

# Challenge

## Resources:

Each group has the same 100 initial datapoints with 8 inputs and 5 outputs.

Each group has a budget of 400 possible additional measurements via the web interface, which can be accessed with your group login.

## Safety:

A measurement is safe, if the three output channels PM 1, PM 2 and Pressure cylinder stay below the respective thresholds: PM 1:6; PM 2: 16 and Pressure cylinder: 160.

If one or two of the PM channels are violated, one additional measurement is reduced from the current budget.

If the measurement violates the pressure cylinder channel, 10 additional measurements are subtracted from the current budget.

## Goal:

Model the first 4 output channels (NO<sub>x</sub>, PM 1, CO<sub>2</sub>, PM 2) as good as possible on the test data.

The test data is provided in the submission.csv file on the given file share.

The test data contains both safe and unsafe points.

The crucial metric is the scaled Mean-Squared-Error (MSE), but **only in the safe area**.

In your final submission, please evaluate the model on all points, even if they are not safe.