

Plug&Cut

Check the health of your processes from past data
Easy service for manufacturing SMEs

D2 Online Service for process behavior analysis

- **Automated detection of phases** in plasma cutting operation from energy consumption data
 - useful for understanding **how stable a machine is operating**
- Provides process **outlier and variation analysis** from the manufacturing data.
 - useful for understanding **usual/normal behavior** of a machine

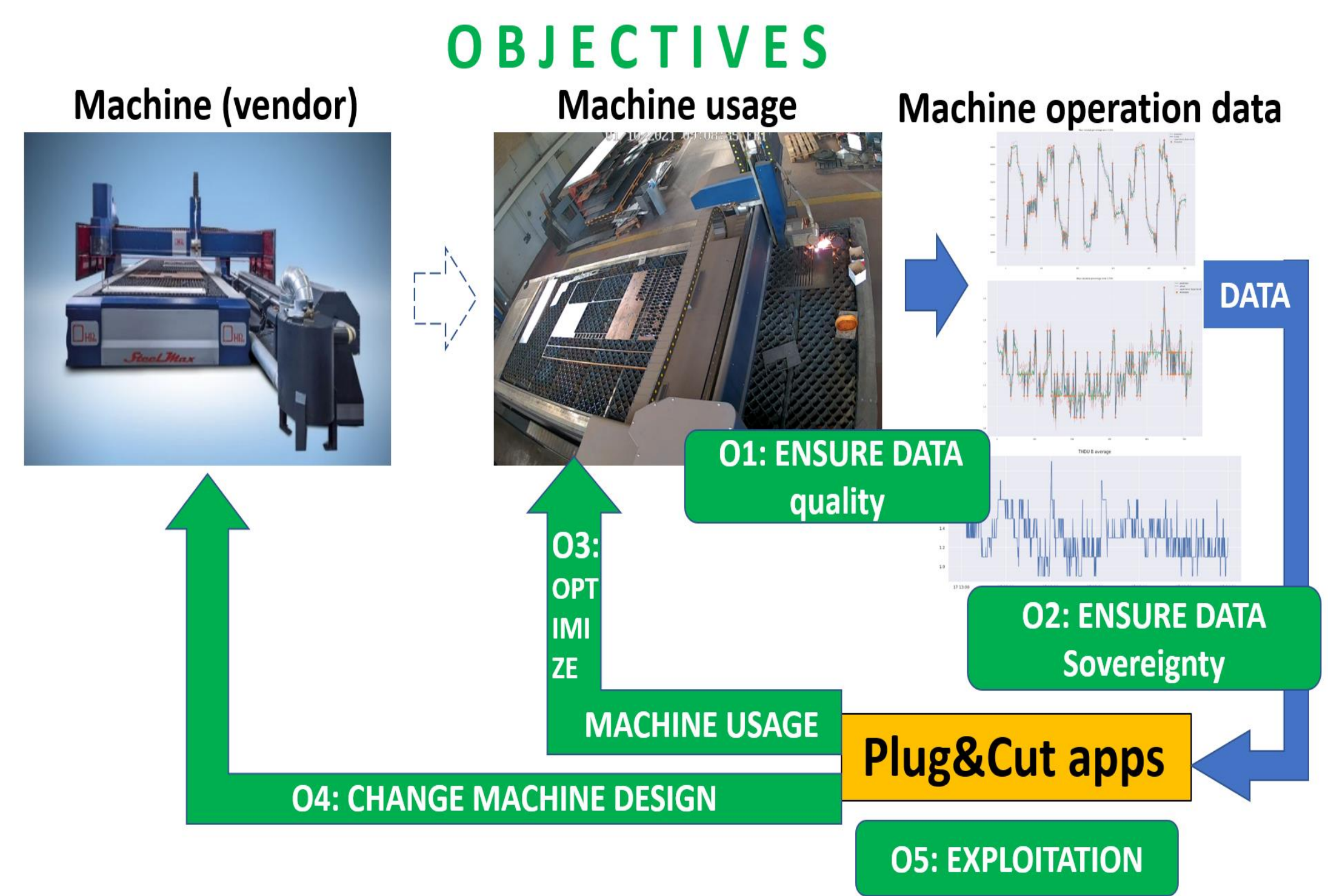
Features

Simple usage: just upload files with past data

Instant outcome: the analysis is ready in a minute

Deep analysis: new methods for multivariate outlier and variation detection incl. their root causes

Guided exploratory analysis: start inspection from the weakest parts of the process



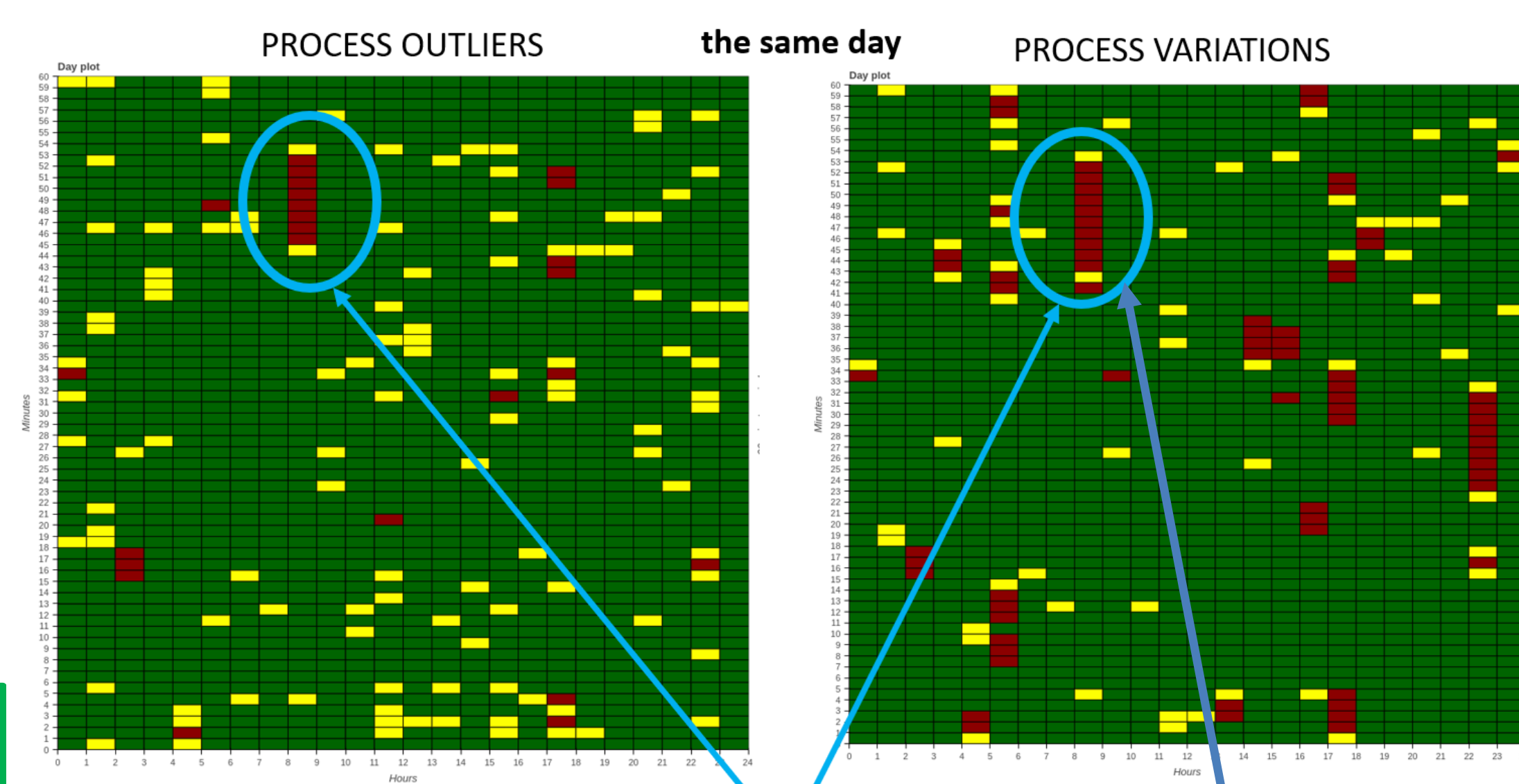
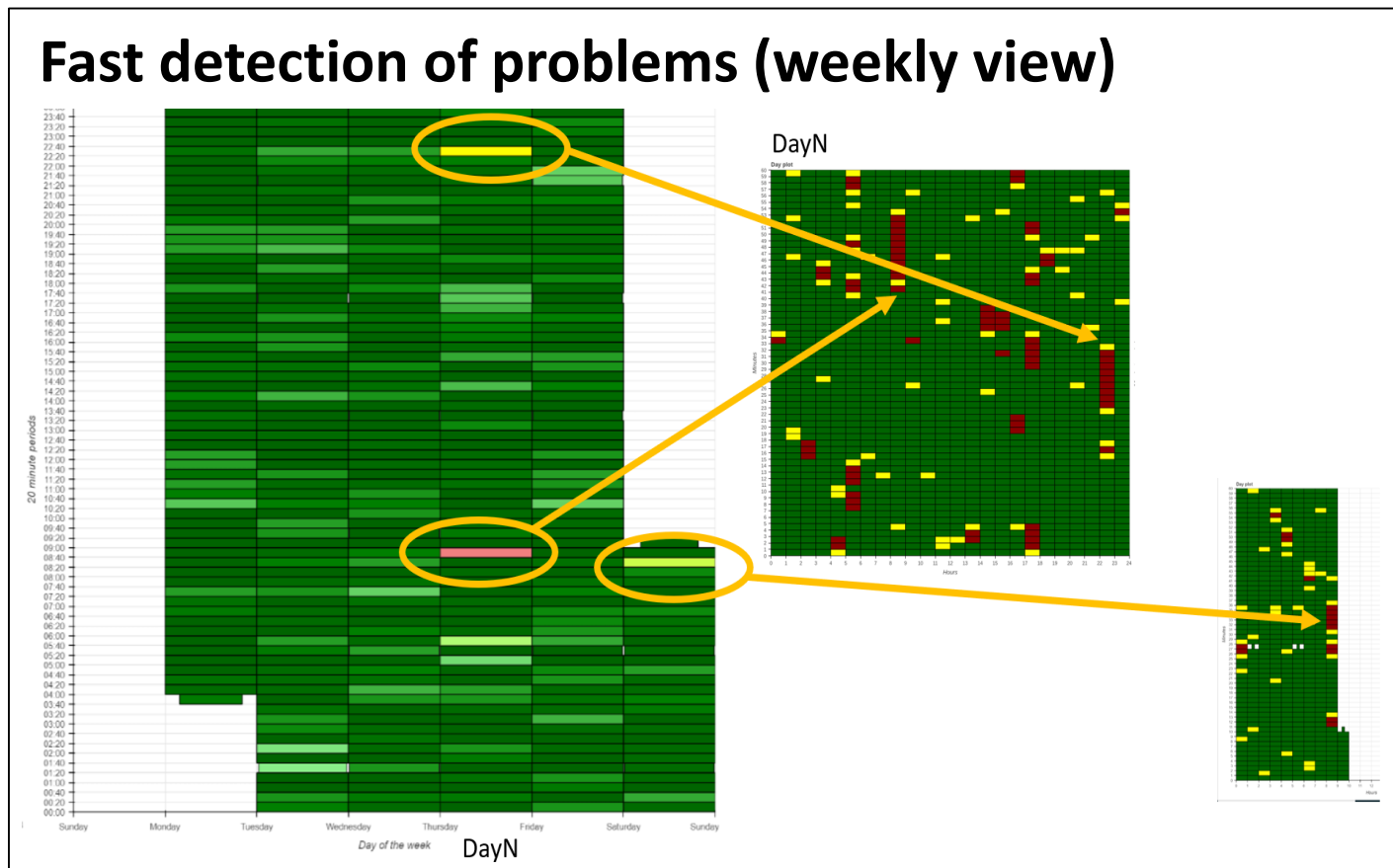
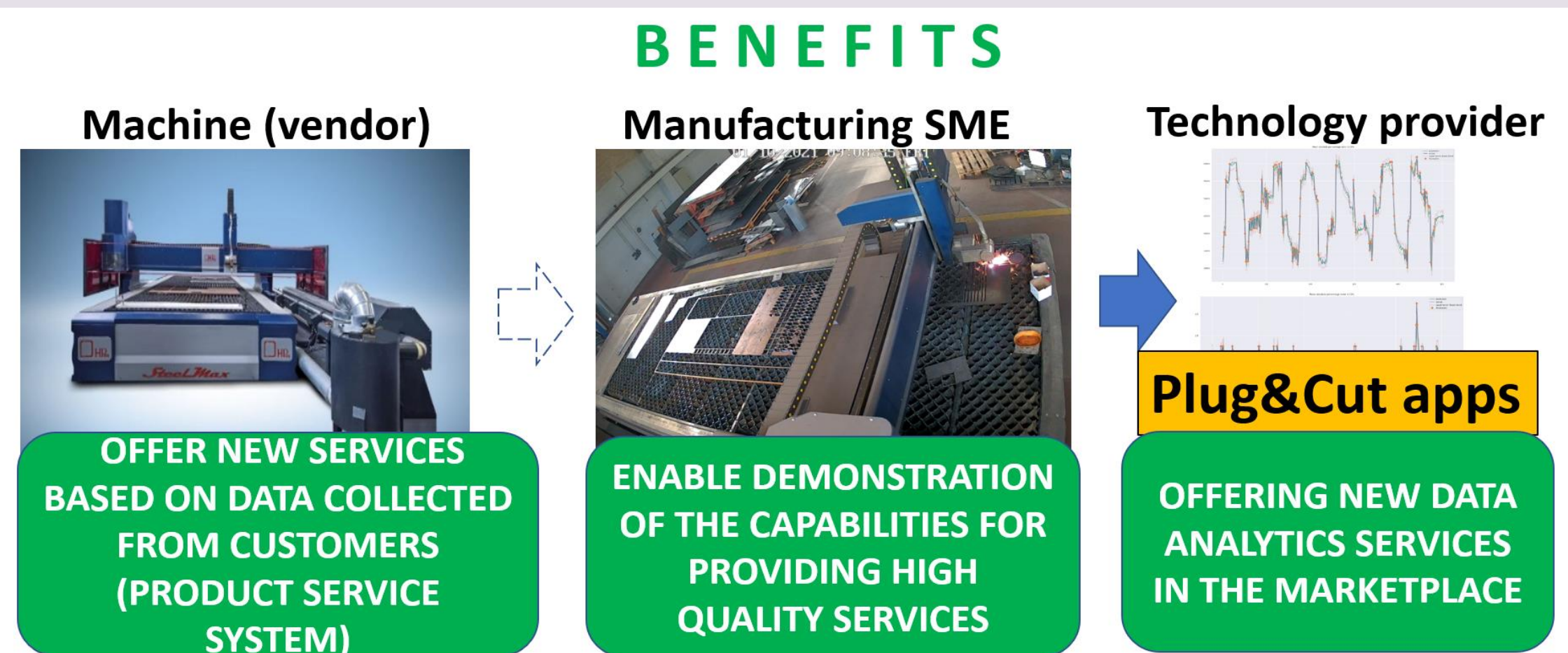
Service validation

Energy consumption data analysis

- Detection of **point variations** improved for 20%
- Detection of **collective variations** improved for 40%

(compared to standard multivariate charts)

PROCESS BEHAVIOUR ANALYSIS



Problems (outliers and variations) in the same period

Root cause

Time	Ec1m	F2	P1	Ec1	I3	COS3	V3
08:41	X	X					
08:42			X				
08:43			X	X			
08:44	Parameters causing the problems in this period				X	X	
08:45					X	X	
08:46					X	X	
08:47					X	X	
08:48					X	X	
08:49					X	X	X
08:50					X	X	
08:51					X	X	
08:52					X	X	
08:53					X	X	

Acknowledgment

This work has been performed in the context of the Plug&Cut project, an open call #1 winner of the H2020 MARKET4.0 project (market40.eu), with participation of

- Nissatech, www.nissatech.com
- EMDIP, www.emdip.com
- Netico, www.netico-group.com

The H2020 MARKET4.0 project develops an open multi-sided digital platform for enabling production equipment and service providers to connect and work together with manufacturing companies. The MARKET4.0 platform enables new business, based on value-adding interactions among the production equipment and service providers and their customers while at the same time provides an open and participative infrastructure for these interaction