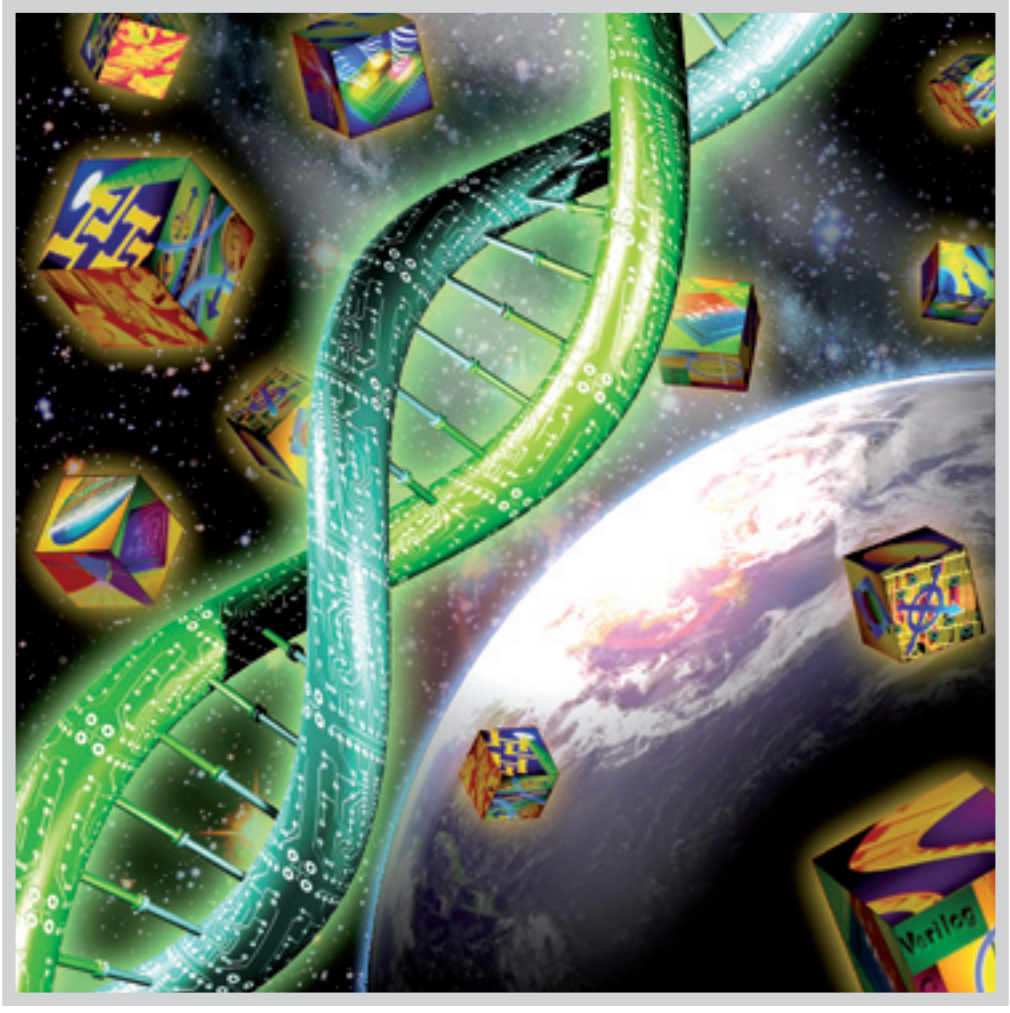
efficiency
Optimizing
faster
powering up
modelling
nanometer scale
maximize
idea
circuit creation

Design a New World

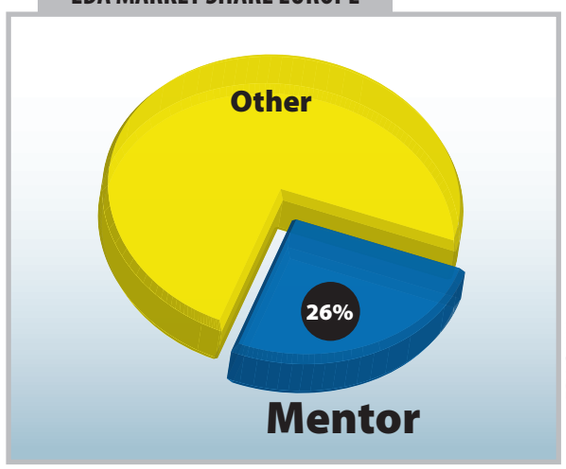


Mentor Graphics®

It all begins with Mentor Graphics

Mentor Graphics® is a technology leader in electronic design automation (EDA), providing software and hardware design solutions that enable companies to develop better electronic products faster and more cost-effective. The company develops, manufactures, markets, sells and supports EDA products and provides related services, which are used by engineers to design, analyze, simulate, model, implement and verify the components of electronic systems. Mentor's customers are large and small companies in the military/aerospace, communications, computer, consumer electronics, semiconductor, networking, multimedia, medical and transportation industries. They use Mentor Graphics solutions in the design of all electronic products, including semiconductors, (such as microprocessors, field programmable gate arrays (FPGAs), memory and application specific integrated circuits), printed circuit boards, embedded systems and wire harness systems.

EDA MARKET SHARE EUROPE



source: EDAC 2005

Key Points

- Publicly held (NASDAQ: MENT)
- Founded 1981, headquartered in Wilsonville, Oregon
- Approximately 4,250 employees worldwide (950 in Europe)*
- Revenue in last reported 12 months : over $800 million*
- Over 70 offices worldwide*
- Over 30 engineering sites worldwide (15 in Europe)*

** as of 2006*

Modelling your ideas

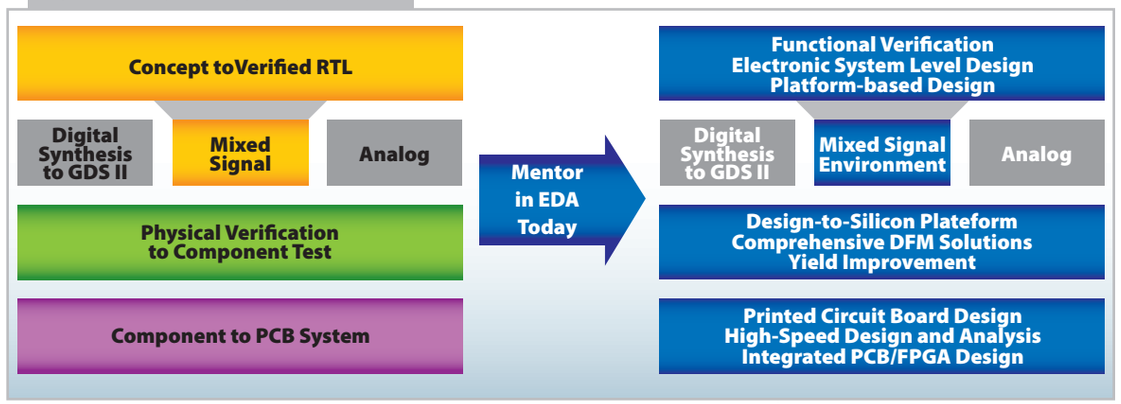
Mentor Graphics solutions help engineers overcome increasingly complex challenges in the design of electronic systems. Mentor Graphics products are designed to make design engineers more productive, improve the accuracy of complex designs and shrink time-to-marked schedules. Electrical engineers begin the design process by describing the architectural, behavioral, functional and structural characteristics of an integrated circuit (IC), a printed circuit board (PCB) or an electronic system. In this process the engineer describes the overall product system architecture, implements by creating a design description, verifies the design to reveal defects and modifies the description until it meets the previously determined design specifications.

Engineers use Mentor Graphics verification products throughout the design process to identify design errors and test design alternatives before the design is manufactured. During the manufacturing process, Mentor's software test products help identify defective parts and improve yields.

Hanns Windele
Vice President Mentor Graphics Europe

« Innovation is the foundation of Mentor's success. Close customer partnerships allow us to understand their long term needs which drives our product development. Aligning our solutions with real customer needs helps us to be a key enabler for their success. »

A SIMPLIFIED VIEW OF EDA MARKET



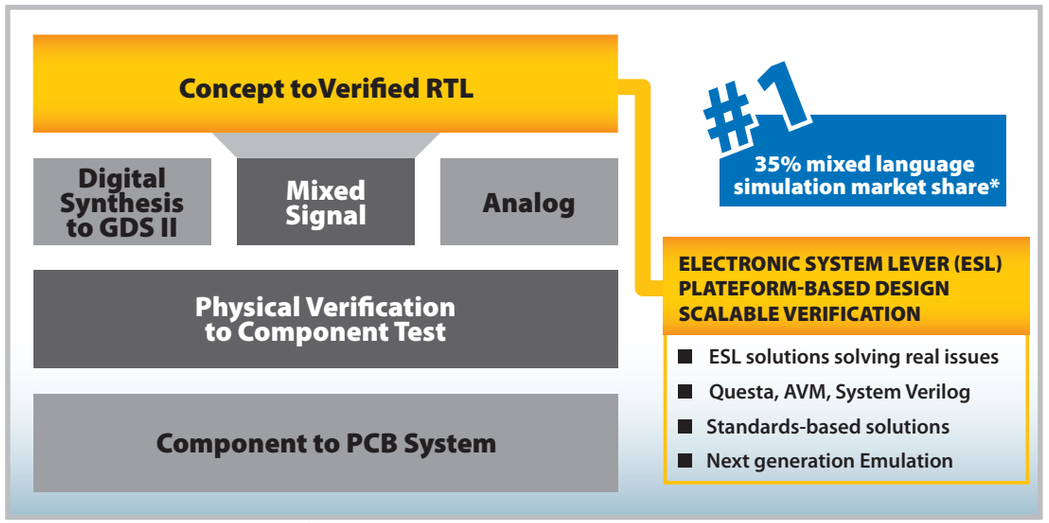
The most important decision for your bottom line

Design complexity of next-generation digital signal processing (DSP) applications is outgrowing the capabilities of current design methods. Increasingly, designs are large systems that include embedded cores, IP, and complex hardware that implements computationally intensive algorithms. Traditional hardware implementation of these computationally intensive blocks requires many manual steps which are inevitably error-prone.

The Catapult C Synthesis product from Mentor Graphics is a customer-proven algorithmic synthesis environment using pure C++ language to describe functional intent. This enables engineering teams to produce reliable ASIC or FPGA hardware that is up to 50 percent smaller in size, in a significantly reduced amount of time. Catapult C Synthesis unites the system-level and hardware design domains and, combined with the Mentor Graphics ModelSim® simulator, lays the foundation for next-generation electronic system level (ESL) design.

Pascal Urard
High-Level Synthesis Manager in Central CAD & Design Solutions
STMicroelectronics

About C-Based Design
« Catapult C Synthesis is now a proven tool that helps ST accelerate the development of high-quality signal processing hardware. Catapult C libraries are the first high-level synthesis technologies to satisfy our stringent standards and we now want to extend the benefits of high-level synthesis to our customers who need to develop sophisticated next-generation designs as quickly as possible. »



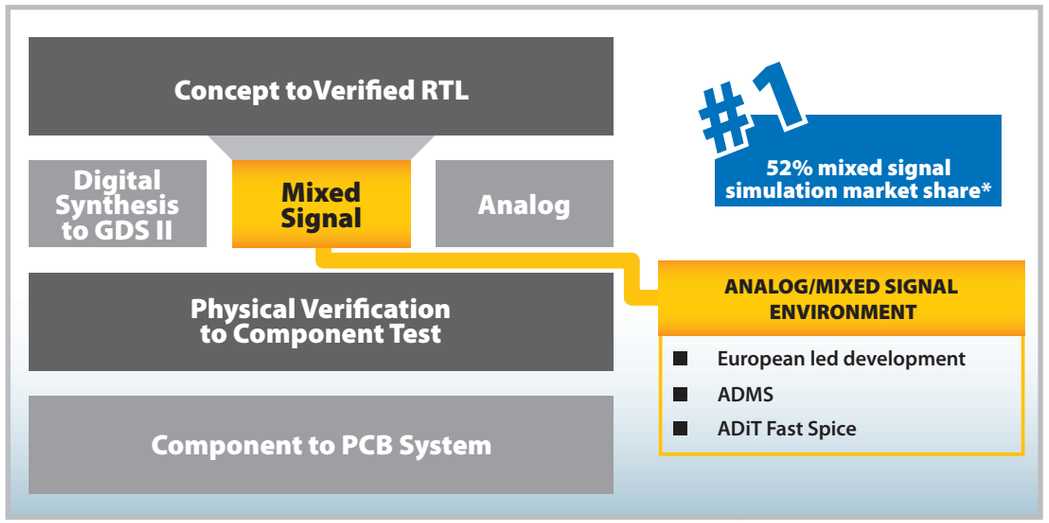
* Gartner/Dataquest Market Trends: Electronic Design Automation, Worldwide 2005

Face the real world challenges of SoC

Mentor Graphics provides its customers with critical tools for solving the increasingly complicated problems of verifying that today's complex chip designs actually function as intended. Functional errors at the system level are the leading cause of design revisions affecting time to market and profitability. Design teams must improve existing methodologies with tools that scale across design complexity and multiple levels of abstraction. The Mentor Graphics Scalable Verification™ platform, featuring the Questa™ advanced verification environment, is the most comprehensive EDA solution for functional verification, merging standards support, tools and a "design for verification" methodology to minimize verification cycles and design revisions. This solution provides the industry's best language support and the most complete path for verification, from hardware description language (HDL) simulation to in-circuit emulation, including support for testbenches, assertions and functional prototypes. Mentor offers standards-based support for the most advanced verification requirements with integrated technologies now including the 0-In® assertion-based verification tools and methodologies to enable comprehensive verification throughout the entire design.

Ph.D. Wojciech Sakowski
President
Evatronix SA

About FPGA Design and Precision Synthesis
« Questa is the most complete and flexible functional verification tool I know. We are able to find everything we might need in our work in one comprehensive environment - from PSL and SVA on the one hand to SystemC and really impressive SystemVerilog on the other one. After adding 0-In formal engine, seamlessly integrating it with Questa, we are able to find really deep hidden errors. »



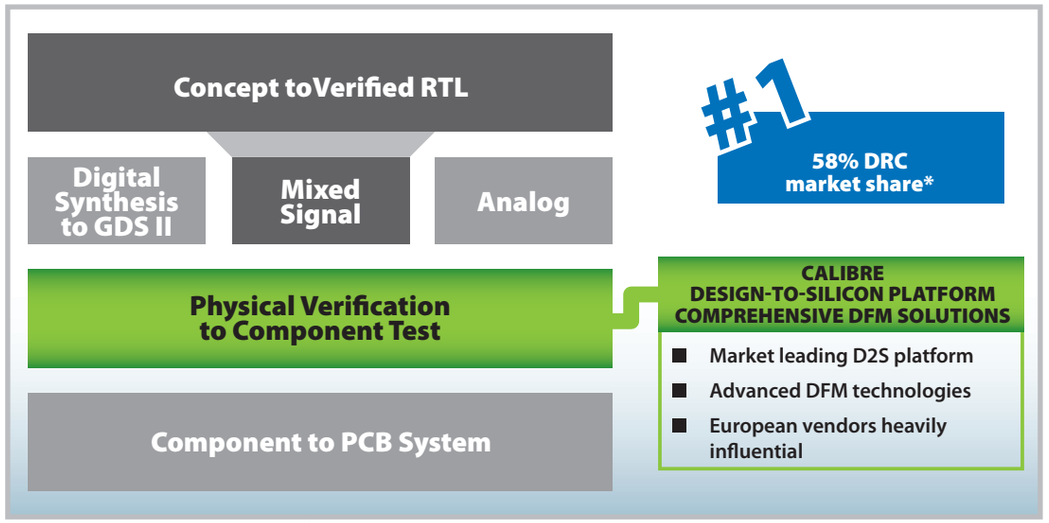
* Gartner/Dataquest Market Trends: Electronic Design Automation, Worldwide 2005

Drawing at nanometer scale

In advanced process technologies the handoff between integrated circuit (IC) layout and manufacturing has changed. In previous technologies, the handoff was a simple check when the design went to manufacturing. Now it is a multi-step process where the layout database is modified so the design can be manufactured. This presents a host of challenges. Issues arise concerning manufacturing process effects, photolithography, data volumes and achieving a cost-effective yield of finished chips from each wafer. To meet these challenges with confidence, design teams turn to the integrated Calibre® design-to-silicon platform from Mentor Graphics, which includes physical verification, full-chip, transistor-level parasitic extraction, design for manufacturability (DFM), mask data preparation (MDP), resolution enhancement technologies (RET) and Design-for-Test (DFT). Every facet of the design-to-silicon transition is efficiently and accurately managed by the Calibre product family. Moving to ever smaller geometries and new process materials causes a fundamental shift in the physical defect spectrum in silicon manufacturing. The Mentor Graphics TestKompress® embedded deterministic test tool helps companies efficiently screen complex devices to identify the new types of failures, while simultaneously reducing the cost of test.

Wolfgang Grimm
Former Director CAD and RET Solutions, Memory Products Division Infineon Technologies
Now at Quimonda

About Nanometer IC and Calibre Design-to-silicon Platform
« Post-processing cycle times for Infineon Memory Products highly customized DRAM layout have been reduced significantly for the 110 nm technology form several days per layer to one day per layer with the integrated Calibre design-to-silicon platform. »
(Stated in 2004)



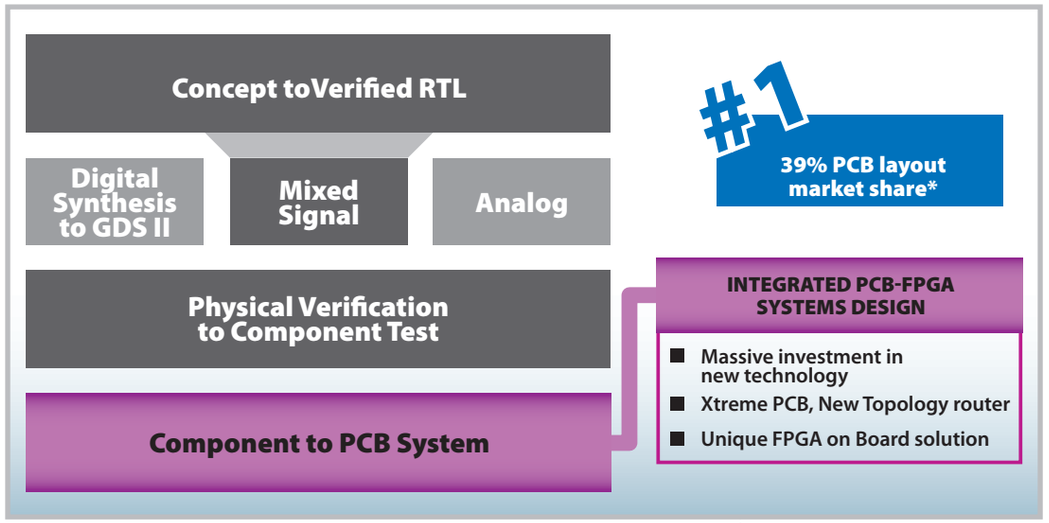
* Gartner/Dataquest Market Trends: Electronic Design Automation, Worldwide 2005

Easing the printed printed circuit creation

As ICs, ASICs (application-specific integrate circuits) and FPGAs (field-programmable gate arrays) become more complex and printed circuit board (PCB) fabrication technology advances to include embedded components and high-density interconnect layers, the design of PCBs is reaching new levels of complexity. These are frequently a source of design bottlenecks. Mentor Graphics is the market and technology leader in PCB design, providing many of the world's largest system design companies today with a range of scalable design solutions to reduce the time, cost and risk of electronic system design: the Expedition™ Series, for the creation of today's most complex PCB designs; the Board Station® family, the market standard solution for the PCB design challenges of the global enterprise; and the PADS® flow, the leading Windows-based solution for complex PCB design. Mentor Graphics also offers solutions for specific design challenges such as high-speed routing and verification advanced packaging, concurrent team design, FPGA-on-board integration and design data management.

Jean-Claude Simon
Hardware Physical Design & Tools Manager
Lannion HW design center (France)
Alcatel-Lucent

About PCB Systems and Expedition PCB
« We never would have succeeded without Mentor's Expedition PCB Design Solution in designing such complex boards within the committed timeframe and constraints. »



* Gartner/Dataquest Market Trends: Electronic Design Automation, Worldwide 2005

Electrical/Electronic Systems Design and Harness Engineering for the transportation industry

Managing today's E/E complexity

A new car now contains 15 percent more electronics than the models of one year ago, in entertainment, navigation and safety systems. As the electrical wiring systems in the transportation industry become increasingly complex, so the need for software solutions to manage this complexity grows. Mentor Graphics offers an unrivalled range of leading-edge solutions being used by OEMs and wire harness manufacturers throughout the world. Mentor's Capital Harness™ Systems is a powerful design environment developed specifically for the wire harness industry, providing a data-centric tool suite for electrical systems and associated harness design.

With over 50 Electronic Control Units (ECUs) connected over multiple networks, OEMs and their suppliers struggle to manage today's complex vehicle network design. Mentor's Volcano tool suite offers network designers a comprehensive tool suite to help manage this complexity. The Volcano Network Architect takes a top down deterministic design approach eliminating expensive network-related warranty costs. Mentor also supplies high quality, low memory footprint In-Vehicle Software (IVS) target packages for CAN, LIN and FlexRay. These tools combined with the Volcano Tellus Test and Measurement tool provides all the network design team needs to be successful.

Embedded Systems Design

Powering up the hardware

Most electronics products today are a synthesis of hardware design and embedded software, and the embedded software is the main differentiator for product functionality and performance. As a result, embedded software has increased dramatically in electronic systems design. Mentor Graphics is the only EDA company to offer design solutions for embedded software. Mentor's Nucleus® software development platform offers a source code with no royalty fees, a real-time operating system (RTOS) and a fully integrated development system. This means that embedded software tools can be developed and tested at the same time as hardware, and can be debugged simultaneously. Furthermore, the simultaneous development enables a «design-in» reliability so that good architectural decisions can be made in both hardware and software development.

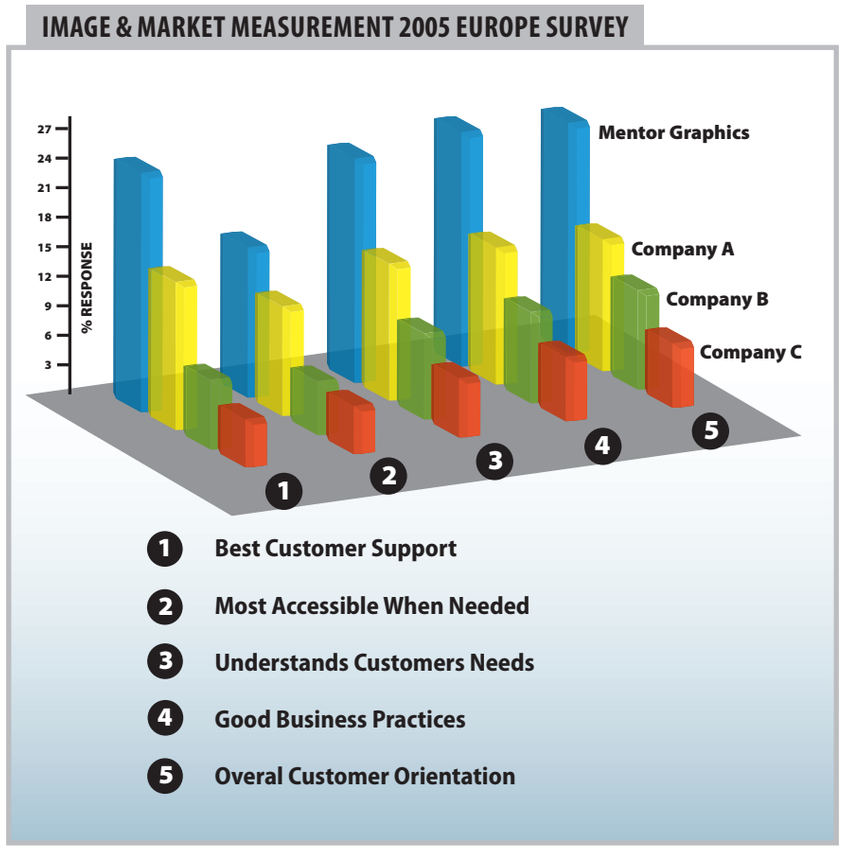
Platform-Based Design

Hardware-Software Co-Design

The growing complexity of systems-on-chips, including increased complexity in commercial blocks of intellectual property (IP) blocks, creates challenges in optimizing the interfaces between a core microprocessor and its peripherals. Platform-based methodology involves building and configuring a design around a stable core platform and connecting by means of standard buses which have been optimized for use with the processor core. The Platform Express™ environment from Mentor Graphics verifies the viability of interfaces in the portion of the design surrounding the embedded processor and its attached peripherals. By automating tedious and error-prone design creation and verification steps, Platform Express shortens product development cycles and allows designers to focus on product differentiators.

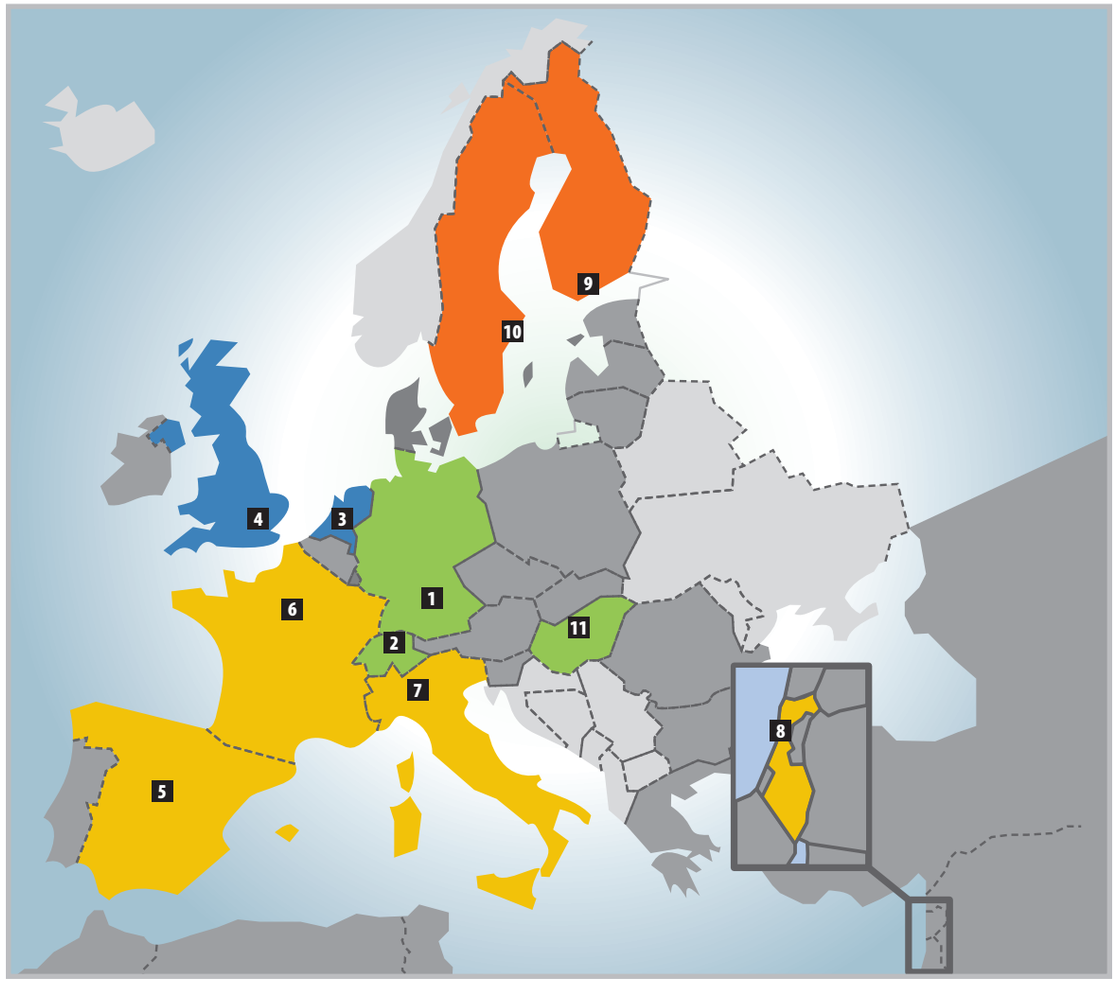
Maximize your efficiency, productivity and effectiveness

Mentor Graphics global customer support organization offers leading customer support solutions online, by phone and in-person, to ensure that customers can find answers to their questions at any hour of the day or night from anywhere in the world. The company's «customer first» approach has resulted in Mentor Graphics being the only EDA company to achieve Support Center Practices (SCP) certification and be an unprecedented five-time winner of the Software Technical Assistance Recognition (STAR) Award from the Service and Support Professionals Association. Mentor Consulting provides expertise in electronic design infrastructures and methodology services and is the only service partner in the industry that invests in the transfer of knowledge to its customers. Their solutions are used worldwide by forward-looking electronics companies to optimize design productivity and advance adoption of the latest industry design best practices. Education Services is focused on developing and delivering quality training to help customers assimilate new tools and technologies into their design environments, increasing productivity and ensuring success on the marketplace.



Blind survey to 2000 Eu EDA users, by EDN Europe

Mentor Graphics
around Europe



www.mentor.com

Central Europe

1 Mentor Graphics GmbH (Deutschland)
Arnulfstrasse 201
80634 Munich, Germany
Phone : +49 89 57096-0
mentor_germany@mentor.com

2 Mentor Graphics AG (Schweiz)
Leutschenbachstraße 45
8050 Zurich , Switzerland
Phone : +41 44 308 60 00
info_chz@mentor.com

11 Mentor Graphics (Hungary) Kft
Montevideo u. 2/C
Budapest, H-1037, Hungary
Phone: +36 1 8887300
info_hungary@mentor.com

Western Europe

3 Mentor Graphics (Netherlands) B.V.
Reactorweg 301
3542 AD Utrecht,
The Netherlands
Phone: +31 30 241 85 00
www.mentor.com/nl/

4 Mentor Graphics (United Kingdom) Ltd.
Rivergate,
Newbury Business Park
London Road,
Newbury, Berkshire
RG14 2QB
United Kingdom
Phone : +44 1635 811 411
www.mentor.co/uk/

Northern Europe

9 Mentor Graphics Oy (Finland)
Metsänneidonkuja 6
02130 Espoo, Finland
Phone : +358 207 459 859
mentor_finland@mentor.com

10 Mentor Graphics AB (Scandinavia)
Kista Science Tower
S-164 51 Kista, Sweden
Phone: +46 (0)8 632 95 00
mentor_scandianvia@mentor.com

Southern Europe

5 Mentor Graphics (España) S.L.
Avda Castilla, 2
Parque Empresarial San Fernando
Edificio Francia
28830 San Fernando de Henares
Madrid, Spain
Phone: +34 91-677-57-85
sales_spain@mentor.com

6 Mentor Graphics Sarl (France)
Immeuble Le Pasteur
13/15 rue Jeanne Braconnier
92360 Meudon La Forêt,
France
Phone : +33 1-4094-7474
mentor_france@mentor.com

7 Mentor Graphics Sarl (France) Sede Italiana
Piazza Montanelli 20
20090 Sesto San Giovanni – Milano,
Italy
Phone : +39 02 24 98 94 1
mentor_italia@mentor.com

8 Mentor Graphics Ltd (Israel)
Ackerstein Tower B, 4th Floor
11 Hamanofim Street
P.O.B. 2155
Herzliya 46120, Israel
Phone : + 972-9-9718655
info_isr@mentor.com

For all other locations, contact Mentor European headquarters

Mentor Graphics (Deutschland) GmbH
Arnulfstrasse 201
80634 Munich, Germany
Phone : +49 89 57096-0
mentor_germany@mentor.com

Mentor Graphics®

www.mentor.com