



## ***“PLATFORM ONE” 4.0 Industry di SAEL.***

the Drive-Automation architecture exclusively designed for the Paper Mill has been applied at Papiro Sarda. Ready to be expanded controlling the entire Plant

# SAELsrl. Papiro Sarda papermill

by: **Paolo Andrighetti SAEL**

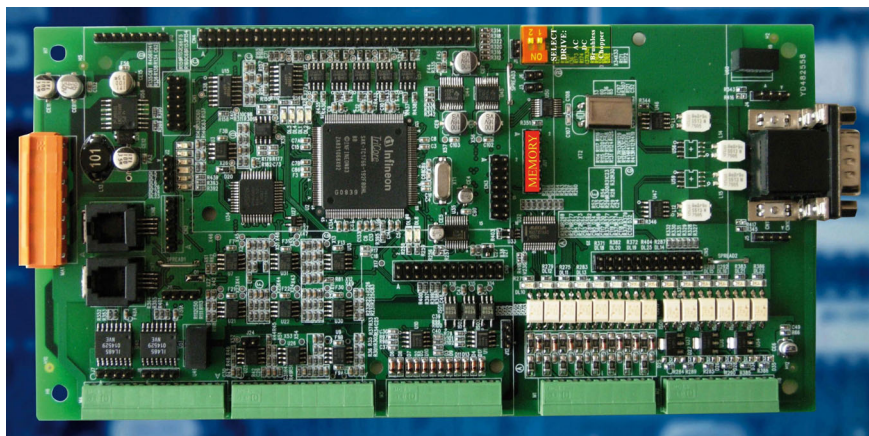
Another “Platform ONE” application of SAEL. The innovative Drive-Automation system supplied to Papiro Sarda in Cagliari. A high-performing and cost-effective solution. Papiro Sarda, aware of its investments after technical deep evaluations, always look to better production and products quality: a growth happened thanks to the technical upgrades offered by SAEL, too.

### **PAPER MILL BACKGROUND:**

Founded by Giulio Barsanti, his wife Mariella Guidi and Sergio Lapi, Papiro

Sarda Srl was born the 23<sup>rd</sup> of September 1982 from the bankruptcy of Perra Paper Mill. The Sardinian adventure of Giulio and his father Bruno started in 1960 building their first Paper Mill at Santa Giusta. The “Santa Giusta Paper Mill”, where Sergio Lapi became Director few years later. In 1982 Papiro Sarda started the manufacturing of paper for corrugates, using recycled paper coming from the Isle itself. Since the beginning, Giulio and Sergio hardly worked on rebuilding and implementing the existing Paper Mill

for Fluting paper sold to one customer based in the Isle, only. In 1995 they started the first main investments focused on empower and improve the production: the unstoppable trend is still on process, so far. Two of the three Giulio's and Mariella's sons were employed in their family enterprise: Daniela (1992) as finance and Sales manager; Andrea, few years later in 1999, as production and development manager. In 1999, the Fluting/medium and semi-chemical paper produced



The only regulation board, same for all our Drives DC-AC-BRUSHLESS-CHOPPER and REEBORN (the system who saves all the multi-brand DC Drives) by “PLATFORM ONE DRIVES”.

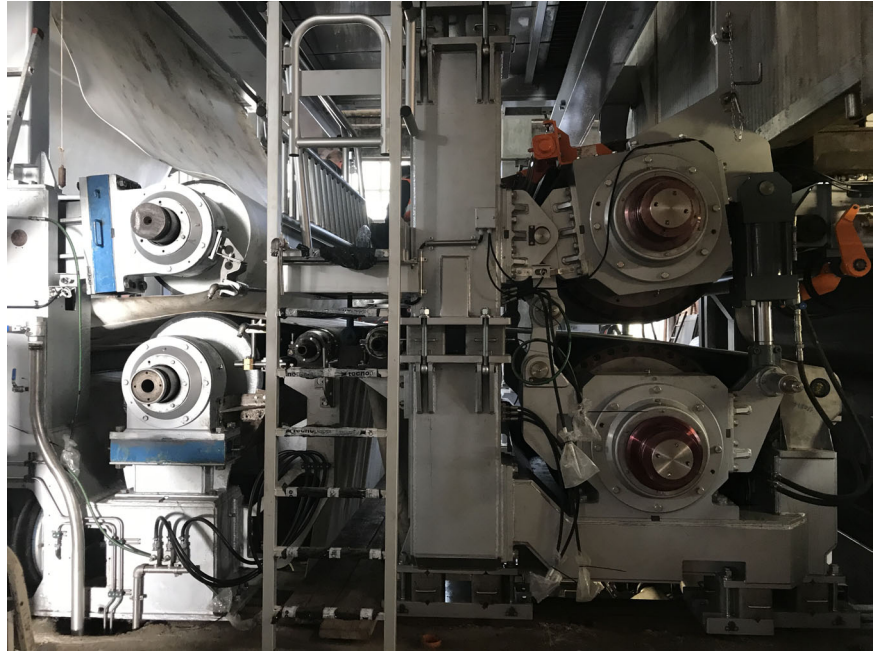




and sold in Italy, was about 6.000 Tons, rising 18.000 Tons in 2016. In 2018 the ownership decided to heavily upgrade the Continuous Machine in the Shoe press Zone (made by TECNOPAPER) changing the single shaft drive with a new sectional AC drive (made by SAEL) based on the Platform “ONE Drive” and DCS: using LONG LIFE inverters and “ONE DCS” who shows any information related to the entire Continuous Machine.

HOW MANY TIMES HAVE YOU ASKED TO YOURSELF, AT LEAST, ONE OF THESE QUESTIONS?

- The machine is out of order. How long will it take to restart? ...
- The drive displays “encoder fault”. Even I change it, it does not restart. What has happened? ...
- I cannot understand where the fault is: Is it on the Drive, or PLC or Management Board? ...
- Every time I have non-conventional fault, I must engage a technician to fix it, spending a lot of money. Why? ...
- It is 4 ‘o clock in the morning and I must replace the Drive, but I’m



Press area rebuilt by the “PLATFOORM ONE”

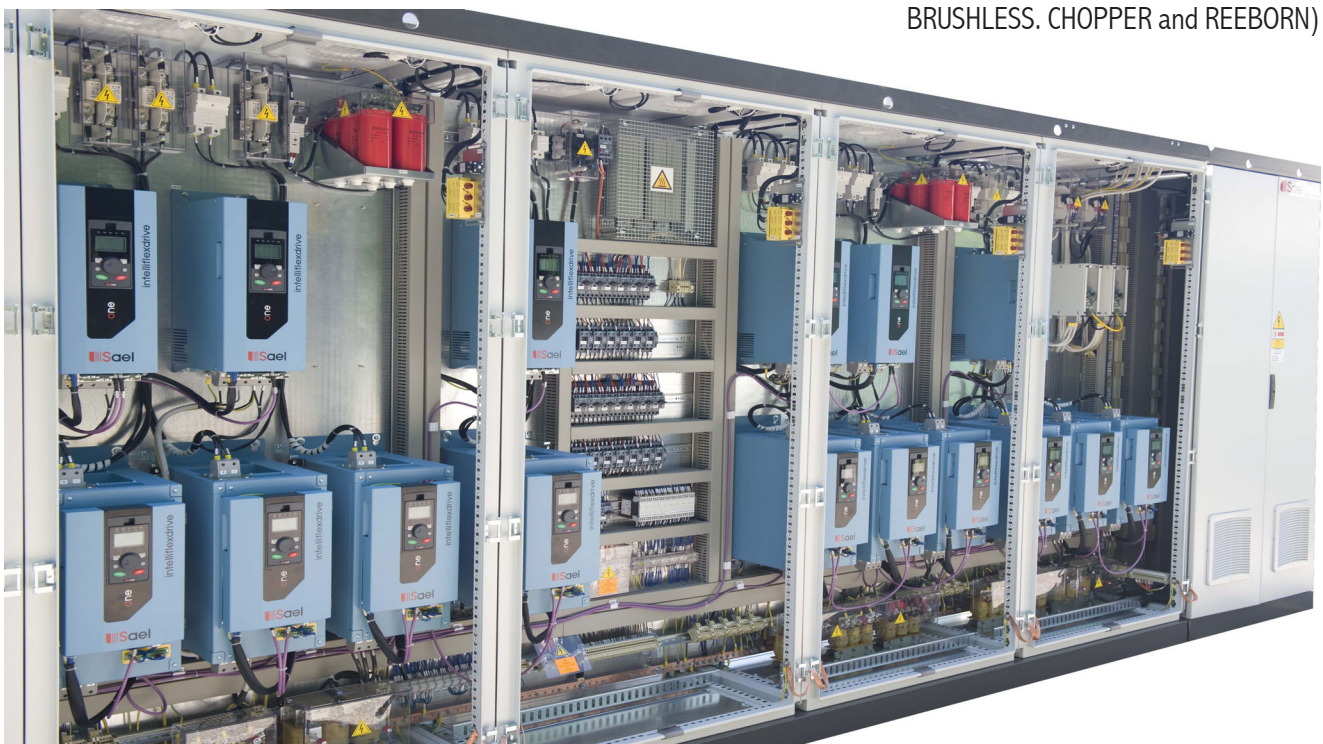
afraid to cause further problems. What can I do? ...

- I try to replace the Main Board by myself. Will I remember to set it? ...
- I replaced the Drive, but it does not work properly. Did I make setting mistakes? ...
- I cannot re-start alone and I need assistance. Shall I get it quickly? ...

• I don’t remember how I solved the same problem occurred last time. How I did it? ...

• My Drive is 6 years old, and I need spare parts. Will it cost a fortune? ...

To clean every question and doubt, in 2011 SAEL launched its Platform “ONE Drive” on the market. A series exclusively made for the Paper Mill Industry. Every Drive (AC, DC, BRUSHLESS, CHOPPER and REEBORN)



Sectional Drive Electrical Cabinet equipped with the exclusive “PLATFORM ONE” Drives series.



**The “TURN-A-KEY” supply involved the inverters, Siemens AC motors, Control desks, Continuous Machine Automation and Press. Electrical Wirings included.**

used in the Continuous Machine, or Winder, or Calander, Wrapping machine, Stock Prep ... up to the System board, uses a unique Main Board called “ONE”. One identical to the Other. The ONE Board is supported by a flexible, powerful, and removable EEPROM where all the Drive parameters are stored on. It is easy to be replaced by non-skilled people because no settings are required in case of any Drive fault (which is totally unusual, today). A simple self-diagnostic system to support the Paper Mill operators on fault searching. The Platform “ONE Drive” uses the LONG-LIFE generation inverters, for an infinite lifetime. The drives are equipped by non-ageing components (eg.: Film Capacitors vs. conventional electrolytics with a duty cycle of 70.000/90.000 hours only) and easy to be repaired. This is counter tendency policy vs. the traditional most popular brands who treat the inverter like a commodity component policy: “in case of fault, please replace the entire drive”. — the model changing few years later only, is a real threat causing confusion and uncertainty to

the end customer, forced to increase its spare parts inventory stock. The remote drive control offered by the “DCS in DRIVE” completes our Platform. Since 2011, a real cost-effective solution with less spare parts required on stock, easy to handle and long-life. What the Paper Mill market wants!

The Papiro Sarda Drive case perfectly fits to the mentioned above content.

The owners Andrea and Daniela Barsanti, together with Fabio Tatti (technical manager) and SAEL, developed the Continuous Machine investment: flexible, ergonomic, and cost effective thanks to the Platform “ONE DRIVE” choice. Another important implementation has been made for the Safety machine all. Since the first Winder upgrade who met the expectations, and thanks to 32 years plus of experience in the Drives and Automation market, the

#### **VW WATER COOLED SERIES with Safety Torque Off**



**The “PLATFORM ONE DRIVE” inverters are equipped by ONE Card (a sole regulation board fits for DC-AC-BRUSHLESS and REEBORN), Film Capacitors to a long-life inverter.**





**Press Zone drive. The motors were included.**

ownership had no doubt to assign to SAEL its MC1 rebuilding too. SAEL ensures the continuity of the models and their spare parts availability against the most popular brands who quickly phases out their series (even 2 times every 10 years) causing cost increases to the customers.

*... n.d.r. Paolo Andrighetti – the SAELs B.U. Paper Sales Manager – “at every order we ask for Paper Mill technicians to be trained on our systems. Since the start up stage, this is the best practice to the Paper Mill independence as much as the strong partnership between all of us. There are no other Companies who shares the knowledge like we do”.*

### THE PROJECT:

The highlights of the job at Papiro Sarda. MC1 drive: 500 kW installed on 10 inverters and motors supplied. To the best cost effective and quick restarting solution in case of fault, the inverter sizes have been reduced to 2 models only, as much as few spare parts, PLC and components on stock. Just 1 “ONE Master Board” is the spare part package for all the inverters, including the MASTERCAN supplied in

2011, because the Hardware is the same. 2 DCS Supervision Stations with sophisticated tools, show any single operation to be done in case of paper brake, 5 Operator Panels (Redundant to the DCS) for the single motor selection and, last but not least, can manage the machine in case the DCS crashes.

The “DCS in Drive” manages the Drives and the Shoe Press section

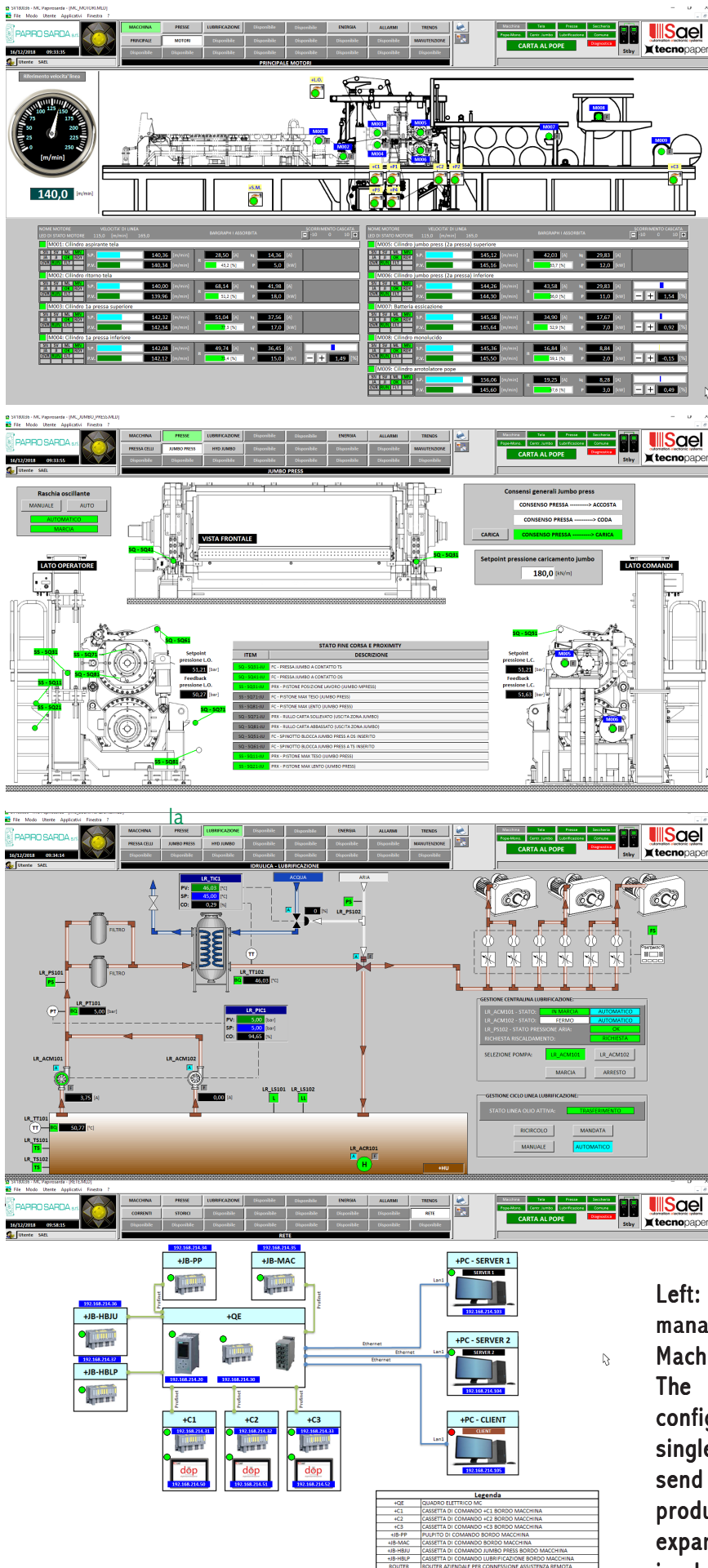
supplied by TECNOPAPER. Thanks to the receipt menu who stores all the presson and automation information/settings, the Machine Operator can reproduce an old production made years later too. The DCS is connected and integrated to the Plant network and the production manager can launch any program from its desk.

The DCS features the “Help Alarm” too. A very helpful tool for editing and storing every Alarm, writing all the comments and notes made to solve the problem. This gives a guidance to the non-skilled operators in case of machine re-start. Clicking the Alarm occurred icon, the operator can get all the information, the electrical diagrams, and every single component placement: even a video by the self-phone. This smart tool – just at its 3<sup>rd</sup> generation – increased the production efficiency. The Operators video-guidance or texts, immediately shows the place to work on for a quick re-start in case of fault.

The system also features the “MAIL” as much as the “SMS alert” function, eventually. At least, every error is showed, stored, and sent out via mail



**Aero picture of the wet zone – PAPIRO SARDA Paper Mill**



or SMS to the Paper Mill techs to a quick fault investigation and machine re-start. Wherever a technician is, connecting via remote PC by the “Lite Time Client” (as a default to our DCS), can co-ordinate the re-starting operations controlling the entire machine. All the operations made by the 2 Paper Mill PC, can be handled by an external station within 2 hours maximum – free of charge -.

From the last years of continued growth, SAEL structured itself sustaining the increase of the jobs, as much as the technology evolution. The research pushed us to be more competitive against the biggest worldwide brands and players using standard PLC combined to our “ONE Drive”. An easy architecture without patented hardware: This means less spare parts issue, flexibility, and friendly use. This is the Value selling proposition of SAEL. Since the beginning, the components and products research were our focus, our aim. Our accurate policy brought us to focus the technology into our drives, transferring into them part of the control and management”.

Left: Some DCS screenshots. The DCS manages the drives, the Continuous Machine Shoe Press Automation. The 2 PC Server and 1 Client REDUNDANT configuration, allows to manage every single part of the machine as much as send and store any receipt from the production desk. The solution is expandable in case of future implementations.