

## ADVANCED CONTROL SYSTEMS IN INDUSTRY 5.0 ENABLING PROCESS MINING

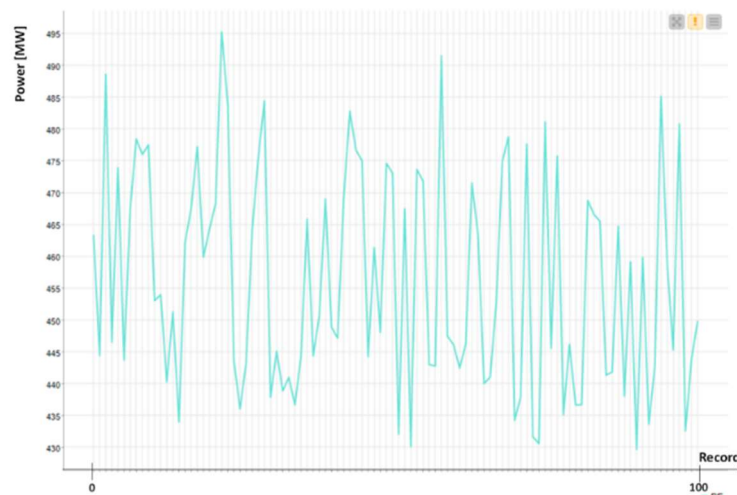
Artificial intelligence is constantly evolving and reinventing itself. Today, AI makes it possible to go deeper into all sorts of things, for example by increasing production processes within Industry 5.0 through Process Mining. There are two main objectives of the concept of Process Mining:

- ⇒ The first objective is to increase the intelligence of machines with numerous computer tools.
- ⇒ The second objective is the decision-making autonomy of the machines.

In this study, two examples are used to understand the intervention of Process Mining: one in the food sector and the other in the energy sector.

- Let's take the example of the food sector (roasting food): The food product goes through many ovens to cook. Thanks to the process mining approach, the temperature of the furnaces is updated. If the temperature is not correct, the AI detects it and finds a solution to solve the problem so that the temperature is as adequate as possible.
- Let's take energy production as an example: Energy is produced in a power plant. The energy produced is indicated by artificial intelligence. If the production is not correct, the AI detects it and finds a solution to fix the production problem so that it goes back to normal.

Figure 1: Produced energy power: first 100 records of the dataset.



This graph shows the production of electrical energy made by artificial intelligence. Artificial intelligence constantly updates processes and increases production through process mining.

Source: Alessandro Massaro, MDPI, 10 November 2022.