FORWARD AS ONE
SEMICON® EUROPA

Executive Forum 3

Holistic AIoT in automotive semiconductor value stream

P. Leinenbach
Senior VP of Automotive Electronics
Robert Bosch GmbH, Dresden, Germany

Abstract
Bosch‘s semiconductor business is growing rapidly. To cope with growing demand a new 12“-fab is built in Dresden, Germany. To operate it efficiently at the high cost location, cutting-edge AIoT solutions have been implemented. Combining single AIoT Use Cases to an „AIoT ecosystem“ along the automotive semiconductor value stream enables Bosch a revolution in ramping a new fab: the data driven release of the Dresden fab.

Biography
Dr. Leinenbach has been Senior Vice President of Robert Bosch Semiconductor Manufacturing Co. since 2017. Meanwhile, he serves as Board of Management of Robert Bosch Semiconductor Manufacturing in Dresden.
Dr. Leinenbach was born in Voelklingen Germany on Oct.18th, 1968. He is married. He studied at Research Centre Jülich and graduated in Physics with PhD.

At the crossroad: Strategic considerations for chip manufacturing

S. Herlitschka
CEO and CTO Infineon Technologies Austria AG
Infineon Technologies Austria AG, Villach, Austria

Abstract
The global semiconductor shortage and various initiatives by policy makers have highlighted the new importance of semiconductors. With the Chips Act, European policymakers want to create a state-of-the-art chip ecosystem, putting them on par with other economies in semiconductor manufacturing. In the past year, only two new chip factories have been built in Europe. The presentation shows how the global leading chip manufacturer Infineon Technologies is using new smart factories and cross-site production concepts to serve global customers more flexibly, to increase the resilience in the supply chains and to also strengthen technology sovereignty.

Biography
Sabine Herlitschka is Chief Executive Officer and Chief Technology Officer of Infineon Technologies Austria AG.
Her professional career includes industrial biotechnology research, international cooperation and financing in technology and innovation, Internships at leading organizations in the USA, Fulbright Scholarship at George Washington University and Johns Hopkins University, as well as founding Vice-Rector for Research Management and International Cooperation at the Medical University of Graz, Austria.
Before joining Infineon Technologies Austria, Herlitschka was Director of European and International Programmes in the Austrian Research Promotion Agency. For almost 25 years she has been frequently involved in European Research as advisor, project coordinator and evaluator, as well as participant and Chairperson in strategic European & international expert groups. Amongst others, she has been elected Chair of the Governing Board of the 5 bn Euro European Public Private Partnership ECSEL-Electronic Components and Systems for Electronic Leadership, she is Vice-Chair of the Austrian Council for Research & Technology Cooperation, as well as member of the Senate of the German Fraunhofer Society.
Herlitschka holds a Ph.D. in Food- and Biotechnology and a Master of Business Administration.

Challenges and Opportunities in Semiconductor Packaging

O. Donzella
Executive Vice President
KLA Corporation, San Ramon, United States

Abstract

After few decades being driven by a single end-driver, the semiconductor industry is now the driving force behind a multitude of new data-driven applications, which are revolutionizing our lives.
The diversification of end-demand across several industries, such as network infrastructure, mobile, data computing, and automotive is driving unprecedented demand of semiconductor devices and continuous advancement in the technology roadmap.
For over 50 years, Moore's Law dictated the pace of this roadmap with the ability of scaling transistor density every 2 years. While lateral scaling is still happening in frontend semiconductor fabrication, it's also becoming more and more expensive, requiring new ways to optimize performance vs. costs.
In the last few years, the role of IC packaging technology has shifted from protection to performance enablement with the rise of advanced flip chip, wafer level packaging and heterogenous integration.
We will continue to see a steep increase in new packaging types and, with interconnect geometry scaling and disaggregation into chiplets, each die will become the weakest link in the new multi-die integrated packages, requiring drastic improvements in process control and sorting methodologies.
More than 25 years ago, KLA brought a new vision into frontend semiconductor fabrication with in-line monitoring. Few companies initially embraced this concept to accelerate yield improvement, but few years later, it has eventually become an industry standard. This is what is happening in packaging right now. Only with a more rigorous process control methodology, bumping and assembly lines can overcome the unprecedented challenges with technology shrink and multiple die integration.
In 2020, KLA introduced the new Electronics, Packaging, and Components (EPC) group to help new industries, such as packaging, to adopt the frontend semiconductor best practices in terms of process control methodologies and process technologies. In the last several months, EPC organization has been working close to the top IDMs, foundries and OSATs to target the most critical challenges and develop a portfolio of products and solutions that will help the packaging industry to advance and become a key enabler of semiconductor technology roadmap.

Biography

Oreste Donzella serves as Executive Vice President of the Electronics, Packaging and Component (EPC) business group at KLA Corporation, which include multiple product divisions, targeting growth opportunities in specialty semiconductors, packaging, printed circuit board and display markets.
Previously, Oreste was the Chief Marketing Officer (CMO) of KLA. In this role, he oversaw corporate marketing activities, market analytics and forecast, and company-wide collaborations with the broad electronics industry.
Prior to his CMO role, Oreste led the world-wide field applications engineering team, and was responsible for Customer Engagement projects and product portfolio optimization for wafer inspection platforms at KLA.
Previously, Oreste was Vice President and General Manager of the Surfscan and SWIFT divisions at KLA-Tencor. In these positions, Oreste was responsible for the unpatterned wafer inspection, wafer geometry, and macro inspection business, overseeing new products development, sales, and marketing activities, customer support, and ultimately, division financial performance (P&L).
Oreste brings 28 years of experience in the semiconductor industry. Prior to joining KLA in 1999, he spent more than six years at Texas Instruments and Micron Technology, holding engineering and management positions in the process integration and yield enhancement departments.
Oreste currently serves in SEMI North America advisory board.
Oreste earned his master's degree in electrical engineering from the University La Sapienza in Rome, Italy.