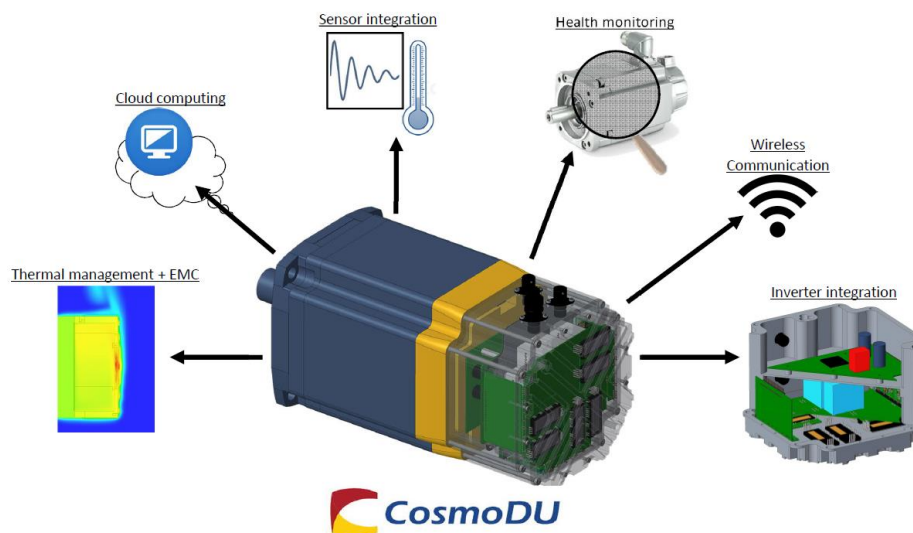


## CosmoDU: bringing intelligence to electric drives for Industry 4.0 manufacturing

*A project within the EUREKA PENTA programme*

Paris, September 27, 2018 – CosmoDU, a EUREKA PENTA cluster project managed by AENEAS, is bringing intelligence to the electric drives that control production machines such as industrial robots or conveyor belts. The project aims to create the first hardware platform able to implement self-learning capabilities within applications, allowing them to adjust and improve the performance of the applications during operation and to ensure timely preventive maintenance.



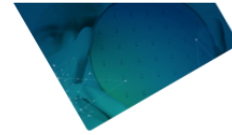
These smart intelligent electric drives will be key enablers for Industry 4.0. They will increase manufacturing flexibility and even have the ability to learn from identical units located elsewhere via secure communication links. Moreover they will maximise system availability by eliminating downtime due to unexpected servicing needs. Hence, CosmoDU will not only strengthen the technological leadership of the 14 partners involved, but also support European manufacturing and create new jobs through competitive, smart and highly flexible industrial production.

Highly market-focused, CosmoDU will help deliver mass production efficiency for small lot sizes ('Lot Size One') – a key element of the Industry 4.0 vision. In addition, the hardware platform – which will integrate sensors, signal processing, secure communication and control electronics as well as the power electronics and the driver stages directly in the housing of the motor – will be easily translatable to other domains including tooling machines, automated driving and full-scale electromobility, as well as smart energy and smart infrastructure solutions.

According to IMS Research, there are substantial prospects for a high return on investment from this research. The total market for 400-1200 V powertrains relevant to industrial drives is worth about 25



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billion USD in year 2015, with annual growth of over 10% for drives using conventional technology. With integrated power and IT technology, the market share for intelligent integrated powertrains is expected to grow even faster. Furthermore, intelligent electric drives will enable major reductions in energy consumption in factory automation by reducing cabling as well as increasing the overall system efficiency. It is estimated that variable speed drives could cut approximately 10% of worldwide electrical energy consumption, with corresponding savings in costs and CO<sub>2</sub>-emissions (Source: ABB).

Besides these economic and environmental benefits, the CosmoDU project will deliver benefits for its participants – three large companies, eight small and medium-sized enterprises (SMEs) and three research institutes and universities from Germany and the Netherlands. The market-leading OEMs and Tier 1 suppliers involved will be able to exploit the results immediately in their businesses. For the expert SMEs, this is an opportunity to employ and develop their expertise in key areas such as electromagnetic compliance (EMC), health monitoring of electronic systems, active performance control, packaging processes and equipment, motor control and system integration of the hardware and software. Similarly, the research organizations will gain valuable knowledge in industrial practice, which will both enrich academic knowledge and improve future research services to industry.

#### About the PENTA programme (managed by the AENEAS Industrial Association)

PENTA is a EUREKA cluster whose purpose is to catalyse research, development and innovation in areas of micro and nanoelectronics enabled systems and applications - where there is shared national and industrial interest. Based on three key application areas, Transport & Smart Mobility, Health & Well-Being and Digital Industry for the first 3 calls, PENTA programme contributes to the development of electronic solutions with the opportunity for rapid competitive exploitation and a strong impact on European societal challenges. The PENTA project team is supporting SMEs, large corporations, research organisations and universities by facilitating access to funding, fostering collaborative work and creating consortia.

PENTA is managed by AENEAS, the European industry association

About PENTA: <http://www.PENTA-eureka.eu>

About AENEAS: <https://aeneas-office.org>

#### About CosmoDU

CosmoDU is a RD&I project consortium involving 14 partners from 2 countries. The project partners are: Siemens AG (project leader), AAMITRONICS Angewandte Mikromechatronik GmbH, Advanced Packaging Center BV, Berliner Nanotest und Design GmbH, Boschman Technologies B.V., Catena Holding BV, Delft University of Technology, Fairchild Semiconductor, Fraunhofer Institute for Electronic Nano Systems (ENAS), Fraunhofer Institute for Integrated Systems and Device Technology (IISB), Heliox, Langer EMV-Technik GmbH, Robert Bosch GmbH, Technolution BV. National funding support is provided by Germany and the Netherlands.

About CosmoDU: <https://www.cosmodu.eu>