Celebrating CEMAT – intelligent process control for 40 years
It all began in 1974
The first CEMAT ever, based on Simatic S3, was installed in the Cementos Hispania's cement works in Yeles, Spain, in 1974. Technological development has taken a quantum leap since then. And over the years, CEMAT has been updated with a number of innovations in line with technical progress. Today, it is the leading process control system for the cement and mining industries as well as related industry branches – with more than 800 installations worldwide.

Based on a comprehensive philosophy
To reliably meet all production requirements, CEMAT has been developed in close cooperation with the cement industry. Its philosophy consists of how to efficiently operate a cement plant, how to maximize plant uptime, and how to intelligently network all modules involved, like drives, dampers, belt conveyors, and measuring values.

Smart and efficient plant control
From the start, CEMAT proved to be more than a software library. The highly innovative distribution control system (DCS) helps optimize production, processes, and plant performance – at all corporate levels and throughout the value chain.

CEMAT – successful for 40 years
Advancing efficient processes, keeping production costs competitive, complying with strict emission limits. For over 40 years now, the CEMAT integrated process control system has supported the cement, mining, and related industries in successfully meeting these challenges. And the story continues.

1974
CEMAT based on Simatic S3
First installation in Yeles, Spain

1974
Visualization with DISIT-Z
Additionally to push buttons in the CCR:
CEMAT V1.6 based on Simatic S5

1981
First color monitors
Used for visualization in the control room:
CEMAT V1.8 based on Simatic S5

1986
We have been using CEMAT for more than 30 years now. It’s one of our standard process control systems because of its high market acceptance and Siemens’ long experience in the industry. Moreover, CEMAT offers customized configurations that keep things simple.”

Markus Konecki, HeidelbergCement

CEMAT makes use of all Simatic PCS 7 features and adds industry-specific functionalities. Offering you the relevant data at a glance and in real time, it increases transparency in both quality and production control. You also benefit from consistent data management, standardized operation and monitoring, and consistent engineering in distributed automation structures. All functions of the plant control are pre-configured and have proven their worth over the past four decades.

A decision for the long term

A plant’s lifecycle is much longer than the service life of a control system’s version. So a control system needs to offer more than just smart features to prove itself a safe investment. The secret of success behind CEMAT: While every new version includes the latest technological innovations, the organization and core functions of its modules have always remained unchanged. This ensures that the latest version of the process control system is backward compatible with all previous versions – dating back as far as 1987.

Markus Konecki
Engineering/Senior Project Manager
HeidelbergCement, Germany

HeidelbergCement is the global market leader in aggregates and a prominent player in the fields of cement, concrete, and other downstream activities, making it one of the world’s leading integrated manufacturers of building materials. The company employs some 45,000 people at 2,300 locations in more than 40 countries.

Benefits at a glance
- Efficient process management and plant operation
- Easy, fast, and reliable engineering
- High plant availability
- Reduced energy consumption
- State-of-the-art technology with backward compatibility
- Scalability in size, functionality, and performance
- Ideal for cement, mining, and related industries

Automatic generation of block icons
User rights can be defined per instance:
CEMAT V6.0 based on Simatic PCS 7 V6

2003

2003

Minerals Automation Standard

2010

Object browser
And jump function from drive faceplate to interlocks:
CEMAT V2.1, based on Simatic PCS 7

2010

2014

2014

MinAS as industry-specific library:
CEMAT V8.1 based on Simatic PCS 7
Q: How would you describe your partnership with Siemens?
KMI: We have been working together for a long time, also within projects. We are providing our service to the big global cement players, and if they have very big projects, they usually choose bigger suppliers, such as Siemens, for their automation projects, and we will come in as a subcontractor partner. On the other hand, we are also providing our services directly to end customers, using CEMAT.

Q: What are the strengths of CEMAT? What are the key benefits for your customers and you?
KMI: CEMAT is not only a library, it’s a philosophy. It has been developed for more than 40 years, and I think it fits perfectly not only into cement plants, but also into any process automation that runs with continuous processes. CEMAT is a process control and library that gives you all the tools you need to do excellent work. The application engineers have to translate the issues of the plant, using CEMAT, into a program, and the operator has to handle his system with what you deliver. When you do it in an excellent way for him, he will be very satisfied.

Q: How long have you been using CEMAT, for 30 years?
KMI: Yes, starting with the first CEMAT version, which was CEMAT 1.6, I guess.

Q: Are you able to name some of the current projects?
KMI: We have some projects in Pula, Croatia. We also have projects in the Philippines for a big international cement player; the customer has decided that all his Philippine plants will use CEMAT. The customer used to have only one plant running with Siemens process control; the rest have been running on non-Siemens process control systems. But now the decision has been made that cement plants will move to CEMAT.

Q: How would you like to continue the partnership with Siemens in the future?
KMI: If the support stays as good as it is, we will be happy. Right now, we are quite satisfied with what Siemens has to offer.
Q: Did you choose Siemens because you knew Siemens?
VisionTech: Yes, but also because, when we started with PCS7, we were looking for a library. We are system integrators; we are not interested in producing our own library. Since we don’t do development, we want to benefit from buying off-the-shelf products, such as CEMAT.

Q: Apart from minerals industries, which other industries are you involved with?
VisionTech: Nearly every industry, for example, pharmaceutical, energy, glass, chocolate, aggregates, etc.

Q: What strength do you see in CEMAT? Why do you use CEMAT for your projects and customers?
VisionTech: For us, it’s of course the engineering, because we need to be efficient in engineering, since Norway is a high-cost country. So you have to do something smart. For our customers, we think that they get added value from CEMAT. CEMAT has been working with the industry for so many years, they know what the industry wants; the knowledge has been inherited over decades. Forty years, that’s a lot of experience our customers can benefit from, and from the add-ons inside the objects, you get the running time, diagnostics, maintenance information, group start, etc.

Q: Do you have any upcoming projects that involve CEMAT?
VisionTech: We have not got any orders, but one mill, a kind of flour mill, could use CEMAT because there’s a lot of transportation involved. Another project in the pipeline is a waste-energy plant, which will have to upgrade soon. Many of the projects deal a lot with handling and transportation, so there’s not too much difference compared to a cement plant. It’s process-oriented and the equipment is more or less the same: motors, valves, and analog measurements – they have function groups to control, etc.

Q: Do you have an idea how you would like to continue your partnership with Siemens?
VisionTech: It is very important to have a partner who supports and helps us when we need it. Siemens is providing the kind of support we need, and we are also given access to trainings, workshops, best practices, etc.

“We use CEMAT in various different industries”

Einar Rønning
Senior System Engineer
VisionTech, Norway

VisionTech AS is a strategic service partner and solution provider for industry and infrastructure suppliers within the fields of electro, automation, and industrial IT.
For its new cement line in Benin, the Senegal-based Les Ciments du Sahel wanted technological components from European suppliers. The line operator Sinoma CBMI of China chose CEMAT – because of the consistency of PCS 7 as well as Siemens’ dedication to high quality and expert support. Under a tight schedule, the crusher, cement mills, and packing facility were commissioned in November 2013. In July 2014, the rotary kiln was commissioned.

Reference project: Benin, Senegal

Scope of delivery:
- Around 80 automation cabinets
- 8 Simatic S7-400 control units with a redundant plant bus
- Over 1,000 ET200 I/O cards for around 14,000 signals
- Data archival and reporting with Sicement MIS
- Kiln control system (KCS)
- CEMAT software engineering for the entire plant
- Comprehensive PCS 7 and CEMAT training
- Four-week factory acceptance test for software including simulation
- Commissioning over a period of eight months
Kipaş Holding is one of Turkey’s fastest growing companies with investments in paper, energy, textiles, and cement. Due to an increase in exports, its KCS (Kahramanmaraş Cimento Sanayi) plant in southeastern Turkey needed higher capacities and had to add a second line. Clinker production started in October 2013 – and the cement and packaging line commenced operation in February 2014. The last unit of the roller press went into service in April 2014. The complete electrical packages for line two were supplied by Siemens, including the drive systems and CEMAT for fully automated plant operation.

For the future, KCS has the option of replacing the automation system on the first line – which started operation in 2008 – with CEMAT.

Reference project: Kahramanmaraş Cimento Sanayi (KCS), Turkey
The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.