

***CASE***

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**TECHNOLOGICAL  
UPGRADE OF  
CRANES FOR A  
STEEL INDUSTRY**

***Steel Sector***

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# **MAIN BENEFITS OBTAINED**

Improvement on the **technological life cycle** of the cranes, keeping the existing functionalities, but with updated hardware.

**Reduction of maintenance downtime**, with diagnostic information being provided by the HMIs.

## **CHALLENGE IN THE STEEL INDUSTRY**

Service was provided to one industry of world's top steel-producing company, located in Brazil.

## **WHEN**

2021

## **CLIENT AND CONTEXT**



## **SEVERAL PROJECT PHASES**

This was the 3<sup>rd</sup> phase of a project started in 2017. Total of 9 cranes upgraded until this moment.

All project phases executed by Ledefi and one partner company (electrical installation).

# NEEDS AND CHALLENGES



## TECHNOLOGICAL UPGRADE REQUIRED

The upgrade of the automation systems was necessary, due to obsolescence and lack of spare parts of the existing hardware.

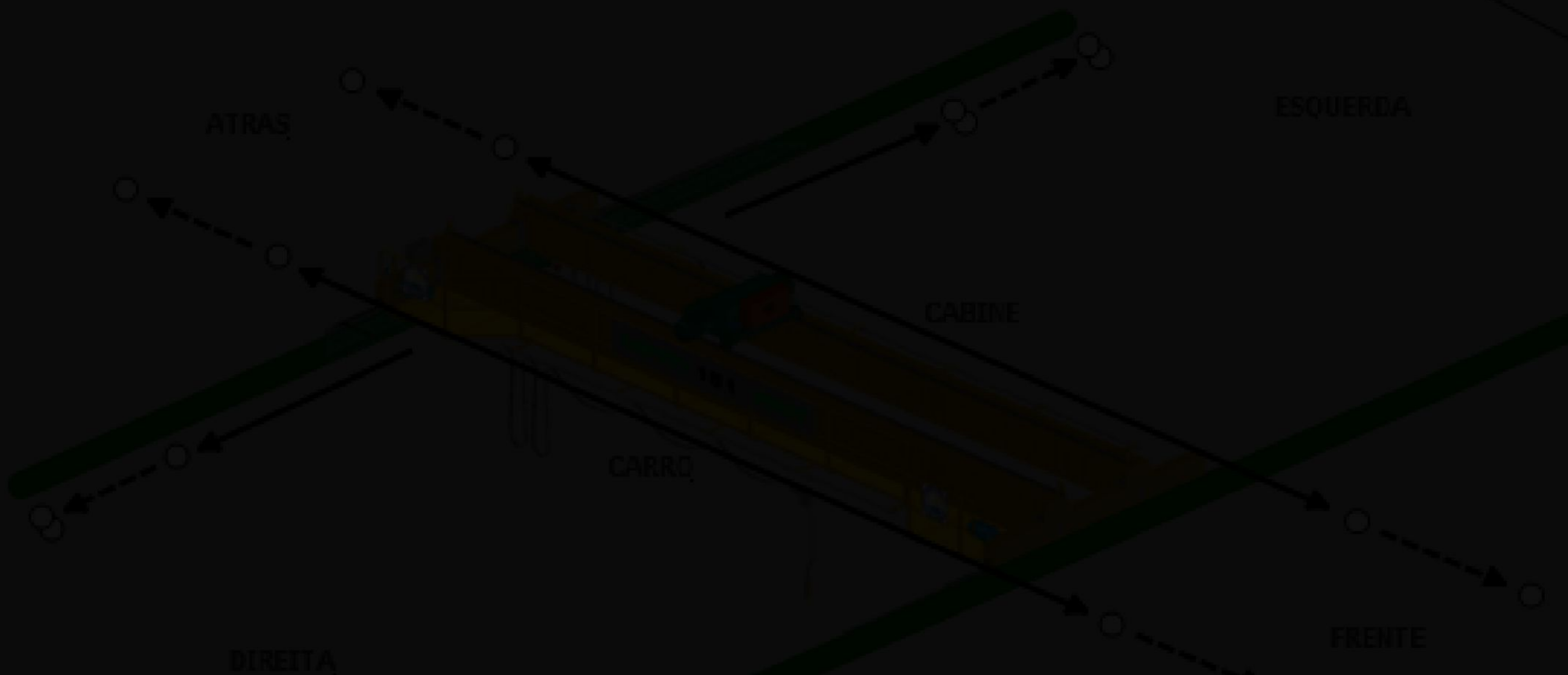
The installation of an HMI (Human-Machine Interface) was also necessary, to support diagnostics and maintenance.

## SEVERAL CHALLENGES

PLC code migration to a new brand (automated conversion not possible)

Commissioning of cranes critical for the industry logistics, respecting the scheduled downtime.

Working at height



# SOLUTIONS DELIVERED

- ***Manual code migration from GE to new Siemens PLCs***
- ***PLC simulations & platform tests executed prior to commissioning***
- ***Development of screens for new Siemens HMIs***
- ***Non-stop commissioning for each crane, with Ledefi team working in shifts***
- ***Training of maintenance team on Siemens programming***

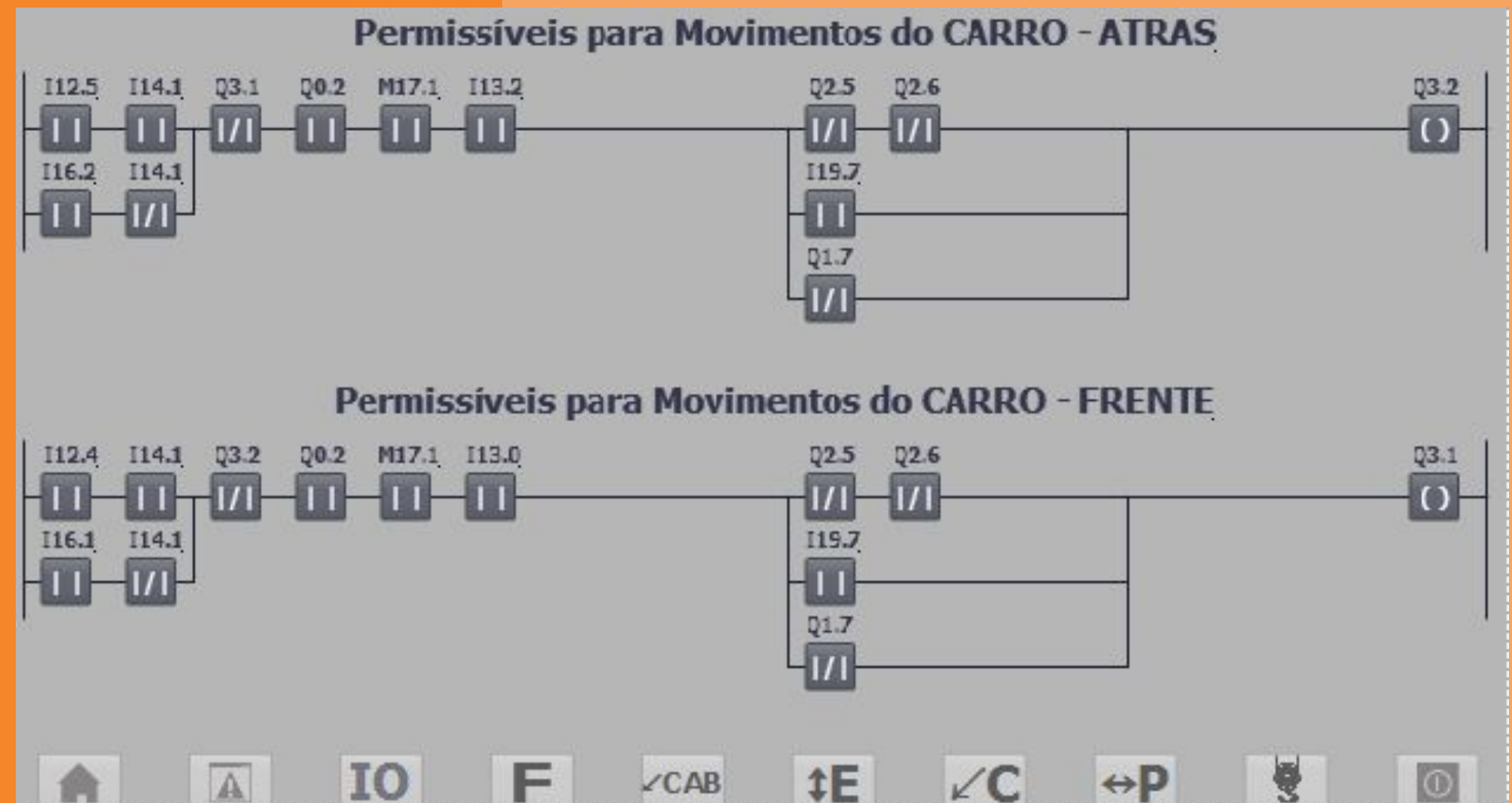




- Force**  **M41.1 - Force Cabo Frouxo New**
- Force**  **M41.0 - Sobrecarga New**
- Force**  **M40.3 - Falha no sistema de pesagem EP**
- Force**  **M16.0 - Bool que indica falha no inversor da Elevação**
- Force**  **M16.3 - Bool que indica falha no inversor do Carro**
- Force**  **M17.2 - Bool que indica falha no inversor da Ponte**
- Force**  **Q0.3 - Contator de liberaç o dos freios dos motores do carro**

Example of HMI screen that allows the forcing of some variables.

Example of HMI screen that displays the conditions for crane movement.







# DELIVERABLES

**- SIEMENS PLCs AND HMIs PROGRAMS, IMPLEMENTED AND COMMISSIONED.**

**- MAINTENANCE TEAMS TRAINED IN SIEMENS PROGRAMMING.**

# TECHNOLOGIES & BRANDS

- **Code migration from GE controllers to Siemens ET200SP.**
- **Programming of HMIs Siemens KTP700.**

Maintenance teams were pleased with the code migration, keeping the same naming conventions and program structure.

Customer satisfaction can be determined as this was the 3<sup>rd</sup> phase of a project, and previous phases had also been executed by Ledefi.

# **CUSTOMER SATISFACTION**



# WHERE ELSE CAN IT BE IMPLEMENTED?



Any industries and processes that need to upgrade their automation systems and equipments, changing or not the current brands, keeping the existing functionalities and eventually including new ones.

## WHY SHOULD I CHOOSE LEDEFI?

Besides our knowledge and experience on automation projects, we count more than 30 challenges delivered to the industries, all of them with customization and commitment.





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Please contact us to receive other cases that may be applied to your challenge.

# WHAT IS YOUR CHALLENGE?

