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The Proactive Insights Engine (PI) :
Process Mining meets Machine Learning and Artificial Intelligence

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Process discovery, comparison, software, poles

This document explores the **mechanisms** of Process Mining and the **advances** brought about by artificial intelligence through the Proactive Insights Engine.

Process mining is a technique for improving business processes, i.e. data processing, based on **past** and **current** company data: movements, recurrences, frequencies, etc. Process mining enables us to anticipate the future, the **company's future behavior** and activities, based on past events. This process is generally a two-stage process:

- **Process discovery**: data is collected and studied to **highlight weaknesses** and possible future errors to be avoided.
- **Process conclusion**: the results obtained during process discovery are processed in order to improve the process, i.e. optimize processing times, or increase efficiency.

The problem in all this is that the person in charge of this task needs to be able to examine and process each piece of data in depth, and needs to know roughly where the data flaw (e.g. in terms of efficiency, or wasted time) lies that he or she is looking for.

This is how the Proactive Insight Engine came into being: to **support** the person doing the data processing - and above all, the process discovery - although the machine also optimizes the results obtained. It enables data to be processed automatically to obtain intelligent information, find flaws and their causes. All the data analysis work described above is carried out automatically by Proactive Insight Engine, thanks to the 4 main "poles" that make up this intelligent machine:

"PI Conformance: This is **the comparison part** of ProActive Insight. It compares past and current data with estimated future data, to identify and prioritize problems, so that the most urgent ones can be dealt with more quickly. It is even possible to obtain additional information on the problems the machine has highlighted, so that they can be dealt with more precision.

"PI Machine Learning: The machine works in parallel with an application called Celonis (which is a data processing software that offers software as a service to improve business processes). It transfers data relating to the company's past events, as well as the results obtained during the process discovery phase. This data is then used by algorithms to anticipate future events.

"PI Social": This Proactive Insight component enables you to get an idea of the organization within a team, again with the help of data. It is possible, for example, to identify whether the workload is equitable within the same team, depending on the quantity, frequency or quality of the associated data.

"PI Companion: This part also interacts with the Celonis application. It is the "consulting" part of Proactive Insight, which identifies and recommends the company in real time. It doesn't wait for data to be collected at the end of a given event, but works at the pace of the data.

Proactive Insight Engine, the artificial intelligence that supports process mining, has been available since 2016 and has helped hundreds of users, including major corporations such as Siemens and Vodafone. PI has received positive feedback, and in particular its power is recognized in process mining.