Towards data-driven decisions for flexible and sustainable production operations for the aggregates industry

The aggregates industry is a primary contributor for the building materials used in roads, railways, and housing constructions which indirectly impacts everyone’s daily life. However, it needs improvement towards data-driven decisions for its profitable and sustainable operations.

Aggregates production industry is a market sensitive industry wherein, the demand and supply of particular products drive the production process. In order to be competitive in the market, it is required to identify potential improvement opportunities and create actions to achieve it.

One of the ways to achieve an insight on the process is to measure data to determine how the equipment are performing and how well are the performances with respect to entire production circuit. Together with the machine learning techniques, the measured data, it can be made meaningful for decision-making.

The aim of this project is to review possible key performance index that can be measured from an aggregates production plant. Further it is required to identify the tools that can be used to measure such KPIs and to create a demonstration by working together with the industry. Following are the steps that can guide the project:

1. Review of the current aggregate production processes and involved equipment. Identification of relevant KPIs to measure performance.
2. Conceptual development to measure entities from the equipment or process circuit.
3. Development of prototype to demonstrate real-time process measurements.
4. Calculation and validation of process/equipment performance and recommendations for decision-making or process improvements.