the Web Application must select "Register a new membership" to access the "New User Registration" page.

Forgotten Passwords


If a user forgets his/her password, he/she must select "Forgotten password help."

Forgotten Password Help



 Predictive Management System

You forgot your password? Here you can easily retrieve a new password.

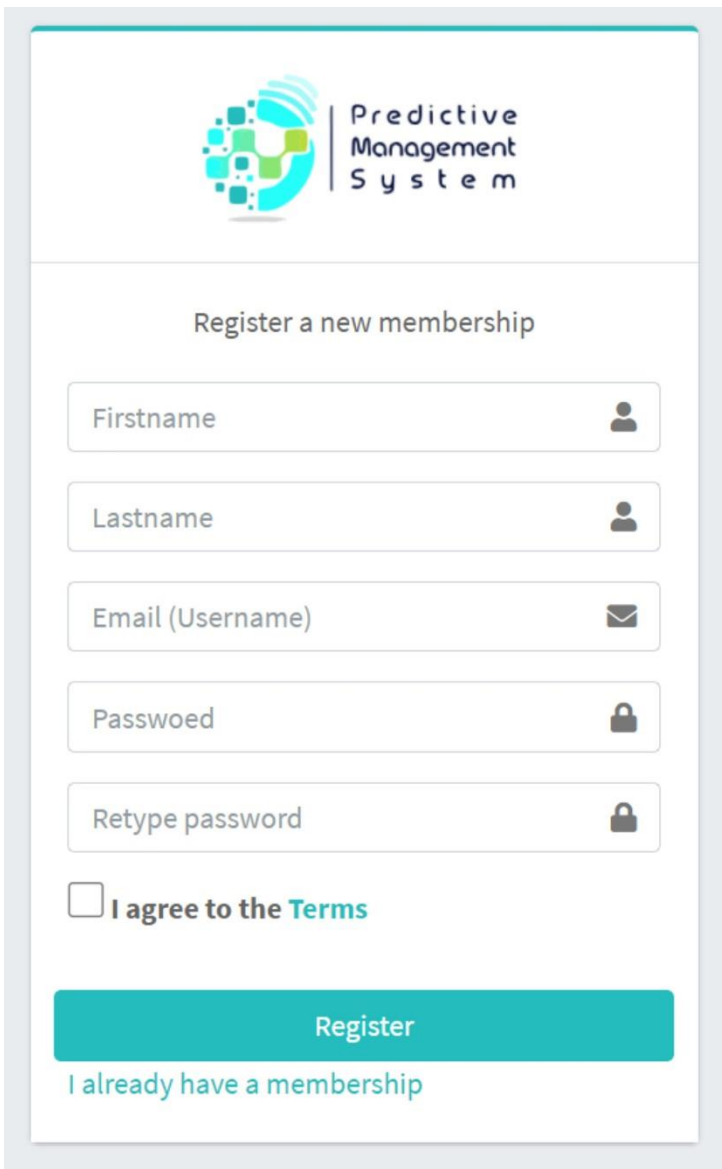
Email 

[Continue](#)

[Login](#)

User will need to enter a valid email id which was entered at the time of Registration and click on submit button to get notification about his/her Password Check your mail and login again.

New User Registration Page



Predictive Management System

Register a new membership

Firstname

Lastname

Email (Username)

Password

Retype password

I agree to the [Terms](#)

Register

[I already have a membership](#)

Users will be asked to enter or select the following information:

Name— First and Last

Enter the user's first and last name.

E-Mail

Enter the user's e-mail address. E-mail addresses are not case sensitive.

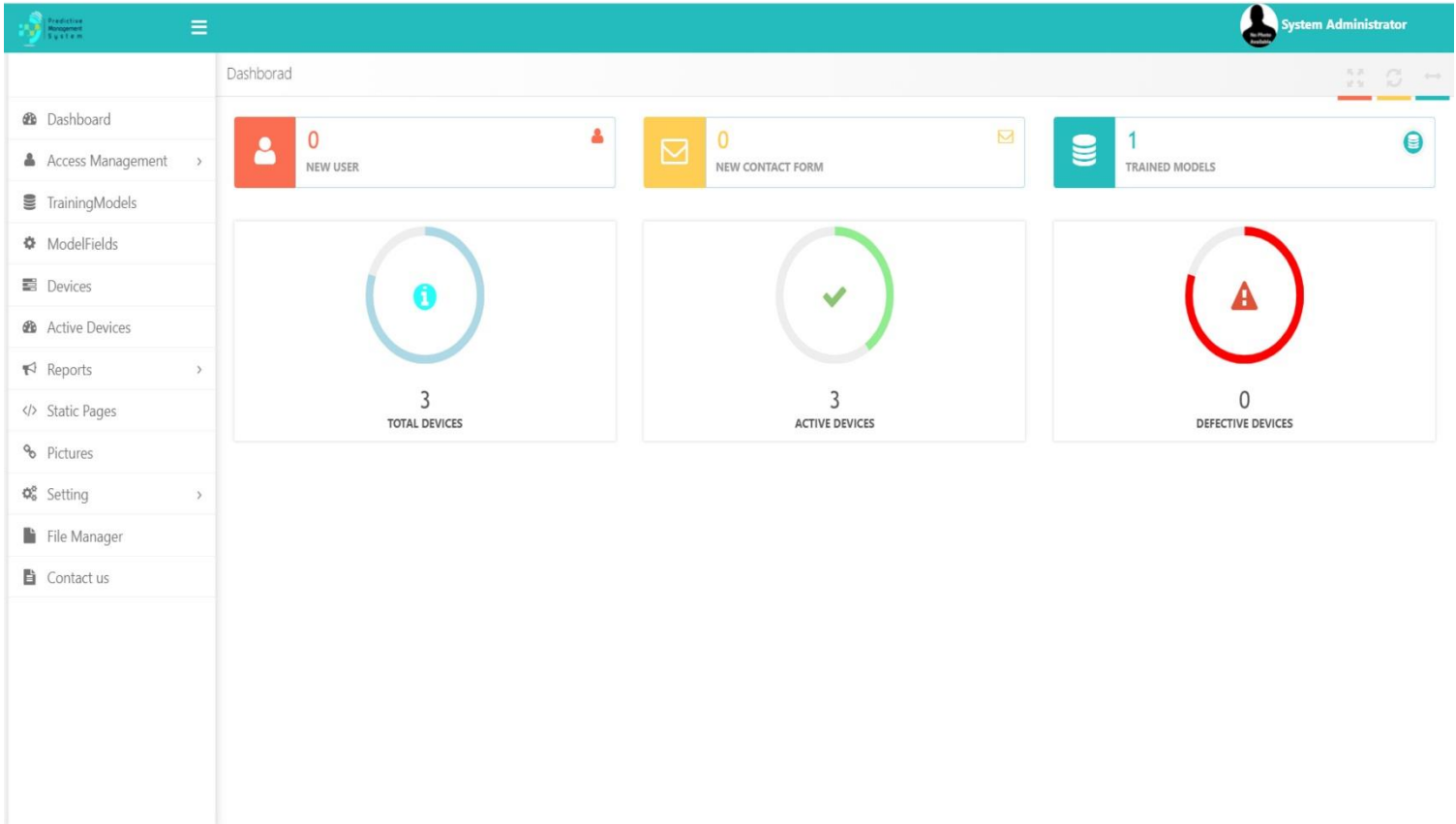
Password

Passwords must be at least eight characters long and contain at least one letter character and one numeric character. Passwords are case sensitive.

I Agree to the Terms

Check the check-box to ensure that user accepts all Terms and Conditions.

• Main Panel

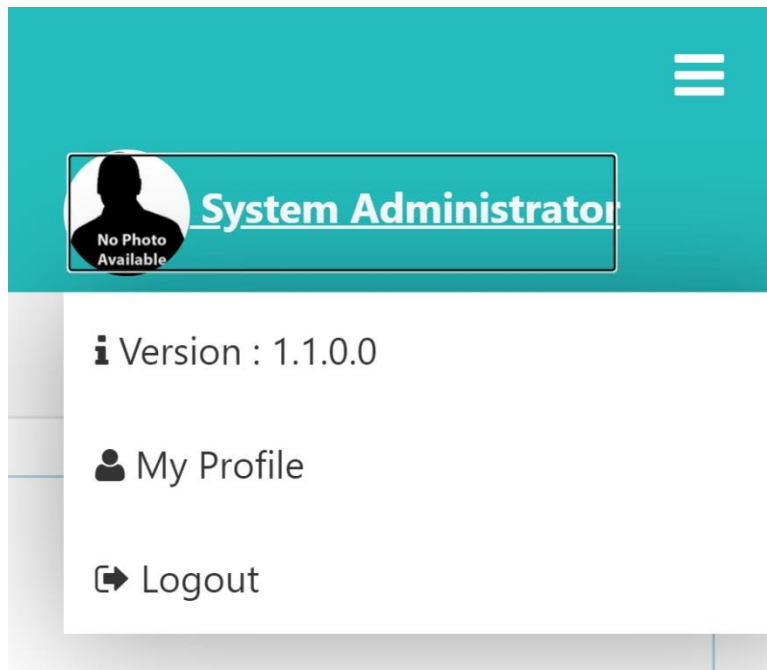


The Main Panel on the left side of the page includes following headers:

- Access Management
- Training Models
- Model Fields
- Devices
- Active Device
- Static Page
- Picture
- Settings
- File Manager

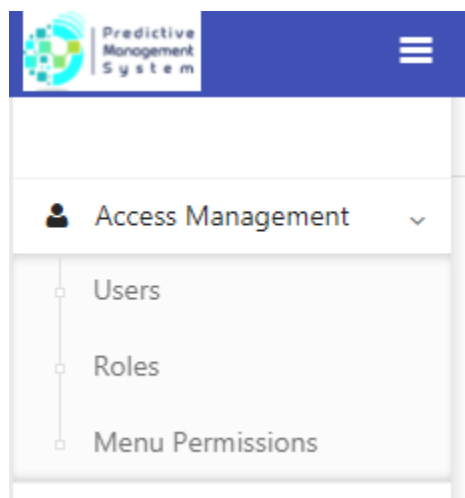
Each user, can have access according to the role(s) defined for him/her.

Now we explain each, one by one and first those used to manage the application:



First of all, on the right side of the page, once you click on the logo icon, you may see:

- The Software Version
- My Profile: Where you can choose your Profile Icon and change your Account Info.
- Logout

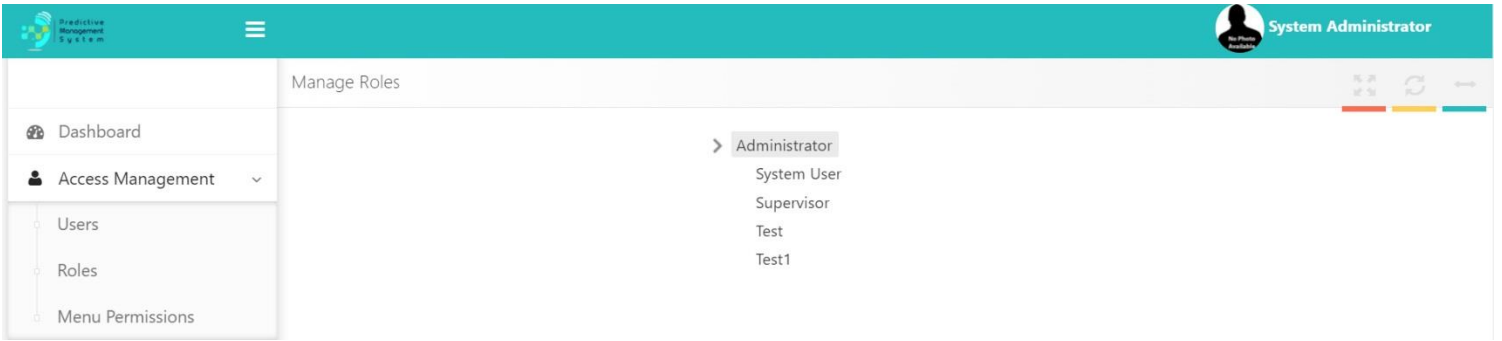


• Access Management

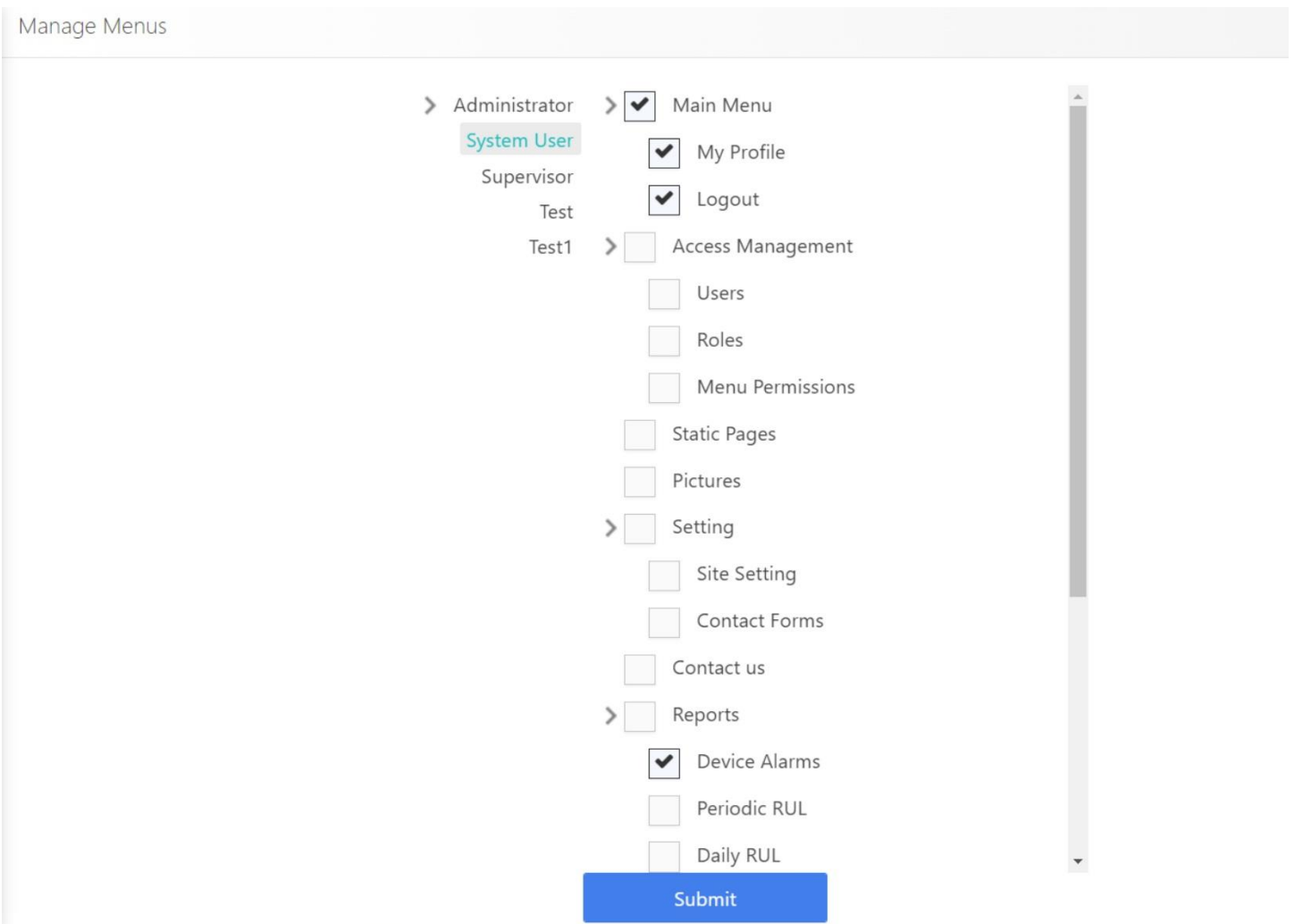
- Users: Where Admin can define the access level of each user. Also Edit ability is predicted there where Admin may define a range of date for each user's password validity. In the meantime, Admin may delete a user's account.

Username(Email)	User ...	Fulln...	Status	Email	Regis...	Man...	Avatar
ziyaeepour@pouyesh.n...	System User	Nooshin ziyaeepour	Inactive	ziyaeepour...	2021/07/31	Manage Role	No Photo Available
a@b.com	System User	Test User	Active	a@b.com	2021/07/01	Manage Role	No Photo Available
administrator	Admin User	System Administra...	Active	kabiri_198...	2019/12/27	Manage Role	No Photo Available

- Roles: An unlimited number of roles may be defined like: Admin, etc. Each user may have one or more roles.

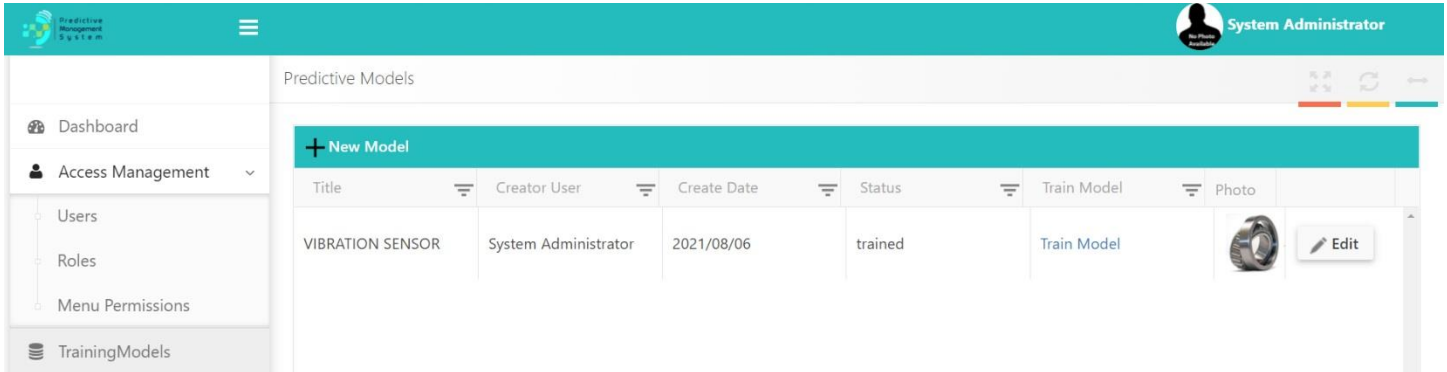



- o Menu Permission: Where Admin can define which parts of the menu are accessible for each role.



As expressed before, in Role defining section, managing roles will be adjusted like Admin, Tester, User or even the client's name.

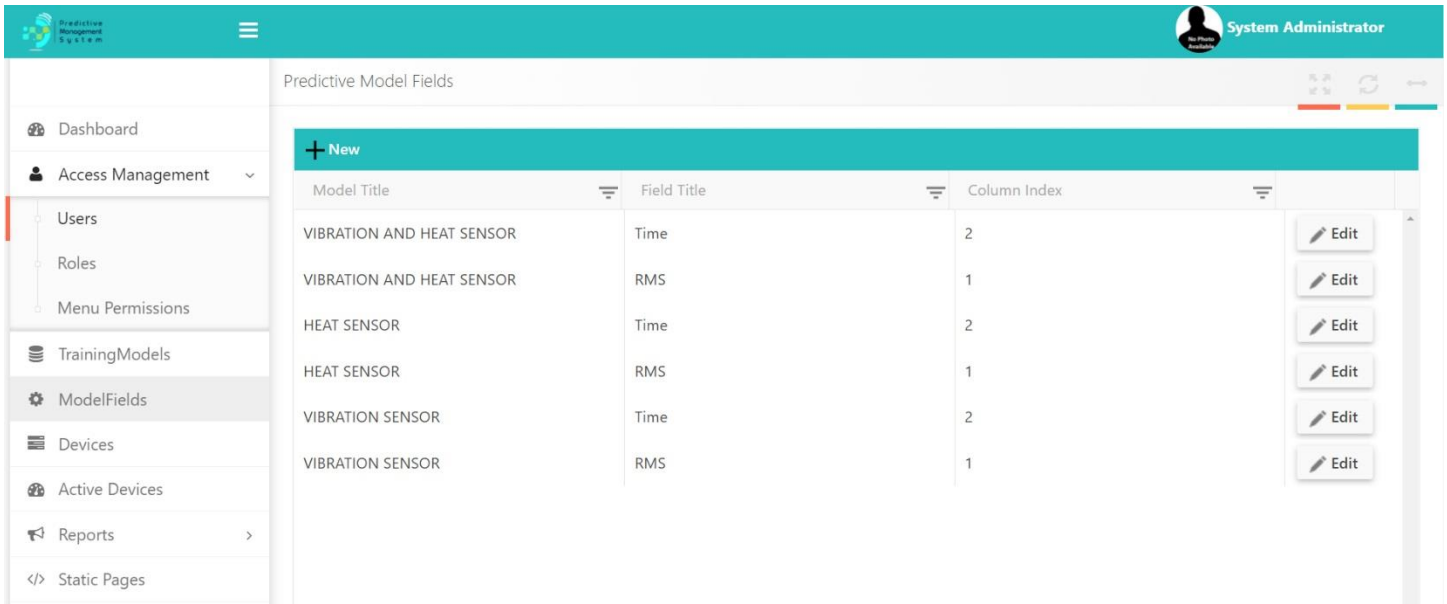
- **Training Models:**



+ New Model						
Title	Creator User	Create Date	Status	Train Model	Photo	
VIBRATION SENSOR	System Administrator	2021/08/06	trained	Train Model		Edit

- Once Admin clicks the Training Mode on Roll Bearing icon, a small page will be opened to show:
 1. Training Status
 2. The Training Accuracy
 3. Training Time(s): Normally between 1000 to 1200 seconds.
- You should add any new device under analysis, in this section by defining a Model. In this section you need to allocate Data Set to train the system. After defining the model, you need to define Model Fields.




• **Model Fields:**



Once you push the "New" button, you will see RMS and Time are the fields which are defined for Roll Bearing. In this device (Roll Bearing) we should define which column in the Excel of Data Set is RMS and which one is Time for example. In fact, if the data set are Excel input, we should define which one is the 1st or 2nd or... column. The Column Index box is used for this purpose. The last Column is output which you can click "Update" button instead.

So, push "Train Model" if you are Admin, then "Select the file", then "Start Training". Once the situation of the model changes to "Trained" from "In Progress";

- **Devices:**

Model Title	Device Title	User	Threshold	Device Key	Photo	Activation	
VIBRATION SENSOR	GAS CIRCULATION FAN	System Administrator	60	56fc0925-3b1b-4853-8dfa-dd59e30dc37d		Active	Edit
VIBRATION SENSOR	GENERATOR	System Administrator	10	54616940-7a79-43b8-bcf3-fa6f50acbf24		Active	Edit
VIBRATION SENSOR	MAIN GENERATOR	System Administrator	50	472e8e6c-7c53-40e7-9389-5bdf03eb87a3		Active	Edit

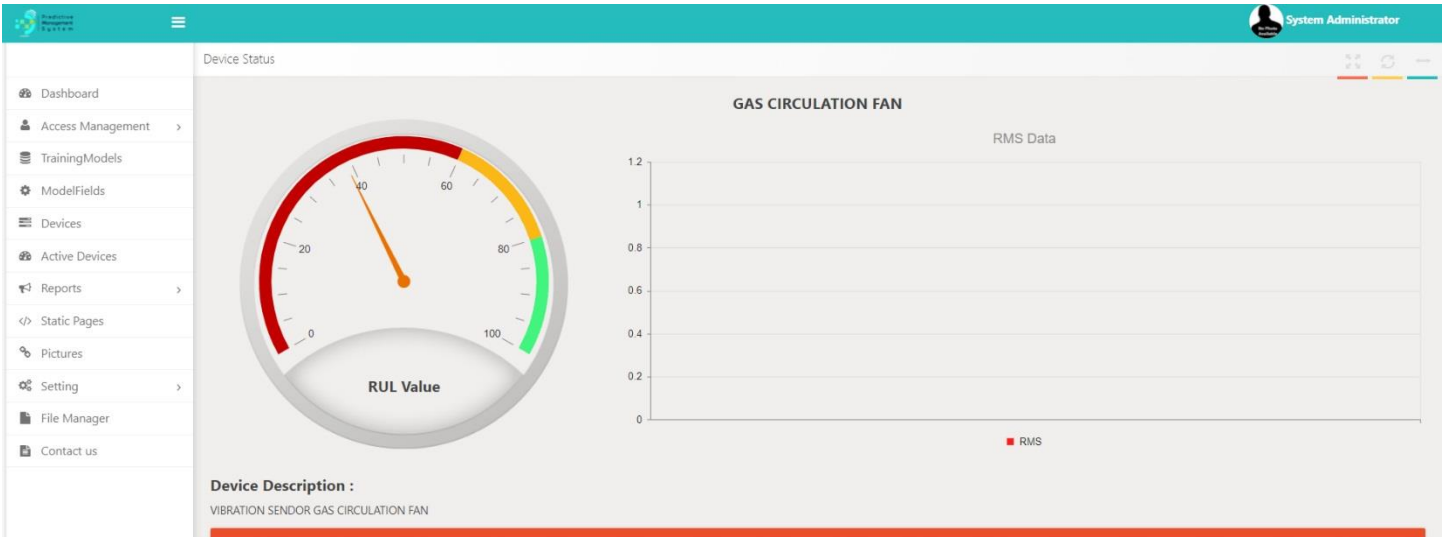
Once the Model is trained, you can define your devices. In this section you will be able to define the "Alarm Threshold" of warning announcement by the system, in addition to intervals too. In our model we chose 40 with an interval of 30 minutes for example. In the last box, you define the person who should be warned via their email definition. Each device will be defined for Our Server by a Device Key which is generated automatically.

• **Active Device:**

The screenshot displays the 'Predictive Management System' interface. The top navigation bar includes the system logo, a menu icon, and the user profile 'System Administrator'. A left-hand sidebar contains navigation options: Dashboard, Access Management, TrainingModels, ModelFields, Devices, Active Devices (highlighted), Reports, Static Pages, Pictures, Setting, File Manager, and Contact us. The main content area is titled 'Devices' and features three device cards:

- GAS CIRCULATION FAN:** Includes an image of a bearing, description 'VIBRATION SENDOR GAS CIRCULATION FAN', UniqueId '56fc0925-3b1b-4853-8dfa-dd59e30dc37d', Last RUL Value '38.6181284428776', Last Log Time '2021-08-24 15:51:31', and a 'View Device Status' link.
- GENERATOR:** Includes an image of a generator, description 'VIBRATION READING ON MAIN SHAFT', UniqueId '54616940-7a79-43b8-bcf3-fa6f50acb24', Last RUL Value '77.4054390752684', Last Log Time '2021-09-24 09:02:33', and a 'View Device Status' link.
- MAIN GENERATOR:** Includes an image of a generator, description 'VIBRATION AND HEAT MONITORING', UniqueId '472e8e6c-7c53-40e7-9389-5bdf03eb87a3', Last RUL Value '22.4539357386222', Last Log Time '2021-09-25 05:29:07', and a 'View Device Status' link.

Shows the devices which are already under analysis. Under this section, we can check any "Device Status" with further information. Here a Roll Bearing Useful Life (RUL) is shown in the server side, while in the lower box, we will have a log of any advised alarm, if there is any. (Currently no Alarm is shown.) If we press "View Device Status" a new page will show us the RUL by the system:



In this version, we have added a form to transfer the end-user’s experience to the admin as follows:

The screenshot shows a 'Contact US' page with a 'Contact Form' modal. The form includes the following fields: 'First name' (text input with 'System'), 'Last name' (text input with 'Administrator'), 'Email' (text input with 'kabiri_1986@yahoo.com'), 'Subject' (dropdown menu with 'Select Subject'), and 'Message text' (text area). A blue 'Submit' button is located at the bottom of the form. The left navigation menu is visible, with 'Contact us' highlighted. The top right corner shows the user 'System Administrator'.

Also a report with daily or periodic interval is reachable from the following menu:

The screenshot shows the 'RUL Report' page. At the top, there is a teal header with the 'Innovative Management System' logo on the left and 'System Administrator' on the right. A navigation menu on the left lists: Dashboard, Access Management, TrainingModels, ModelFields, Devices, Active Devices, Reports (expanded), Periodic RUL, Daily RUL, Periodic RMS, Daily RMS, Device Alarms, Static Pages, and Pictures. The main content area has a title 'RUL Report' and a search bar. Below the search bar, there are input fields for 'From Date' (2021-10-08), 'To Date' (2021-10-08), and 'Devices'. A blue 'View Result' button is positioned to the right of the 'Devices' field. The central part of the page is a large empty grid with a vertical axis on the left labeled from 0 to 1. At the bottom center of the grid, the text 'Min RUL Max RUL' is displayed.

The screenshot shows the 'Daily RUL Report' page. It features the same teal header and navigation menu as the previous screenshot. The main content area has a title 'Daily RUL Report' and a search bar. Below the search bar, there are input fields for 'Device' and 'Date' (2021-10-08). A blue 'View Result' button is positioned below the 'Device' field. The central part of the page is a large empty grid with a vertical axis on the left labeled from 0 to 1. At the bottom center of the grid, the text 'RUL' is displayed.

Device Alarm Report

From Date : 2021-10-08 To Date : 2021-10-08

Devices :

View Result

Device Title	DateTime	Threshold	RUL	Emails
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Same as any other program, Exit is also placed there to leave the program.

The End.