



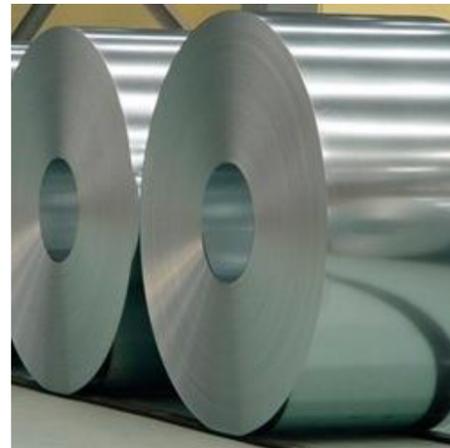
Industry 4.0



Andoitz Aranburu
Head of Innovation Department AUT división
(2017-11-16)



FAGOR ARRASATE designs, manufactures and supplies equipment for sheet metal part production



Automotive

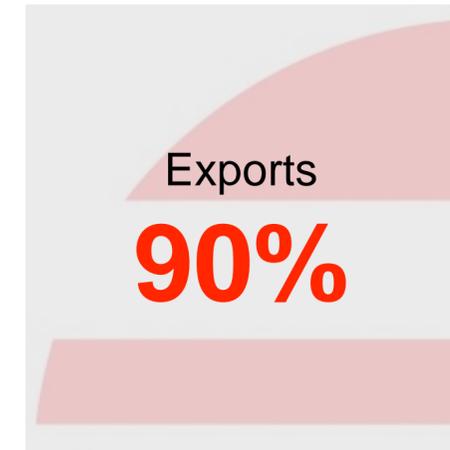
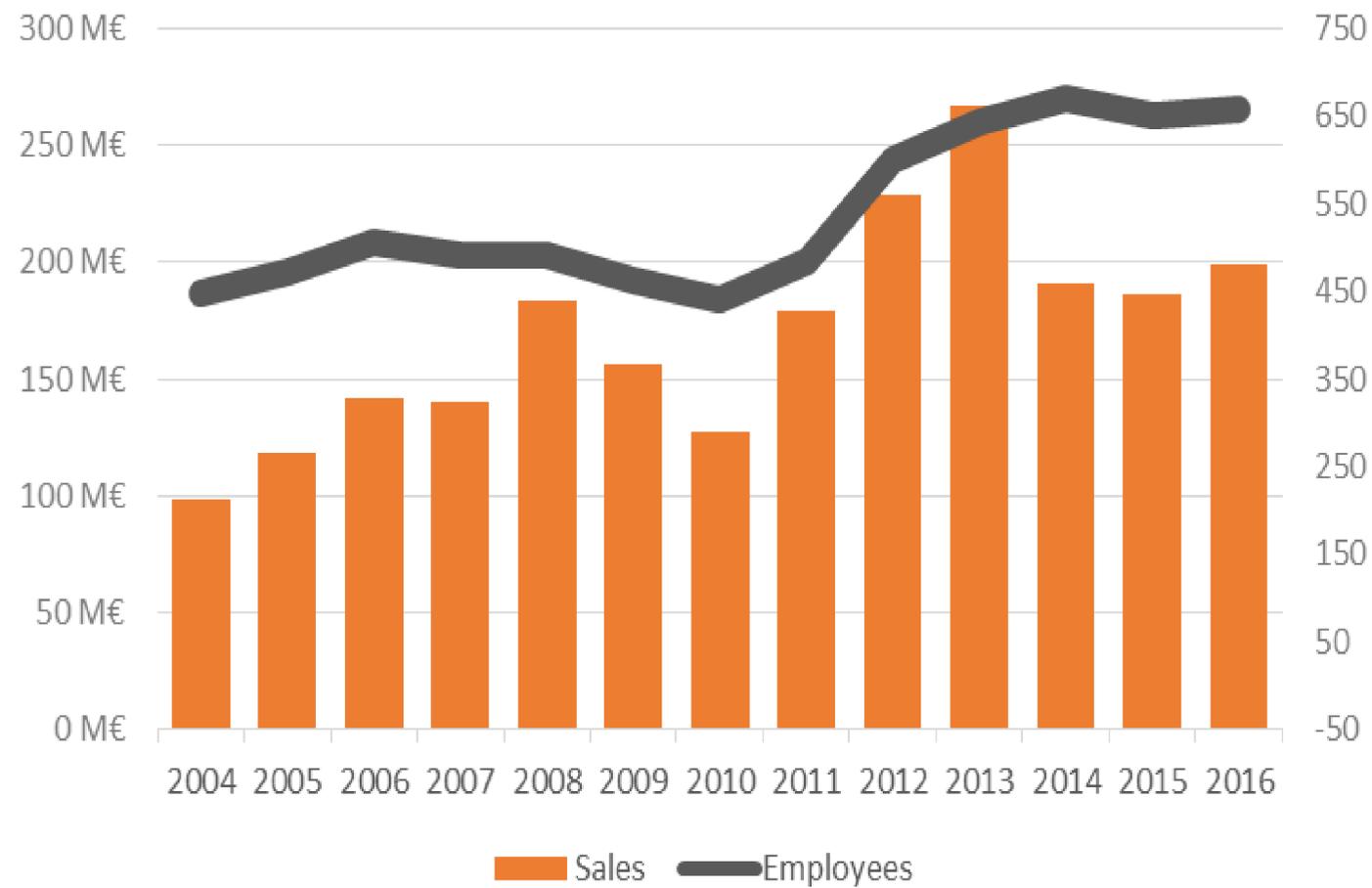
Steel & Aluminium

Home Appliances



Member of Mondragon Corporation

Created in
1957







Industry 4.0 Vision



TARGET:

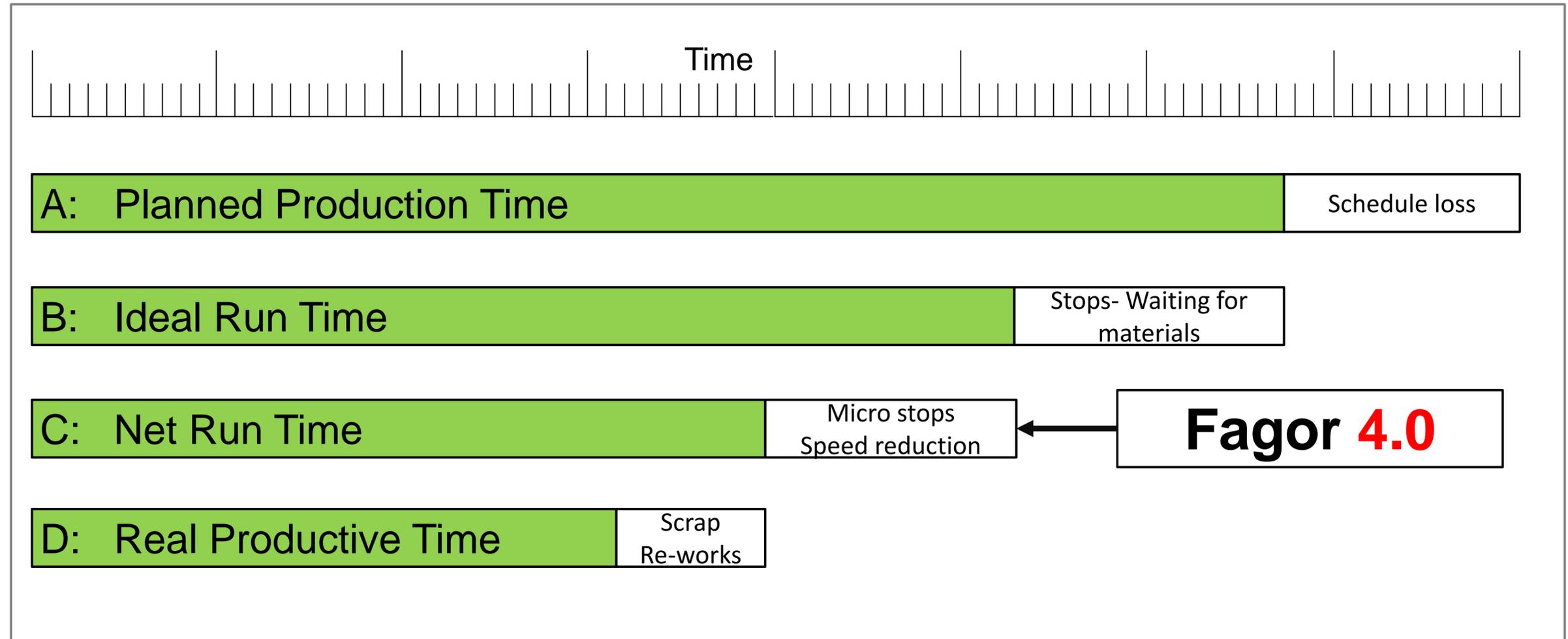
OEE (Overall Equipment Efficiency) IMPROVEMENT

$OEE = Availability \times Performance \times Quality$

% Availability = (B/A)

% Performance = (C/B)

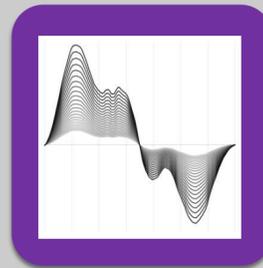
% Quality = (D/C)





Smart Infrastructure. INDUSTRY 4.0

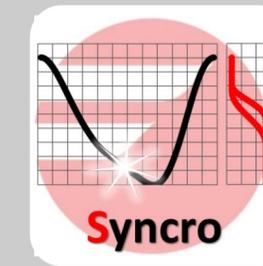
Smart Services



Status monitor



Maintenance Report



Production improvement

Smart infrastructure

Cloud infrastructure

Big Data infrastructure

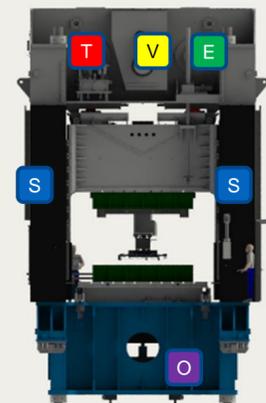


Analysis



FAGOR 
FAGOR ARRASATE

Smart Machine



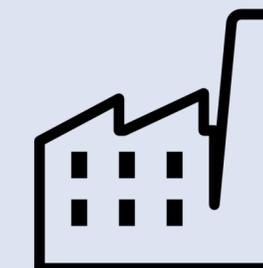
Data Acquisition system



Analysis

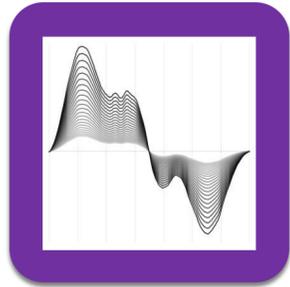
- I. General data
- II. Load Monitor:
- III. Temperatures:
- III. Oil quality:
- IV. Power consumption
- V. Cushion
- VI. Servo drive

Customer





Smart Services



Status monitor

Loads	Oil	Temperature
		

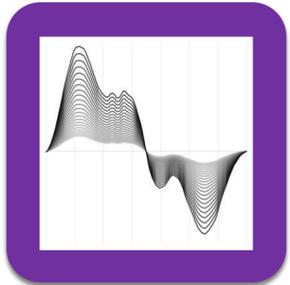
The machine shows the following status:

-  Green: The parameter is Ok. No risk.
-  Yellow: To be checked. Possible to be in this situation temporally, but try to turn into green.
-  Red: Machine stop to turn into Green situation





Smart Services



Status monitor

The screenshot displays the FAGOR FALink-MAP software interface, which is used for monitoring industrial machinery. The interface is divided into several sections:

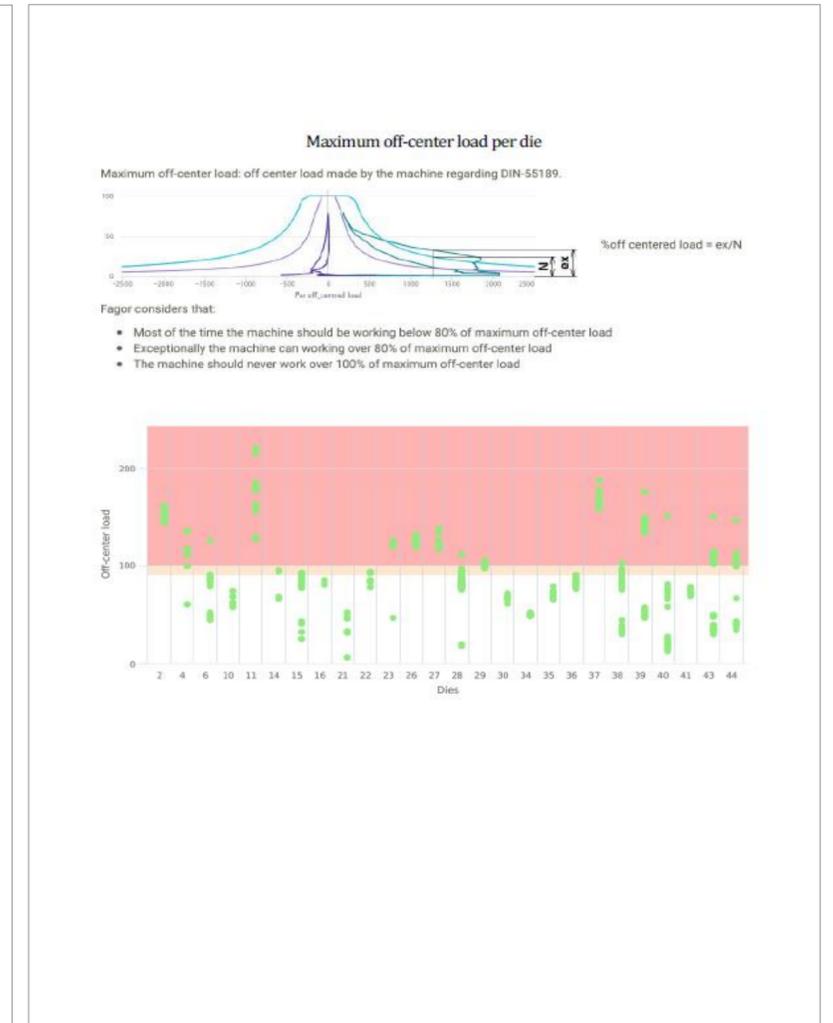
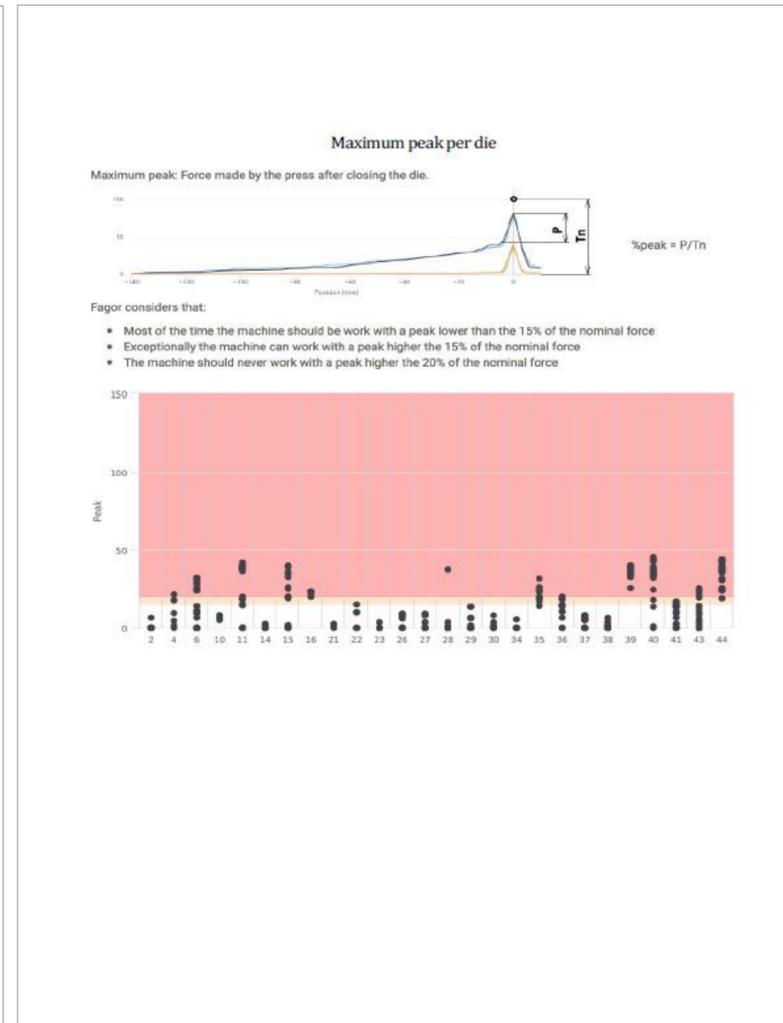
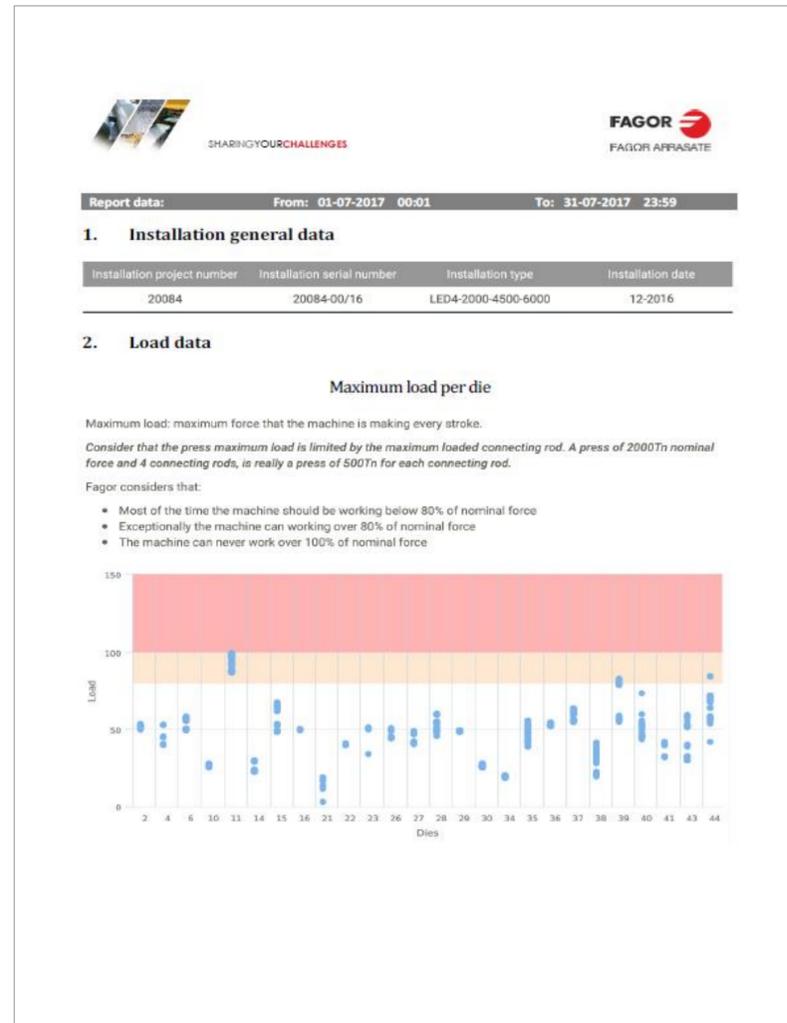
- Navigation Panel (Left):** Contains a sidebar with options like 'Control Center', 'Plant Map', and 'Plant 1'. Under 'Machines', three machines are listed: Machine 1 (green), Machine 2 (red), and Machine 3 (yellow).
- Header:** Shows the 'FALink-MAP' logo, a settings gear, and a user profile 'Hello David' with a US flag.
- GENERAL INFO:** A red header bar.
- ESFUERZOS (Efforts):** A chart showing 'Efforts' (Y-axis, 0-500) versus 'Position (mm)' (X-axis, -20 to 20). It features four data series for Rod 1 (blue), Rod 2 (black), Rod 3 (green), and Rod 4 (orange). All series show a sharp peak at 0 mm position.
- ACEITE (Oil):** A red header bar.
- TEMPERATURA (Temperature):** A red header bar.
- Off-centred load per stroke:** A chart showing 'Effort' (Y-axis, 0-2100) versus 'Par off_centred load' (X-axis, -1500 to 1500). It displays multiple curves in blue, black, green, and orange, representing different load profiles.
- Right Panel:** A vertical list of data points or settings, including fields for 'de formatos de guillet', 'de prensas.', 'nciones prensa.', 'seguridad (XPS-OT etc...)', 'ol de cojín.', 'TAL-KALUGA', and '6, Kaluga (Russia)'. There are also several empty input fields.



Smart Services



Maintenance Report

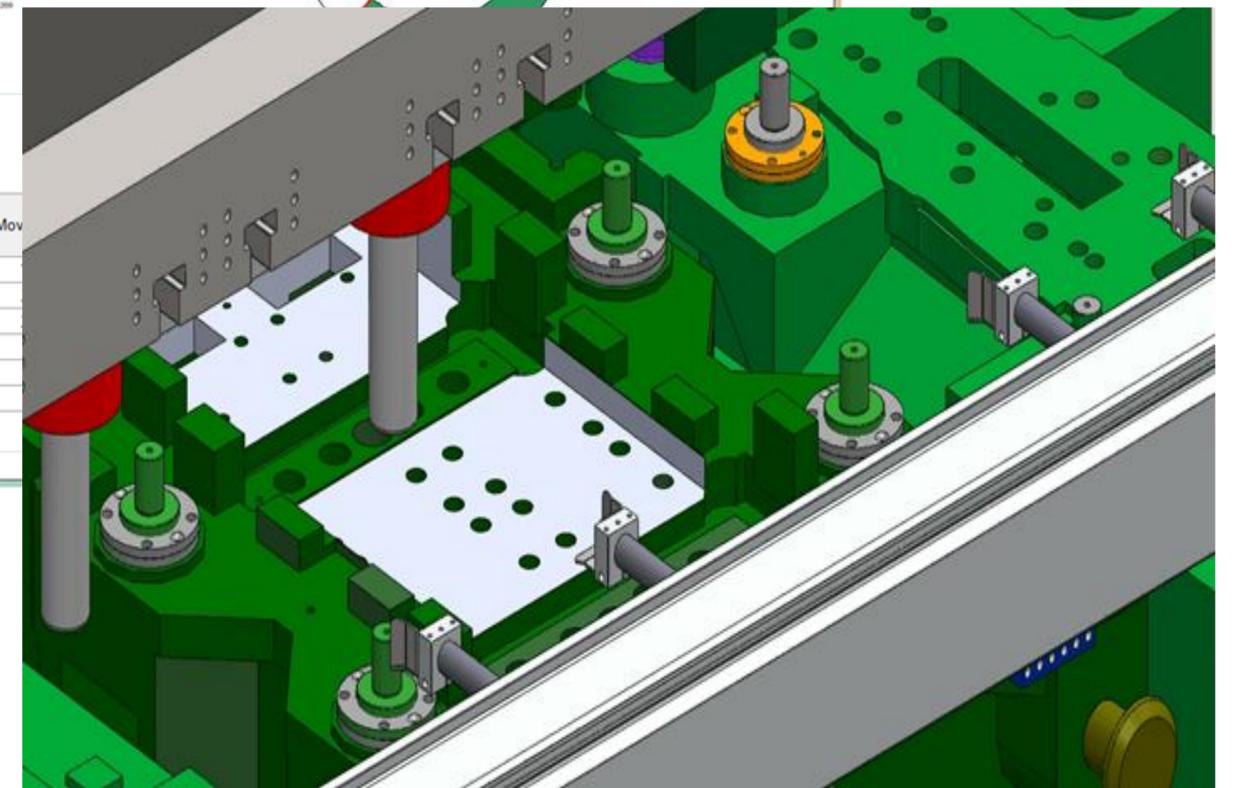
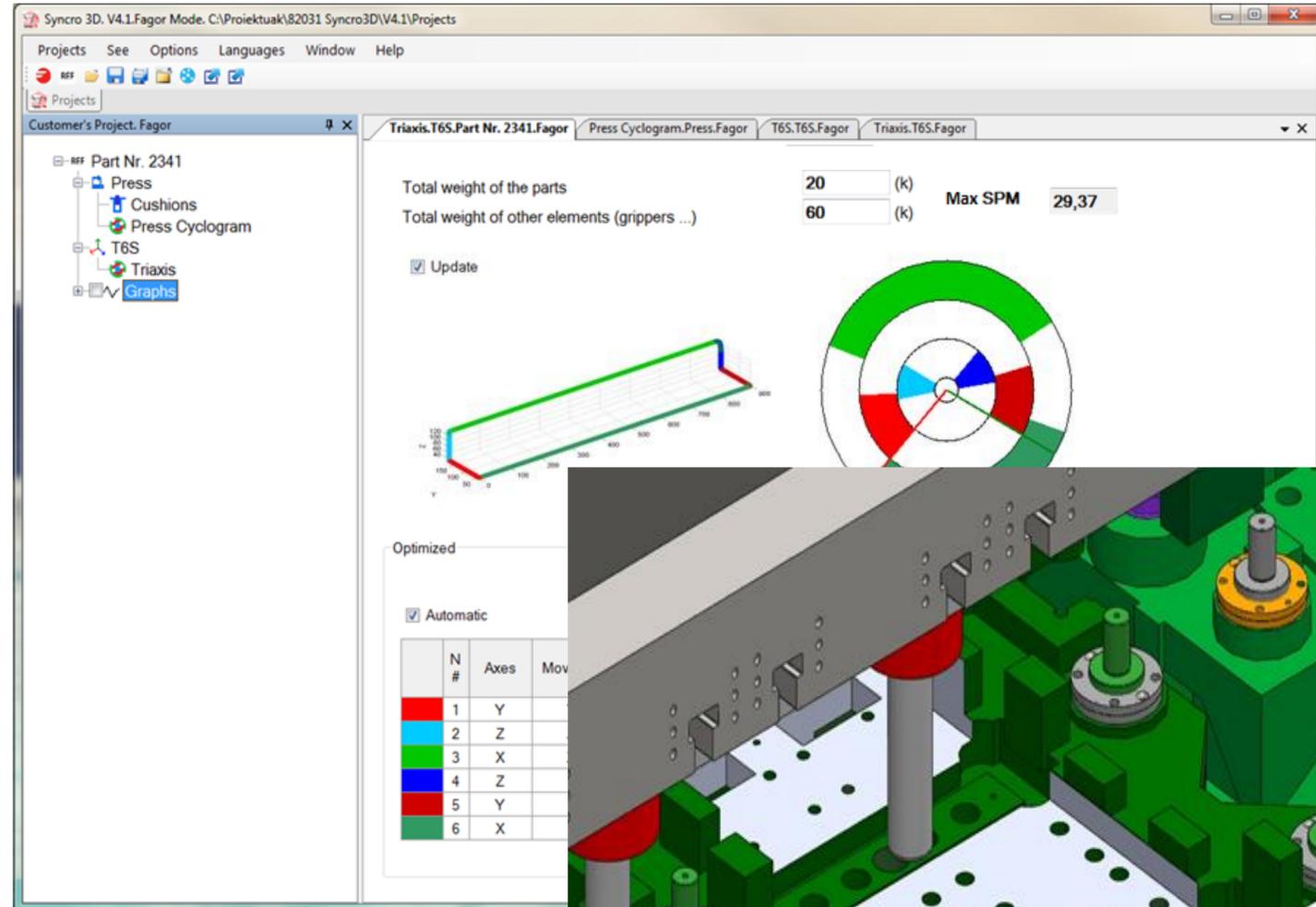
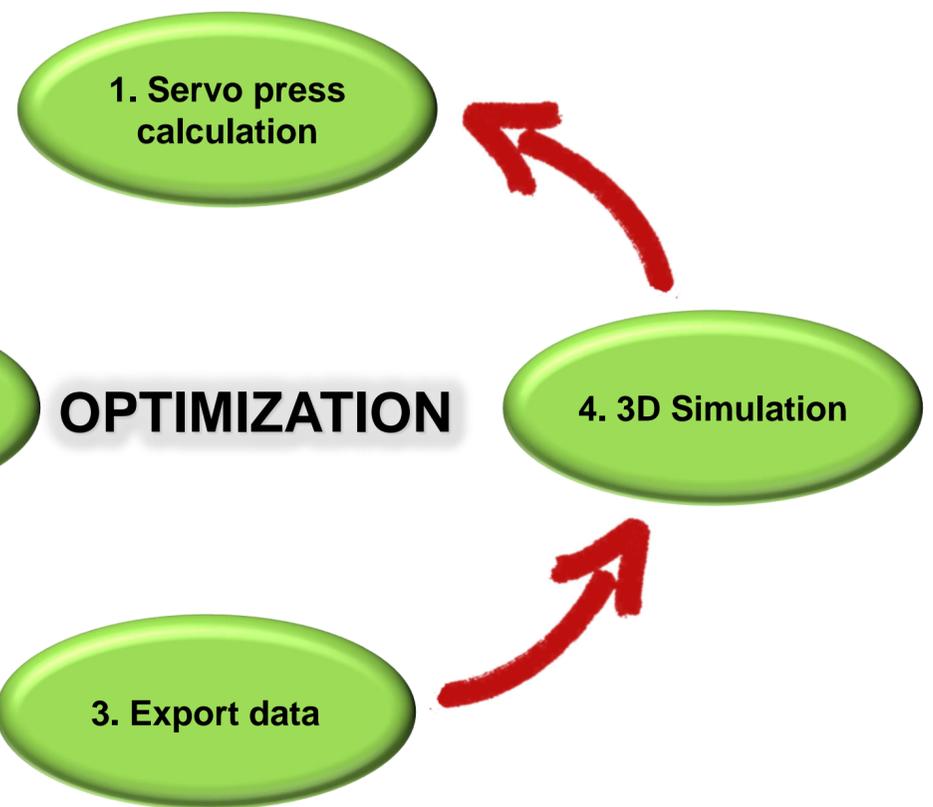




Smart Services



Production improvement





SHARING YOUR **CHALLENGES**

