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# EU-CIP
# Project type B
# Resilience Intelligence Tool

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# Solution Description

- In order to maintain and enhance a high level of resilience of modern critical infrastructures in Europe, it is necessary to manage and keep transparent huge amounts of varied data (measurement, monitoring, management systems, etc.) and maintain information interconnection integrity.

- A tool was developed with a goal of integrating data and information and providing transparent and smart decision making. The solution is a Business Intelligence (BI) tool, using Artificial Intelligence (AI) focused on the resilience of Critical Infrastructure (CI).

# Solution Innovation

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The main problems addressed in the area of CIP/CIR are the three best identified ones in the industry so far:

a) "data/information flood" – solved by integrating intelligently large amount of different types/sources of data information – also in combination with data-lake/data-mart and digital twin technologies, on the leading side, and the legacy systems, on the lagging side;

b) "lack of transparency" – solved by providing interactive, BI-based intuitive interfaces;

c) "missing the early warnings and signals" – solved by smart focusing on most important subsets of resilience data/information.

# Key features

- We use the general Microsoft solutions (Microsoft Power BI and the Microsoft SQL server) as the development basis, but the final solution is fully customized to the end-user needs in terms of data and information sources addressed and used (documents, measurement records, analysis results…) from a whole spectrum of tools.

- The technology allows to perform the what-if analysis interactively and with practically no IT-training, all the knowledge prerequisites are related to the domain knowledge (e.g. risk assessment of the CI assets).

# Sector Relevance

- Power generating facilities

- Raw material processing plants

- Renewable energy stations

BUSINESS INTELLIGENCE SOLUTIONS for CIs

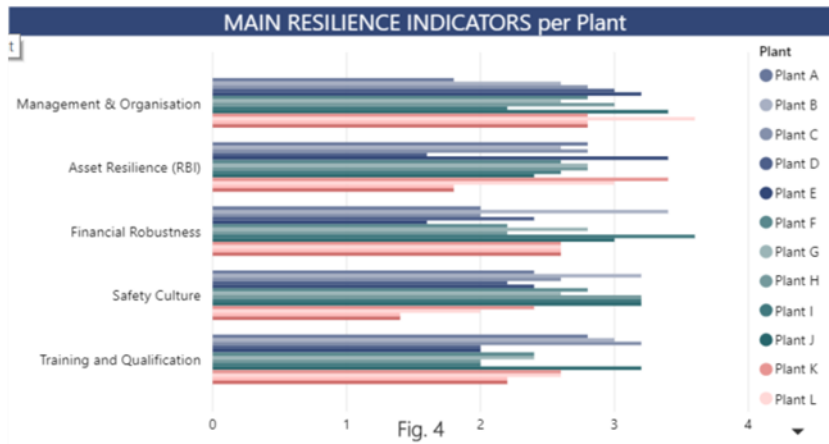# Example of resilience analysis for electricity public utility



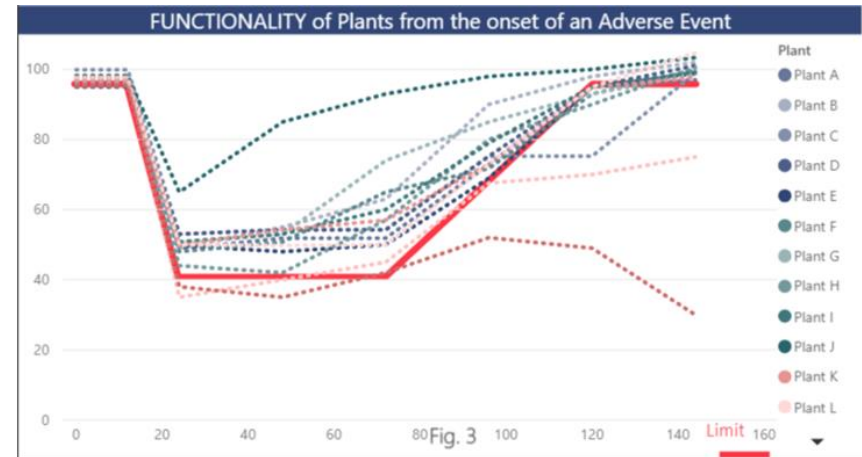Fig 1. Main resilience Indicators



Fig 2. Functionality restoration prediction
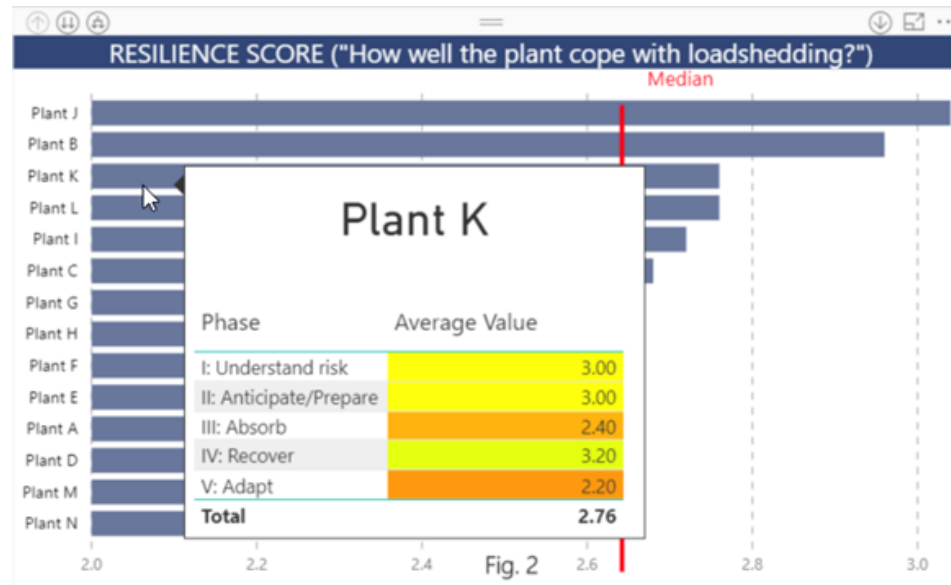
# Example of resilience analysis for electricity public utility



Fig 1. Resilience Score Calculation