

# EyeVib

## Software Manual

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**Insights to Vibration Monitoring**

**DEVELOPED BY:**

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**Centre of Excellence in Advanced  
Manufacturing Technology  
IIT Kharagpur**



# 1. Landing page



User can login to the dashboard by clicking on “**Login**” or “**Enter Dashboard**” button.

## Member Login

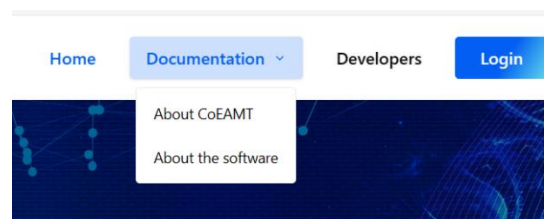
E-Mail

Password

☒ Remember me [Forgot password?](#)

LOGIN IN

“**Documentation**” provides more details about the Centre of Excellence in Advanced Manufacturing Technology (CoEAMT), and the software: EyeVib.



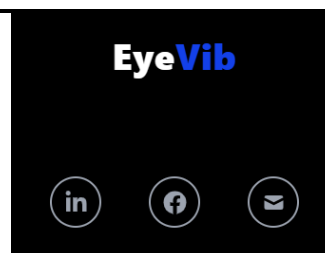
“**Developers**” of EyeVib



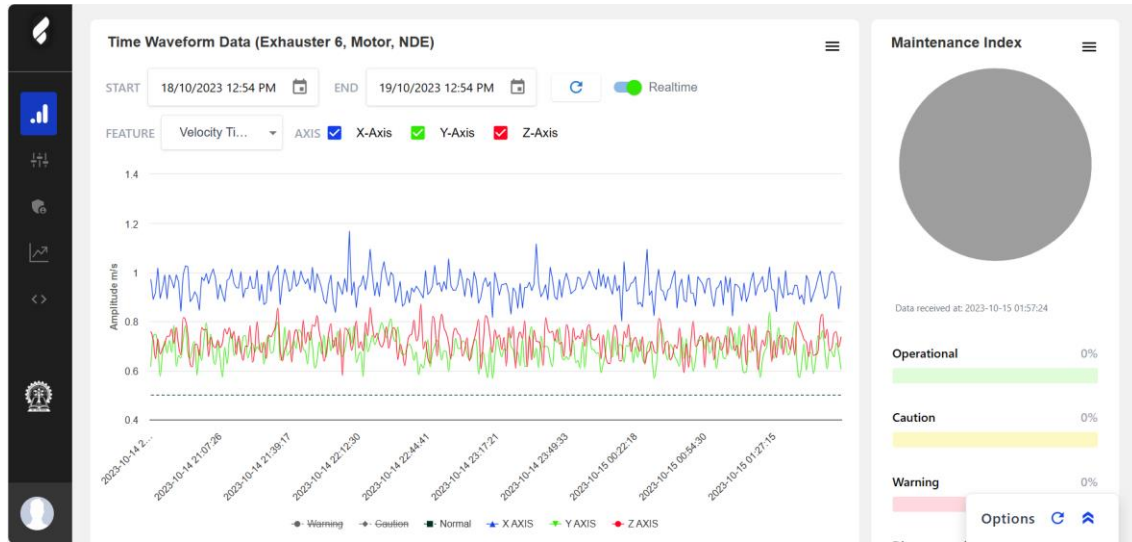
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Home Documentation Developers

“**Connect**” with us.

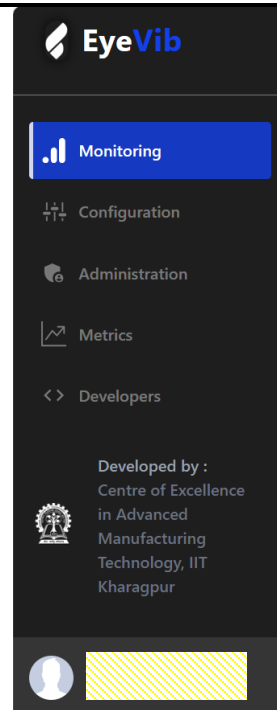


## 2. Monitoring page



Collapsible “**Navigation bar**” for navigating to other tabs, such as

- Configuration
- Administration
- Metrics
- Developers



Collapsible “**Options**” window, for selection of assets.

- **Plant:** Bokaro Steel Plant
- **Machine:** Exhauster 1 to 6
- **Component:** Motor, Fan
- **Location:** Drive end, Non drive end



- After selection of desired asset, click on “**Fetch**” button.



- “**Collapse**” the “**Options**” window.

Options



Plant

Bokaro Steel Plant

Machine

Exhauster 6

Component

Motor

Location

Non Drive End

“**Time Waveform Data**” shows real-time acceleration and velocities along X, Y and Z axis.

START 18/10/2023 12:54 PM END 19/10/2023 12:54 PM

- Past or “**History**” data can be seen by selecting desired time period, followed by pressing the “**Fetch**” button.

FEATURE Velocity Ti... AXIS ☒ X-Axis ☒ Y-Axis ☒ Z-

Acceleration Time Waveform

Velocity Time Waveform

- Menu to toggle between Velocity/Acceleration data, and select/deselect of axis.





- Enable/disable threshold markers in velocity time-waveform plot.

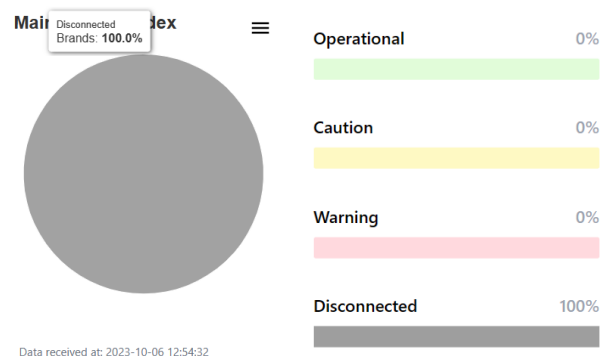


Data “**export**” in PNG, PDF or XLSX format.

- Download PNG
- Download PDF
- Download XLSX

“**Maintenance Index**” shows the running condition of the selected asset.

- **Operational:** Fraction of datapoints received on current day (24 hours) compared to data frequency at fully operational condition.
- **Caution:** Fraction of data points crossed Caution limit
- **Warning:** Fraction of data points crossed Warning limit
- **Disconnected:** (1 – operational)



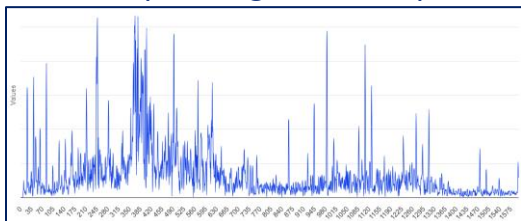
“**Device Details**” window provides information about:

- “**Asset ID**” of selected asset
- “**Mac ID**” if selected asset
- “**Name**” of the selected machine, component, and location

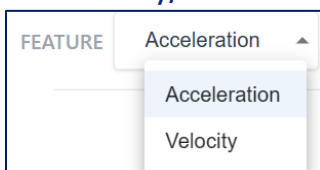
Device Details	
Asset ID	6d7f45c0-3039-11ed-81ef-d732c...
Asset Mac ID	040D844CE549
Exhauster Name	Exhauster 1
Asset Name	MOTOR
Asset Location	DRIVE END

Each  icon in “FFT Data” plot shows the timestamp of receiving FFT data in MongoDB database.

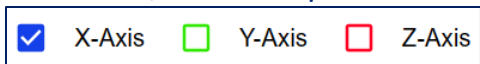
- Pressing any  icon will show the corresponding FFT data plot.



- Option for selecting Velocity/Acceleration FFT.







- Enable/Disable option for axis.

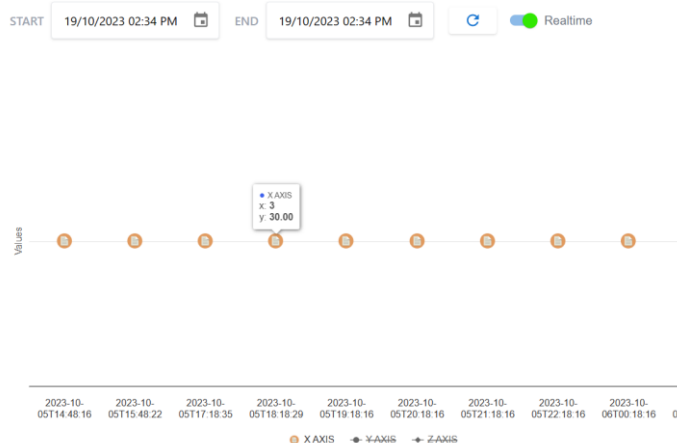


“Instantaneous Parameters” shows the RMS values obtained from latest data stored in MongoDB database.

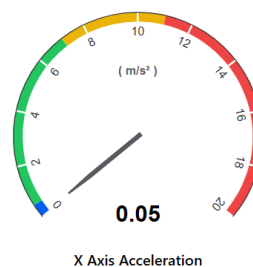
- Acceleration RMS
  - X-axis
  - Y-axis
  - Z-axis
- Velocity RMS
  - X-axis
  - Y-axis
  - Z-axis
- Colour code:

-  Normal range
-  Healthy range
-  Caution range
-  Warning range

FFT Data (Exhauster 1, Motor, DE)



Instantaneous Parameters (Exhauster 1, Motor, DE)



### 3. Configuration page



Selection of asset from “Options” window.

The 'Options' window displays a list of assets for selection. The 'Plant' dropdown is set to 'Bokaro Steel Plant'. The 'Machine' dropdown is set to 'Exhauster 1'. The 'Component' dropdown is set to 'Motor'. The 'Location' dropdown is set to 'Drive End'.

Set “Start Value” 0 and “End Value” 20 for the range of

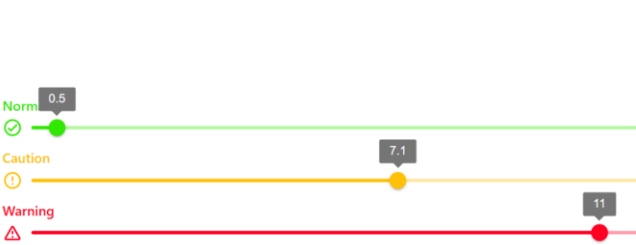
The figure shows the 'Start value' and 'End value' input fields. The 'Start value' is set to 0 m/s and the 'End value' is set to 20 m/s. A 'SAVE' button is located below the input fields.

threshold, and press  button.

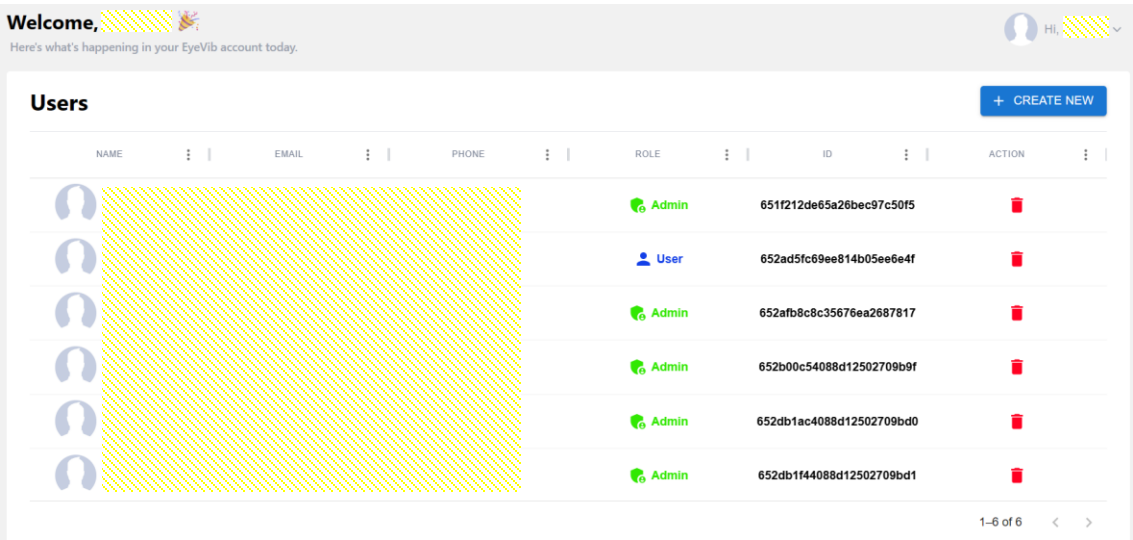
Move the “Slider”  button for changing the set threshold.

The figure shows the axis selection checkboxes: 'X-Axis' (checked), 'Y-Axis' (unchecked), and 'Z-Axis' (unchecked).

- Select axis for which the threshold needs to be changed.



# 4. Administration page



“Sign up” for creating new user.

- Assign as “User” or “Admin”

- Additional rights of “Admin”
  - Add/delete user
  - Change threshold values
  - Receive e-mail for “Daily summary report”

Role of a member will be shown as

“Admin”  Admin or “User”  User



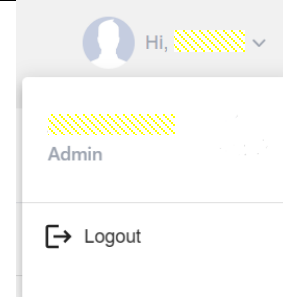
“ID” of the member.

Delete a member using the “Action” button.

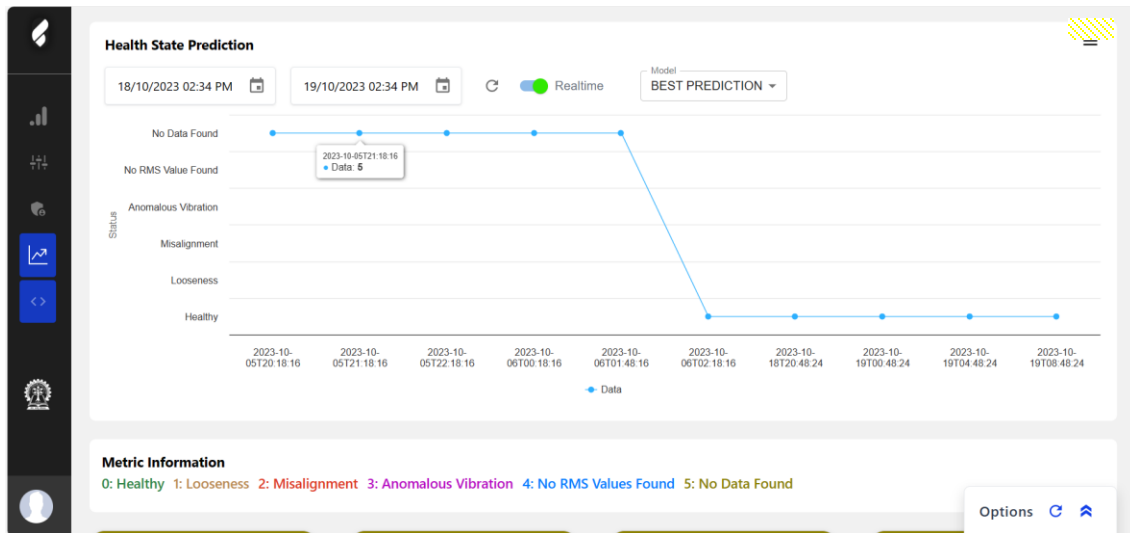


ID	ACTION
651f212de65a26bec97c50f5	
652ad5fc69ee814b05ee6e4f	

“Logout” button to sign off the dashboard.



## 5. Metrics page



Selection of asset from the “Options” window, and press the “Fetch” icon.

Options

Plant: Bokaro Steel Plant

Machine: Exhauster 1

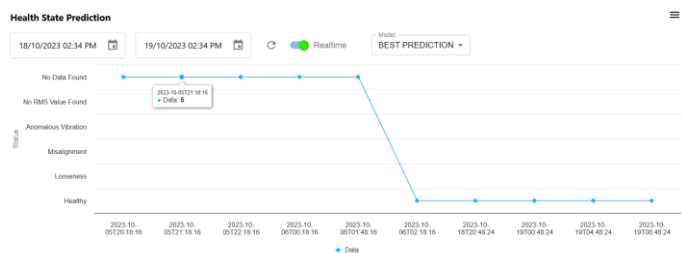
Component: Motor

Location: Drive End

“Health State Predictions” shows the real-time predicted state for the selected asset.

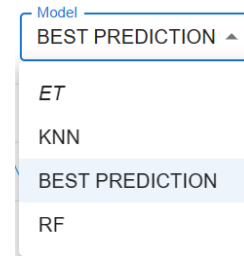
- History of predicted states can be visualized by selecting desired time period.

18/10/2023 02:34 PM | 19/10/2023 02:34 PM | Fetch



Selection of Machine Learning models:

- **ET:** Extra Trees
- **KNN:** K-Nearest Neighbour
- **RF:** Random Forest
- **Best prediction:** Based on the highest voting of above three ML models (**RECOMMENDED**)



“**Metric Information**” shows the colour codes used to represent different predicted health states.

**Metric Information**

0: Healthy 1: Looseness 2: Misalignment 3: Anomalous Vibration

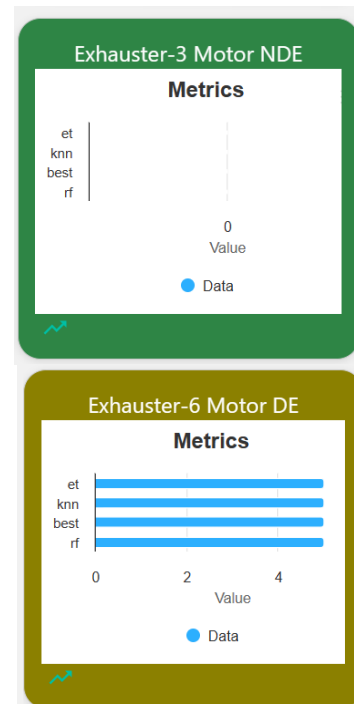
4: No RMS Values Found 5: No Data Found

According to the colour codes mentioned, a “**Healthy**” asset shows coloured window as per the latest prediction.

- Predicted health states are plotted with bar chart:



- 0: Healthy
- 1: Looseness
- 2: Misalignment
- 3: Anomalous Vibration
- 4: No RMS Values Found
- 5: No Data Found



The predicted results for selected asset can be exported as PNG, PDF or XLSX format.

Download PNG

Download PDF

Download XLSX

## 6. Developers page



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**IITKGP-RDCIS MoA, signed on 12th October 2022**

