

# Release and Start-up of the Stellantis DS Mirrors Production Line

**Katia Mayela Lozano Ortiz**

**María Fernanda Vázquez Fernández**

**Alondra Valeria Salazar Orozco**

Industrial and Systems Engineering Students

Universidad de Monterrey Nuevo León, México

[katia.lozano@udem.edu](mailto:katia.lozano@udem.edu), [mariaf.vazquez@udem.edu](mailto:mariaf.vazquez@udem.edu), [alondra.salazar@udem.edu](mailto:alondra.salazar@udem.edu)

**Edgar Marco Aurelio Granda Gutierrez**

Tutor

Universidad de Monterrey

Nuevo León, México [edgar.granda@udem.edu](mailto:edgar.granda@udem.edu)

## Abstract

This project is focused on the problematic situation that exists in the plant of Ficosa North America, S.A. de C.V. in Salinas Victoria, Nuevo León, specifically in the DS Mirrors production line of Ficosa's client Stellantis, which was solved using the DMAIC methodology, part of the Six Sigma philosophy, with the objective of achieving a 80% of OEE at the release of the DS Stellantis Mirrors production line by increasing its three main indicators, these being Efficiency, Quality and Availability. Throughout the document, all the phases of the methodology are shown, which are Define, Measure, Analyze, Improve and Control, along with the tools that were used in each stage, as well as the statistical analysis accomplished, the improvement proposals and the implementation of these within the organization to achieve the established objective.

The existing production line now in the Ficosa's Salinas Victoria plant was a transferred project from the plant of the same company in Cookeville, Tennessee, this due to the global situation of the pandemic and the fact that it was established a legislation where any American citizen who is unemployed can receive financial support in between 800-1200 dlls per month, equivalent to the salary of a base operator in Ficosa Cookeville. This generated that the resignation rate increased up to 41%, directly affecting the breach of the stipulated rate, which is referred to as the pieces produced per hour, with that in mind the organization saw the need to pay extra work hours to satisfy their customers needs, causing that the availability, efficiency and quality of the line constantly changes, affecting the OEE indicator therefore decreasing to an average of 62.7%.

## Keywords

OEE, efficiency, quality, availability, continuous improvement

## Biographies

**Katia Mayela Lozano Ortiz** is currently an Industrial and Systems Engineering student at Universidad de Monterrey and an intern at GM Financial in the Wholesale and business credit area, where she does the management and credit files of the dealers of Mexico and Peru. She was part of the board of directors of the student society of the American Society for Quality (ASQ), holding the position of vice president from June 2019 to June 2020. She had previous experience in different consulting projects for continuous improvement in the automotive company Mahle Sistemas de Filtración, and in Frisa specifically in the Open Forge plant, both projects in 2020. She is currently certified as an Internal Auditor for ISO 9001:2015 part of the consulting team for the DS Chrysler mirror production line startup project in the organization of Ficosa North America at the Salinas Victoria plant.

**María Fernanda Vázquez Fernández** is currently at her last semester for Industrial and Systems Engineering major. She is currently a program and project management intern at Metalsa. Some of the main activities that she does within the organization are gate audits, plant readiness, budget control and practice development improvements for Mexico and South America projects. She currently is certified for ISO 9001:2015 Auditor. Some of her previous experience are consulting projects for Mahle Sistemas de Filtración and Frisa Forja Abierta. The various topics projects where information management and control systems for customer order tracking and improvement of usage for critical machines. She had a year abroad in Germany in 2016 as part of the Youth for

Understanding Organization. She has been part of different events regarding leadership within Universidad de Monterrey such as “Retarte es nuestro reto”, UDEMUN and “Empezar a Ser”.

**Alondra Valeria Salazar Orozco** is currently an Industrial and Systems Engineering student at Universidad de Monterrey and an intern at Ternium in the strategic energy planning area. She was responsible for logistics at the board of directors in the industrial and systems career in 2018. She was part of the board of directors of the student society of Association for Supply Chain Management (APICS), holding the position of Vice president in 2019. She graduated from the second generation of Drivers of Change in 2021, a programme with a focus on the UN Sustainable Development Goals. She had experience as a consultant in the logistics department at Mahle Sistemas de Filtración and in the continuous improvement department in Frisa in 2020. She had international experience at Yonsei University in South Korea in the engineering department during 2021

**Edgar Marco Aurelio Granda Gutierrez** is the academic director of the graduate programs in engineering at the University of Monterrey (UDEM), in addition to being a professor in the engineering department at the same university, he has also worked at Monterrey Institute of Technology and Higher Studies (ITESM), Mexican University of Business and Innovation and Autonomous University of Nuevo Leon (UANL). He has more than 18 years of professional experience in national and international companies of recognized prestige in the areas of logistics, supply chain, operations and process improvement. As a consultant, he has developed more than 35 projects focused on the design, redesign and optimization of processes in the supply chain. He is the author of scientific articles published in prestigious journals, on the topics of optimization of the supply chain, design, redesign and optimization of processes and facilities. His lines of research are: Operations Research, Data Analytics and Artificial Intelligence applied to the supply chain.