“PLATFORM ONE” BY SAEL, THE SYSTEM THAT COMBINES COST SAVING AND THE GUARANTEE OF A DRIVES SYSTEM IN STEP WITH THE MODERN TIMES. THE RENOVATION OF **CARTIERA DI VIGNALETTO** PLANT IS COMPLETED – HAVING ALREADY REBUILT THE PM4 DRIVE, PM4 WINDER AND PM5 WINDER, IN THE PAST YEARS - THE NEXT STEP IN AUGUST 2018 INCLUDED THE MODERNIZATION OF ELECTRONIC PANELS AND CONTROL DESKS OF THE PM5 DRIVE, THE REBUILDING OF THE TURBOGAS SUPERVISING SYSTEM CARRIED OUT BY SAEL SERVICE POINT, COELME OF GENOVA. THE WHOLE PLANT IS NOW COORDINTATED AND MANAGED BY OUR SUPERVISING DCS SYSTEM AND TELEASSISTANCE IWSA FOR PAPER MILLS. **98% OF PRODUCTIVE EFFICIENCY** WAS ACCOMPLISHED WITH NO OTHER MODIFICATION.

by: **Paolo Andrighetti SAEL**

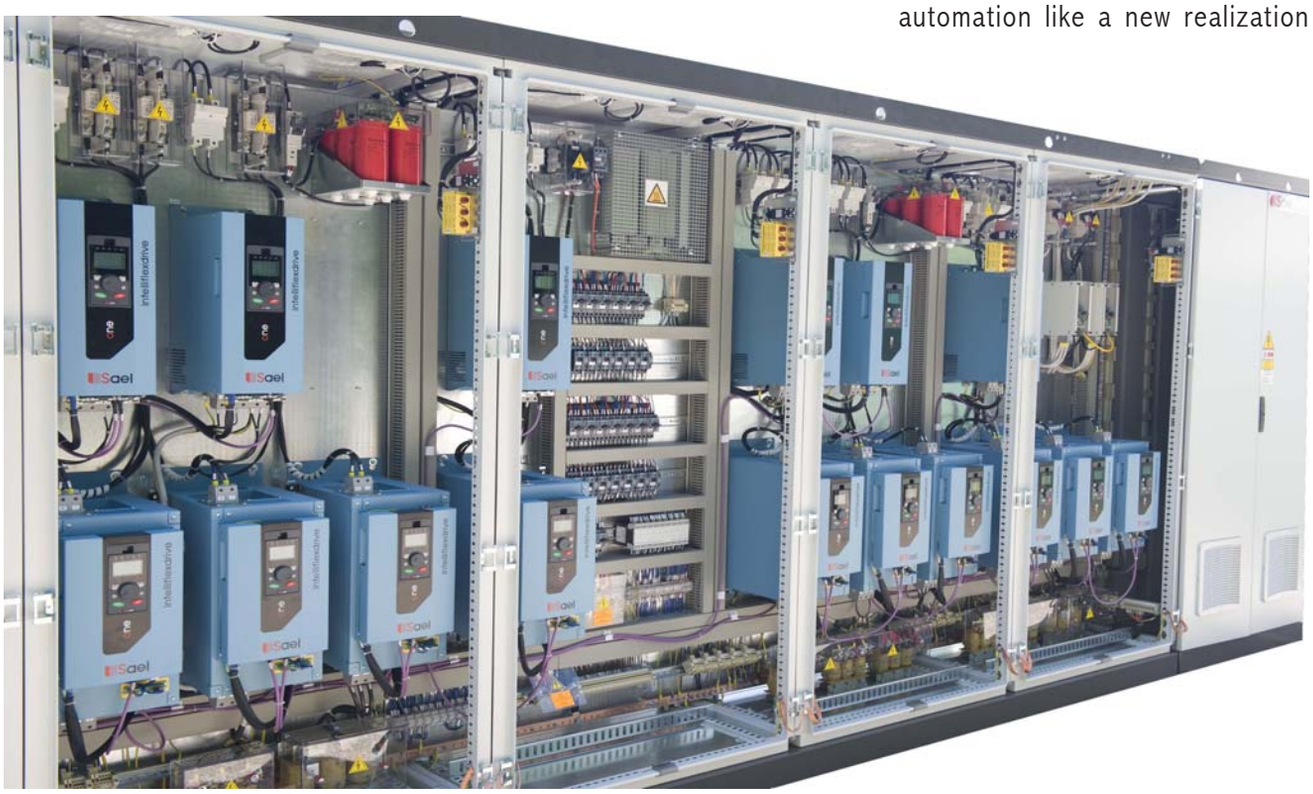
Further application of “Platform ONE” SAEL, the innovative and highly performing system with which manages automation and drive with significant cost savings, was applicated with success at PM5 which used old drives without available spare parts; the continuous disruptions connected to the TURBO GAS, a system that used automation of the old generation Nuova Pignone, has led the paper mill to assign us this work that has been dealt with using Siemens standard PLC instead of proprietary microprocessor cards-MOORE- those that have incommoded the paper mill in its management. Cartiera di Vignaletto , which has always dealt with investments in an ergonomic manner and only after careful selection of all possible solutions, in these years has searched to evolve their production trying to influence the quality of its products following their technical growth thanks to the improvements offered by SAEL.

WORKS IN THE PAPER MILL:

Cartiera del Vignaletto founded at 1966. The plant spreads in an area of around 30.000 m2 in the area of Tre Ponti, at S. Maria di Zevio, in the province of Verona. From the beginning the paper mill has been able to stand out for the reliability of its products exclusively for hygienic use, and today it produces the whole range of Tissue papers. The daily production is around 140tons of tissue of superior quality. With a view to enlarging the range of products to be offered to its customers, in 2000 it started a new plant in the province of Matera for the production of dry paper “AIR LAID”, destined for the secot of napkins, table covers,diapers, sanitary towels, food absorption and more.
The paper is produced in mother reels, up to 4plies, of grammature from 15gsm to 40gsm, is destined to the production of paper towels, napkins white and printed, (also fully painted), toilet tissue Standard and Soft, Kitchen towel and industrial, facial tissue, velvet for sanitary towels and many

The inverters of series “PLATFORM ONE DRIVES” equipped with ONE card (the only card for all types of drive for motors DC-AC-BRUSHLESS and REBORN) and film capacitors, guarantee an infinite life for the inverter.

others, with a wide range of soft colors.
The actual 2 machines of production, one with double fourdrinier and one with crescent-former, both width 280cm, are equipped with advanced technology that makes it possible to manufacture paper of high strength and absorption. On the part of the owner, great interest has been dedicated, both in the design phase of the plants and during the subsequent extensions and improvements, to the environmental aspect through the use of very modern plants for purification, clarification and recovery of waste water, a high efficiency cogeneration and finally through an air purification unit in the paper machine.
The choice of the paper mill was SAEL, after a carefull examination of the technology, reliability and implementation times that led, during the offers phase, to choose some very special techniques that only a flexible system like “PLATFORM ONE of SAEL” allows to carry out.The flexibility and ductility of our drives and the automation through PLC Siemens and SW PLC completely open, applied in the rebuilding of any kind of electronic control, has immediately proved to be very competitive and reliable also in terms of costs. ONE drive allowed to reuse all the electromechanic components, the cabinets and the internal wiring, guaranteeing a new life after the transformation of the old framework with a considerable economic saving of the rebuild.The applied system has allowed to obtain a drive-automation like a new realization



Electrical cabinet of sectional drive with inverter of the exclusive series “PLATFORM ONE” drives.

PM5 : all the automation and drives of CartieraVignaletto are substituted with "PLATFORM ONE"

but with the difference that the spare parts of which the paper mill was already in stock, remain valid, lowering the management costs. The **TURN KEY** supply has dealt with all the work of engeneering, wiring and replacing all obsolete internal panel boards replaced by SIEMENS PLC. In all SAEL realizations, the electronic management boards that previously provided the automation or the calculation part to achieve the desired adjustments are eliminated.

THE SECTIONAL DRIVE OF THE PAPER MACHINE

The supply has essentially managed the 8 AC 690V motors of the paper machine and 6 other 690V AC motors for the hood pumps and fans.The Machine automation has provided the classic functions of our sectional drive with the management through our exclusive "DCS in DRIVE" control system, with which we can say today, of being at the peak of any technical comparison in the sector.In the refurbished plant of the Vignaletto Paper Mill, the processing and reference generating system for the drives and the PLC, was previously incorporated into a system of proprietary cards managed by several obsolete and out-of-production PLC units.The system was difficult to manage, and the paper mill itself indicated as being a product that created concern whenever there were faults, also having a major difficulty in finding spare

The only regulation car same for all our drives DC-AC-BRUSHLESS and REBORN(system to recover all the DC drives of different models)

The new electrical cabinets for TURBOGAS Nuovo Pignone and the drives of the machine, PM5 Vignaletto.

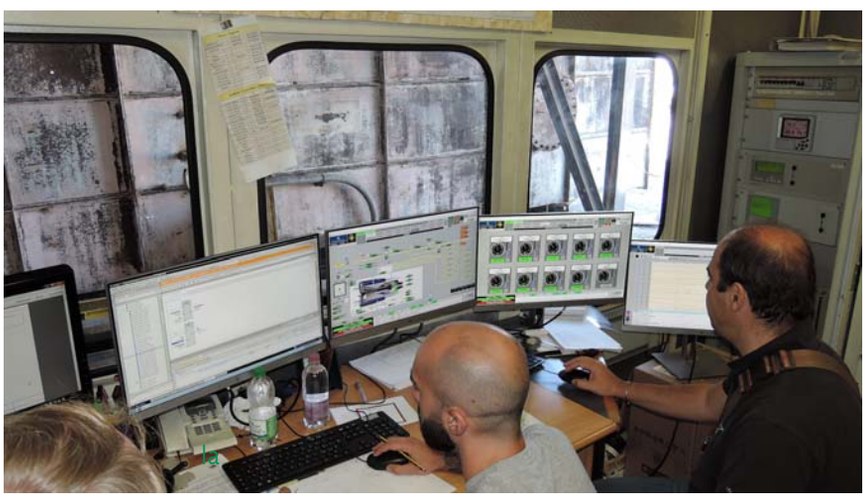
parts.The elimination of these boards, PLCs and various other application cards was therefore the reason for the reconstruction. The DCS supervision system adopted was traced by our installed "SAEL paper machine supervisor" with on board trends, synoptics, alarms history, recipe management and remote assistance.The trends, just as they have been studied, create the infallibility that the system always indicates in the search for any defects in regulation or management by those who use it. It is possible to understand, whenever a paper break occurs, if the problem is coming from the automation, the drives or the field, memorizing all the commands given by the operator, the authorizations of the settings, the external alarms of the drive and all other actions. The architecture of the DCS, guided through machine synoptics that intuitively lead to its navigation, has also been structured to be opened up to a corporate intranet. From every PC in the office, you can directly access the machine supervisor, letting the user connect directly to the machine. Using this system, the machine maintenance team can check before intervening where the problems are focused; in case of night technical support, the electronic technician directly from home, can connect to the server and guide the internal factory staff at the restart of the machine.

THE AUTOMATION OF TURBOGAS

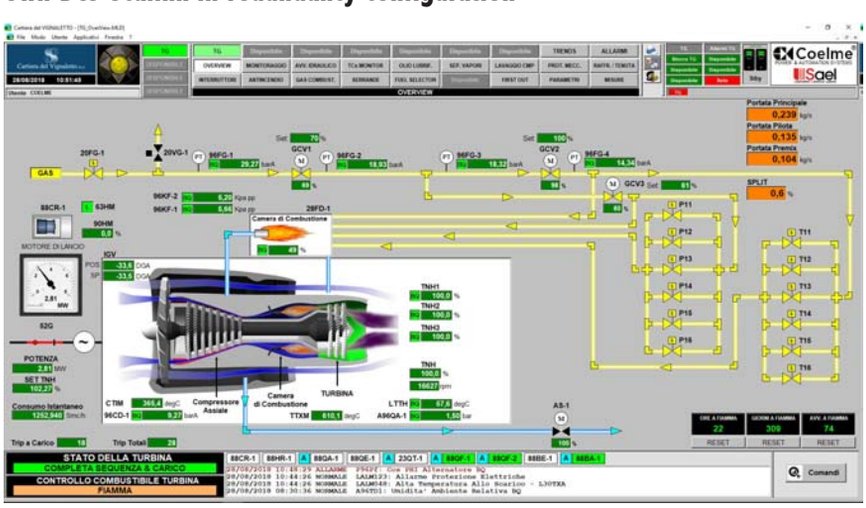
The supply concerned the migration of the existing control system in which, even in this case, the availability of spare parts and the possibility of optimizing its operation, had become almost impossible to handle.The various disturbances and the almost complete impossibility of understanding its motivations, have pushed the paper mill towards our idea of replacing the MOORE control system currently in use and all its logic, with a new commercial PLC with OPEN SOURCE software. As requested the control system was developed on PLC Siemens S7-1500, I / O ET200MP Siemens (The new TIA series), the CPU and I / O cards were installed in the existing framework, in the position of the

Global photo of Turbogas 5Mw reconstructed at Cartiera Vignaletto.

Turbine and alternator Turbogas Nuovo Pignone, Cartiera Vignaletto



Control room Turbogas realized with PLC Siemens series 1500 and our own DCS Scalink in redundancy configuration



Page of DCS control, after 7 days of verification and set up the plant produces 5 Mw in automatic mode.

Existing plc. All the existing logic were thoroughly reproduced, making improvements that the system even did not have before. Engineering and MIS activities were carried out by technicians with TIA Siemens programming experience and with managerial and plant engineering experience on Turbogas. Supervision, as usual, was developed on the SCALINK platform and is configured in two servers that also guarantee active redundancy. The work started in the paper mill during the stop in which we reconstructed the MC5 drives, began its activity well in advance, to allow a precise and versatile mapping in every condition. During the realization of the system in our factories, as per our tradition, two paper mill technicians were trained in SAEL; during the design phase every implementation decision has been carefully examined and decided together with the working group and incorporated like that.Their complete involvement in the study of the machine and the types of adjustments dealt with, has led them to acquire such knowledge to be involved at the start up, just like one of our technicians. From the 27th of August the paper mill works continuously on three shifts and the electronic technicians of the paper mill can carry out modifications or improvements on the system independently. The omnipresent Mr. Mario Lovato, CEO of the paper mill together with Mr. Andrea Vivaldi responsible for electrical maintenance, with this construction and start-up have obtained, in addition to the training of their technicians, a form of insurance on the plant.Absolutely and unequivocally, they have the peace of mind that, in case of anomalies or work problems, their technicians can intervene autonomously and promptly reduce the stop times to zero. Moreover, Internet World Sael Assistance has allowed us to annihilate our distances from the Zevio plant (Verona); whenever there are doubts about the system, through a simple internet connection on the SAEL website, we will enter the factory directly next to the maintenance technician.

The possibility of modifying, SW on the PLC, drives, supervisor or electronic cards used, is made

PM5 and Winder PM5, Cartiera Vignaletto

Winder PM4 and PM4 machine, Cartiera Vignaletto

MC4 Cartiera del Vignaletto, Reeborn of drive ABB.

accessible by the system; a direct vocal conference with the interlocutor in the paper mill, satisfies every feeling of loneliness from their part,in dealing with problems.
REBORN and IWSA also in this plant, has demonstrated the best choice to rearrange a machine that previously was accused for various problems of use and management; the all-inclusive costs of implementation, as usually our trend, are allowing several of our clients to deal with this type of work even when budgets linked to new investments often do not allow it. The SAEL drives designed and manufactured in the "Intelligent Drive" series now offer an infinite number of possibilities for those who make and design paper machines. Month after month, year after year the drives, whether they are inverters or DC drives, bring all the know-how of SAEL ON BOARD. A reference cascade for a control of a paper machine can be embroidered and managed only by wiring a Canbus network (standard in all our products) between each drive. The product is simple and reliable because it is specially designed for the paper industry sector and is well suited for combining with Siemens PLCs.With this series of PLCs a direct dialogue has been created through the realization of a BRIDGE board in Can Bus. Without any additional costs, all our inverters or DC drives can communicate with the commercial PLCs and exchange a series of words in both reading and writing. Unlocking, parameters, references, pulls and any further adjustment can now be processed by the PLC and sent to the drives that also maintain the possibility of using all the process blocks integrated in them (servo motors, reference cascades, filters, multipliers, load cell controllers , load distributors, speed adapters, positioners, etc.).

Box SAEL:

Specialization in the Paper Industry

SAEL operates from 1987 in the sector of industrial automation, as a designer and manufacturer of electronic control and regulation products and equipment for machines and plants in various sectors. The sectors in which has more experience and numerous applications are: Paper Industry, steel industry, wire industry, plastic and tires, machine tools, special machines. In particular the paper and related industries are for SAEL fields of strategic intervention. Strong experience and high technological solutions and innovations, offers to its customers Hardware and Software architectures directly linked to the requests proposing diversified solutions aimed at optimizing costs, management and quality. The activity is based, in addition to the new, on the rebuilding of all the electronic automations in which, in some cases, it is possible to reuse also the power of the existing converters and the electromechanical drive part. The specializations in this sector are: sectional controls with DC, AC and mixed technology; additions of motors on existing drives; Coaters in line and offline; conversions of analogue cascades to digital; calenders and supercalandres; Stock preparation with PLC or SAEL technologies; winders and slitter rewinders; synchronous or fixed blade sheet cutters; pope reels and unwinders.

The "PLATFORM ONE DRIVE" Inverter is made for Paper Mill Industry. They are the most innovative solution in the market. Their mission is the long life, and easy to be repaired; flexible and easy to drive. All our drives are equipped by the ONE Card – A Single board fits all the drives: DC, AC, Brushless and Reborn -, Film capacitors for a long life inverter.