



Standardization in research and innovation projects

Success story: **advanced manufacturing**

ENCASIT

The European Network for Coordination of Advanced System Integration Technologies (ENCASIT) was a 2-year FP6 project (6th European Research Framework Programme) focused on gathering and disseminating information on semiconductor and microelectronic assembly, with the aim of coordinating developments in the European electronics manufacturing industry. The project finished in 2011, having developed a series of international standards that enable better communication between manufacturers, designers and suppliers in the co-design, procurement and use of semiconductor products.

bit.ly/1be8Aiv

THE PROJECT

The speed of modern innovation in areas such as mobile computing, handheld devices and medical technologies has meant that microchip designers and manufacturers increasingly stack several functional chips into ever-smaller packages. A single one-off package might include numerous chips supplied by different designers and manufacturers, creating the need for common ways to specify the performance and functionality of individual components.



The ENCASIT project was the last in a series of interrelated European-funded projects running over two decades that brought together and coordinated developments in the semiconductor industry, such that semiconductor components could be purchased and integrated more easily and efficiently, thus allowing the industry to operate on a far more competitive basis. The projects involved a large network of users, and gathered and disseminated information on semiconductor and microelectronic manufacture, assembly, packaging and test technologies to the European electronic manufacturing industry.

STANDARDS: A SOLUTION FOR MARKET UPTAKE

Early in the series of ENCASIT projects, it became clear there was a need for standards relating to semiconductor product information. These would provide more comprehensive solutions, better meet the requirements of those designing, procuring and using semiconductor devices, which would assist in supply chain communications. These needs were addressed by the project and its predecessors through the development of a series of European standards that specified data requirements for semiconductor die (ES 59008 – ‘data requirements for semiconductor die’ series, published 1999 - 2002), and then a series of international standards on the requirements for both the procurement and use of semiconductor die products. These later standards were published in 2005 and revised in 2010/11 to reflect industry advances (series IEC* 62258 - ‘semiconductor die products: requirements for procurement and use’).

The ENCASIT project consortium provided guidelines and good practice for companies in the semiconductor industry, and facilitated the production, supply and use of semiconductor die products.

* IEC is the International Electrotechnical Committee

 The standards developed by the project were well received by industry and are being used by semiconductor companies, and those involved in the design and manufacture of electronic components. 

Ken Ball, ENCASIT Technical Manager

HOW WAS THE STANDARD DEVELOPED?

Standardization activities were foreseen from the project proposal stage. The standardization work brought together manufacturers, designers and suppliers, from both Europe and elsewhere, and took advantage of both the review work undertaken by the ENCASIT project, and the network of 2000+ users it had assembled.

By bringing together actors from all parts of the supply chain and from across the globe, the standardization work ensured that the semiconductor industry had an appropriate set of standards that could meet their respective needs and were widely applicable, therefore guaranteeing interoperability between the different market players.

IMMEDIATE BENEFIT

The standardization process widened the scale of the ENCASIT project, as it brought the CENELEC (European Committee for Electrotechnical Standardization) and IEC (International Electrotechnical Commission) communities into scope, and gave the project a truly global perspective. This wide participation ensured that the solutions set out in the standards were widely applicable and accepted, helping to overcome and avoid potential problems of incompatibility in ever more advanced microchip products.

In addition, standardization provided a platform for the industry to reach a European, and then global consensus on the optimal ways to specify, design and manufacture advanced semiconductor die products.

LONG-TERM IMPACT

The published standards provide an internationally accepted way to describe the physical and electrical properties of semiconductor dies. This benefits the whole semiconductor supply chain as it facilitates the production, supply and use of semiconductor die products.

By publishing the results in the form of a series of international standards, the projects have a lasting legacy that will continue to ensure the semiconductor industry can work together in the development and delivery of world-leading products that support the competitiveness of modern European industries.

Several members of the ENCASIT consortium have also become 'experts' in standardization over the course of the projects, and continue to be involved in Technical Committees, initiating new standards and contributing to the competitiveness of the European and global micro-electronics industry.



Getting people together to coordinate and cooperate is beneficial in general for an industry – standardization encourages and supports this happening. If the ENCASIT projects hadn't been involved in standardization, then we wouldn't have got as far as we did.



Ken Ball, ENCASIT Technical Manager

www.cencenelec.eu/research



Every project is different. The CEN-CENELEC Research Helpdesk can provide you with advice on how to include standardization in your project. Please feel free to contact us!

Email: research@cencenelec.eu
Tel. + 32 2 550 08 11
Avenue Marnix, 17- B-1000 Brussels, Belgium