

Remote and Continuous Data Analysis

For critical assets

Candidato:

Damiano Gianotti

Relatore:

Prof. Enrico Bini

Controrelatore:

Prof.ssa Rosa Meo

Correlatore:

Prof. Yves Van Ingelgem



UNIVERSITÀ
DEGLI STUDI
DI TORINO

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Introduction

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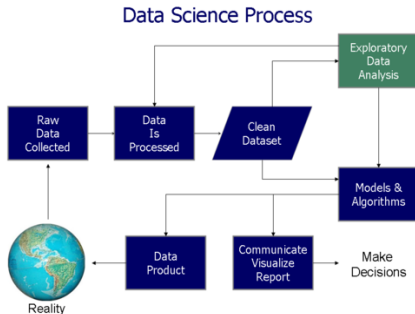
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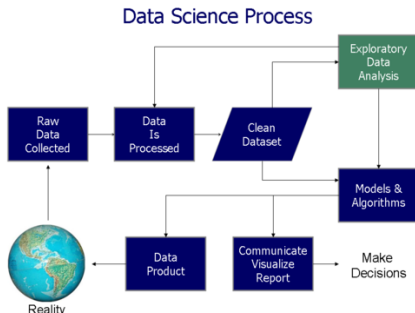
Data analysis

- Process of **breaking down** a whole into its constituent parts for closer evaluation.



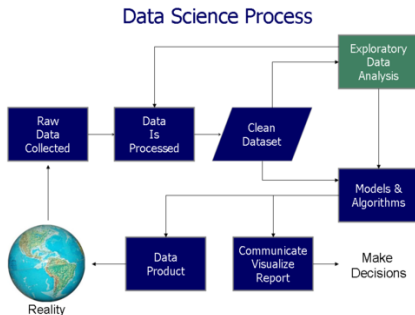
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- **Connection to the scientific method**



Operational environment: Maintenance

In the numerous areas in which data analysis shines, we focus on **Maintenance**, where the priority is ensuring system reliability and safety during life cycles. The basic types include:

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 - 3 Condition-based maintenance: *maintenance when it is needed*



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Zensor

Quick Overview

Based in Brussels, [Belgium](#). Main focus is IoT and Industry 4.0.

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Four aspect are involved:



Core Service

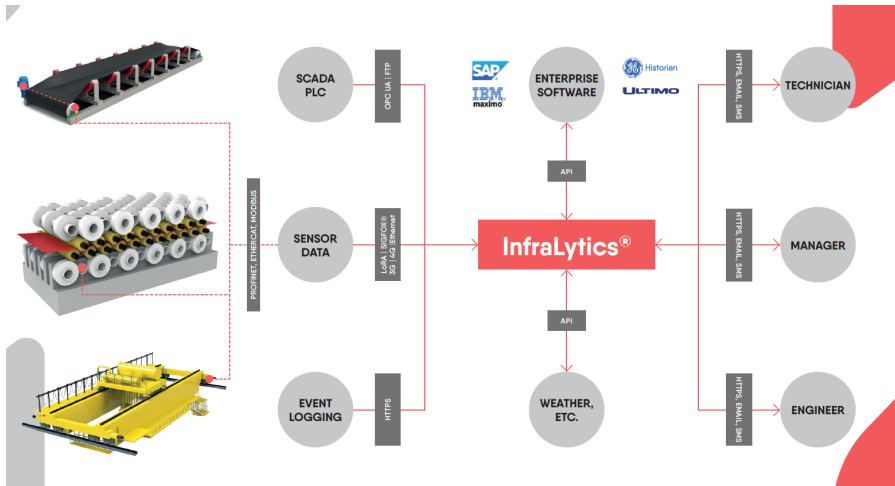


Figure: Project building blocks

Tools

Pandas

- Data processing & cleaning
- Python library, widely adopted
- *Split-Apply-Combine* approach

InfluxDB

- Data storage & warehouse
- Key-value – *Time Series Database*
- Data that represent how a system changes (over time)

Grafana

- Data exploration & visualization
- Web-based interactive app
- Dashboard development



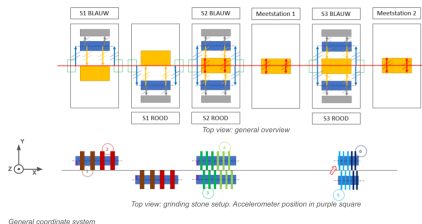
Blade grinder vibration

Intro & Goals

Improve blade-cutting machine line;
has a high number of standstills
and not ideal quality of the cut.

Goals:

- Increase production quality
- Identify the impact of the grindstones turning
- Find the root-cause of strong vibration



4 Phases



Conclusion



Grazie per l'attenzione