

POST EVENT REPORT



IESA Vision Summit - India Embedded Electronics Show 2022

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OCTOBER, 2022

The Lalit Ashok, Bengaluru

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The 17th edition of IESA's flagship event – Vision Summit, titled as “India Embedded Electronics Show” brought most of the Semiconductor and ESDM companies from India and the world under one roof. The theme of the summit was "Roadmap to make India the electronics and Semiconductor nation in this decade"

The objective of the event was to bring the global thought leaders to discuss and strategize and commit that they will enable the Design & Manufacture in India and demonstrate to the world through the mega exhibition that it has already started.

The 2-day event was powerpacked with the keynotes from the global leaders of Indian and MNC companies. As many as 6 CXO's discussed the challenges and opportunities the new decade provides for India. The panel discussions were quite insightful and informative, the presence of global associations like SIA send the message to all that the India Electronics and semiconductor is on the front burner for many nations. The exhibition showcased innovation from industry and the start-up ecosystem and it gave opportunities to Indian Brands of electronic products to showcase their products and solutions to a larger global audience. The event aimed to showcase the ecosystem partners as well who would help MAKE IN INDIA to happen.

From the statistics, I reckon that the IESA Vision Summit - India Embedded Electronics Show 2022, being held after a hiatus of almost 3 years was a grand success! The event organised with the patronage of major industry stalwarts, our Executive Council members, government executives officers, and many associations.

We are grateful to receive support from the Government with the virtual presence of Hon. Shri Rajeev Rajeev Chandrasekhar, who gave the inaugural address sharing the current state and future plans of Gol. The government has received proposals from five companies for setting up electronic chip and display manufacturing plants with investment of Rs 1.53 lakh crore.

The report, titled 'State preparedness index for electronics systems design and manufacturing', prepared by IESA was released by Dr. CN Ashwath Narayan, Hon. Minister of Electronics, Govt. of Karnataka. Other eminent presence from the government included Dr. E V Ramana Reddy, Addl Chief Secretary, Govt. of Karnataka, Shri. Saurabh Gaur, Secretary Electronics & IT, Govt. of Andhra Pradesh, Shri. Manoj Kumar Mishra, Secretary Electronics & IT, Govt. of Odisha, Shri. Hari Kishore, Director Industry & Commerce, Govt. of Kerala.

Mr. Anirudh Devagan, CEO of Cadence, Mr. Lars Reger CTO of NXP, Mr. Satish Dhanasekaran, President & CEO Keysight Technologies, Dr. Prabu Raja, SVP, Semiconductor Product Group, Applied Materials Inc, Mr. Khurram Ismail - SVP, Flash product Engineering, Western Digital Technologies Inc., Mr. Ravi Subramanian, GM Corporate staff, System Designs Group, Synopsys, Mr. Rangesh Raghavan VP, Lam Research, Mr. Vivek Bansal of VVDN were some of the Industry stalwarts.

We thank all the industry partners, sponsors and exhibitors and all the attendees for making this the largest platform for Electronics & Semicon ecosystem discussions. We at IESA are highly motivated to make India the Electronics & Semicon Nation.

Best Regards,
Krishna Moorthy
President & CEO, IESA

HIGHLIGHTS

50+

Sponsors

100+

Exhibitors

55+

Speakers

700+

Delegates

1300+

Visitors

Highlights from Industry Sessions

Automotive and EV

Automobile is functionality to lifestyle and display is enabler of Lifestyle. Connected vehicles and their digital twins in the cloud requires high level of hardware-software harmonisation. With so many sensors, and connected technology, central compute technology is a must.

Communication inside and around the vehicle is changing, this will change on how you use will use the car in future.

India needs to build its own automotive eco-system due to battery policy, MSME & regulatory ecosystem, specific geographical requirements. India has significant share in 2W market globally and will continue to be world's leader. Companies in India are working on functional safety. We see local opportunity for BMS safe 2W EV in India.

Factors for complete manufacturing include:

- Public-private partnerships
- Clean water, minerals & metals
- R&D and safety cannot be compromised
- Competitiveness in city – eco-geography

Next Gen Semiconductor Design Technologies - The India Context

There is a big debate in the industry on Moore's law – whether it will continue to exist. As per most of the panellist its very much relevant and here to stay. There is a paradigm shift with data. The big picture needs to be reflected in the architectural changes as big data needs big compute. Traditional verification systems are incapable of handling Zetabyte data. AI is now playing an important role in Design Space Optimisation (DSO) and Verification Space Optimisation(VSO). DSO-AI offers libraries, ECO cycle, migration to new nodes while VSO-AI suggests how to increase stimulus diversity, how to get to the root-cause of any problem.

Digital Twin which is replica of physical layer is now been extensively thought about. Software based simulations have been into existence, but with new technology and concepts, the software content has improved manifold. Smaller problems can be easily addressed by EDA tools, however we need novel, much-integrated way to solve some of the problems.

Factors boosting next generation design:

- 5G is the new inflection point
- Host of applications will come up due to 5G (the IoT kind of applications)
- Automation is everywhere
- Real-time data monitoring and processing

Data Centres & IT Infrastructure

India is uniquely positioned with 1.2B wireless subscribers, 2.2B networked devices and internet users, social media users and gamers creating immense amount of data every day, every minute. India has the world's largest per capita data consumption. We are just constraint by what we are storing today. With advent of 5G the value of data is realised and it will drive the next industrial revolution.

Edge computing plays a very crucial role in satisfying the data processing and the speed requirements. We need high performance computing servers. These servers consume a lot of energy, so energy efficient solution is a big challenge.

Another challenge is the telecom network infrastructure. Some cities have good fibre optic network while in others, it's difficult to build the infra.

Data Security & Cyber Security pose another typical challenge.

Post-pandemic, digitalization has increased because of hyperscalers like Google, Amazon, Netflix.

Forward looking solutions:

- Industry is researching on sustainable solutions and liquid immersion cooling technology to address the energy consumption challenge.
- Innovation in SSD – use case in DC is getting diverse, need different SSD for boot and different for compute.
- Flash 3D NAND technology adds vertical layers of storage tiers—up to 64 at present—on top of the NAND die, which enables the chip to scale to much higher densities than have previously.
- Data Protection & Data Localisation – In connected world its very difficult to localise the data. So the focus should not be on where the data is stored, but who owns the data.

Highlights from Industry Sessions

Semiconductor Supply Chain

The pandemic situation was an eye-opener for industry in terms of importance of semiconductor supply chain. The challenges were accelerated by the geo-political situation. As per the panellist the shortage will continue however we need to focus on planning strategically mitigating the issues.

India has an excellent opportunity to become the Power Electronics Hub of the world. If we want to grow semiconductor in country, we need to grow electronics and need great consumers as well.

Why do we see challenge yet opportunities in India?

- The geo-political situation demands us to be self-reliant
- Government of India is completely supporting. No other government has given 50% subsidy in the world for semiconductor manufacturing
- India is very strong in design and has great talent pool
- State governments are creating technology clusters which are needed for robust ecosystem
- India needs to take smaller bites and have controlled approach – especially focusing on matured nodes and assembly and packaging
- There is lot of development and requirement in Si-Carbide and GaN
- Collaborative Partnerships & Standardisation will be the driving force. Main reasons for collaboration
 - i. High Capex
 - ii. Operational Cost
 - iii. Cost of production is very high, so if there is not enough demand within India, then the capacities will be under-utilised
- Like-minded people should work together to succeed together

Semiconductor Manufacturing

India has a vast use-case when it comes to consumption of semiconductors. All industries have unique demand. We experienced shortage and semicon crisis during pandemic but that was not applicable for all nodes. The demand for certain specific nm node was more than the others. This led to the SCM crisis.

Semicon manufacturing requires not just silicon but also chemicals, gases, clean water and specific environment. And there are not many suppliers of other resources. Thus, collaboration and collective wisdom is very important. Good news is we are in nice spot – with Govt. supporting and infrastructure growing tremendously.

Key Suggestions:

- Focus on cluster and eco-system approach
- Collaborations with Ecosystem enablers
- Design fabrication facility as per policy and need, not just working towards future node technologies
- Invest more in system design

Academia & Skill Development

In India as well as globally, unemployment is lesser of a problem than “unemployability.” Global market size is \$483 in 2022 and is expected to touch \$893 in 2029. There are rising opportunities for direct jobs, indirect jobs and induced jobs. But the challenge lies in skill-sets. Technology is evolving fast and design methods are changing rapidly. So the learning and upskilling is a continuous process.

Organisations are now giving CSR funds towards EDA tools distribution in university and engineering colleges.

Some of the challenges discussed during the panel:

- Traditional teaching method, traditional tools & syllabus
- Lack of active collaboration between Academia & Industry (beyond the promise of setting up lab and providing tools)
- Lack of R&D eco-system

Suggested solutions:

- Short courses directly based on industry requirement
- Enhancement of BTech/ BE curriculum by industry experts
- Free tools & equipments
- Industry driven training & placement
- Open source based skilling
- Internships

Message from EC Members



Mr. Vivek Tyagi

*Chairman,
IESA*

The vision summit this year was very unique in many ways. First of all, it was held in person after two and a half years, and secondly, 700 attendees attended in-person along with hundreds who attended online. Thirdly, our conference was accompanied by one of the largest exhibitions with more than 90+ exhibitors booths from our members, state governments, MeitY, and many other associations. All in all, this year's Vision Summit was a very successful and very unique ESDM Show.



Mr. Sunny Malhotra

*EC Member - IESA, Advisor,
Toyota Tsusho Nexty Electronics*

Throughout the event, I was very impressed by the immense amount of participation and energy. People were not just participating for the sake of participating, but were actually getting involved. There was a palpable sense of excitement in the ESDM industry for the Vision Summit. This was one of the most successful industry events after Covid, with a lot of interaction and rising partnerships.



Mr. Pradip Thaker

*Country Head & VP, Engineering
Marvell Semiconductor*

The main focus of Vision Summit were the exhibition held and particularly the participation of State Governments. As part of preparations for next year's Vision Summit, we will look for ways to strengthen the relationship with the academia in preparation for reaching out to all the academics. Every year VS brings together industries, innovators, entrepreneurs, SMEs, startups, leaders, and entrepreneurs. To come together under one platform and participate in such a meaningful way is a wonderful experience for all of us.



Dr. Sreeram Srinivasan

*CEO,
Syrma SGS Technology*

VS22 for me lived up to all my expectations and more. The curtain raiser itself was an intense and insightful sessions and gave us a sense of what we were up to next 2 days. Day one started with some path-breaking stuff being presented and by end of the long day we had so much to take in. The speakers were absolutely amazing with their insights. Day two was also very exciting though it began more soberly after a long Day One but warmed up quite well. Overall a great VS22 and kudos to KK and his super energetic team. Looking forward already to VS23!



Mr. Naresh Rana

*Sr Manager - Enterprise and Embedded - India,
Western Digital Technologies Inc.*

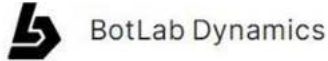
This year "Vision Sumit - India Embedded Electronics Show" was India's only "one of its kind" Expo and Conference dedicated to Semiconductor & ESDM fraternity. Visionary keynotes from top semicon executives of the world and booths showcasing reference designs and solutions, made Vision Summit as the "numero uno" summit for technology industry.

TECHNOVATION AWARD

We received 100+ nominations

Category: Start-up

Sub-Category: Product
Drone Fleet



Sub-Category: IOT
Surveillance & Operation Solutions



Sub-Category: Healthcare
Assistive Healthcare Solution



Sub-Category: Wireless
Gigasat Radios



Sub-Category: Industrial
Autonomous Underwater Vehicle



Sub-Category: Semicon
R & D



Category: MSME

Test & Measurement Solutions



Category: Enterprise

Best MNC in India



Best Enterprise in India



OSAT Service



Individual Awards



Dr. Sarabhai Award

Prof. Ajay K. Sood

Principal Scientific Adviser to the
Government of India



**Techno Visionary,
Public Service**

Mr. Saurabh Gaur

IAS, Secretary,
Govt of Andhra Pradesh



**Techno Visionary,
Industry**

Mr. Sandeep Tandon

Excutive chairman,
Syrrma SGS



**Techno Visionary,
Global**

Dr. Vishwani D. Agrawal

James J. Danaher Professor of ECE,
Auburn University



**Outstanding Contributions
to India's ESDM Sector**

Dr. Satya Gupta

Founder & CEO,
EPIC Foundation



**Outstanding Contributions
in Fabless Semiconductor
Ecosystem in India**

**Mr. Muthukrishnan
Chinnasamy**

CEO, SFAL



Techno Mentor

Prof. Shanti Bhattacharya

Applied Optics Group, EE,
IIT - Madras

MORE INSPIRATIONAL SPEAKERS



Dr. Anirudh Devgan
CEO,
Cadence Design Systems Inc.



Mr. Lars Regar
EVP and CTO,
NXP Semiconductors N. V.



Mr. John Neuffer
President and CEO,
SIA, USA



Mr. Satish Dhanasekaran
President & Chief Executive Officer,
Keysight Technologies



Mr. Sandeep Tandon
Executive Chairman,
Syrma SGS



Mr. Khurram Ismail
Senior VP, FPE,
Western Digital Technologies Inc.



Mr. Ravi Subramanian
GM, Corporate Staff,
System Design Group
Synopsys Inc.



Shri. Arvind Kumar
Director General,
Software Technology Parks of India



Dr. Prabu Raja
Senior Vice President,
Applied Materials Inc.



Mr. Rangesh Raghavan
Corporate Vice President
& GM, India,
Lam Research Corporation



Mr. Sanjay Gupta
VP & Managing Director, India,
NXP



Mr. Dominic David
President,
KLA India Operations



Mr. Puneet agarwal
Founder and CEO,
VVDN Technologies



Prof. Madan Mohan Tripathi
Director General NIELIT
National Institute Of Electronics &
Information Technology (NIELIT)



Mr. Tobby Simon
Global Policy Expert, President,
Synergia Group



Mr. Shitendra Bhattacharya
Country Head(Sales) - India
Strategic & Enterprise Business
National Instruments



Mr. Amardeep Punhani
Senior Director R&D,Digital Design,
NXP



Ms. Constanz Hufenbeher
CDTO, Member of Board of directors,
Infineon Technologies AG



Mr. Manoj Kumar Mishra
Secretary, Electronics & IT,
Govt of Odisha



Dr. E V Ramana Reddy
Additional Chief Secretary,
Govt of Karnataka



Ms. Meena Nagaraj
IAS, Director Electronics, Information
Technology and Biotechnology,
Govt of Karnataka



Mr. V Raghunanandan
Secretary,
TRAI New Delhi (Telecom
Regulatory Authority of India)



Ms. Tammy Ben Haim
Consul General
Israel



Ms. Namratha Jaisimha
Vice President - Design, Verification
and Validation,
NXP Semiconductors

Celebrating Diversity

Women also love “Chips”

While addressing the gathering, Smt. Meena Nagaraj CN, IAS, stated that she has attended many diversity events, but this was the first in ESDM sector and congratulated IESA for the same. She also said that there has been acceptance and change in the engineering side to employ women. Very recently companies like GE, Volvo, Schneider have inaugurated their shopfloors of 100% women employees. “Government is making conscious efforts to ensure that women participation increases. In the new engineering research & design policy, the Govt. has allocated 33% PhD funding for women engineers” shared Meena ji. “We need to encourage companies in hiring diversity, candidates. Today, companies are putting in lot of efforts to have diverse workforce unlike 30 years ago. But we need to make sure, this continues. Another thing that companies need to concentrate is on retention of women at work, especially focus on opportunities to bring women back to work after handling family situation” shared Ms. Namratha Jaisimha, VP- Design, Verification & Validation at NXP Semiconductors.



Ms. Namratha Jaisimha
Vice President - Design,
Verification and Validation,
NXP Semiconductors



Ms. Meena Nagaraj C.N.
IAS, Director Electronics, Information
Technology and Biotechnology,
Govt of Karnataka

Felicitations of women leaders & mentors



Ms. Lopa Mishra Jana
CEO,
EP Bhubaneswar



Ms. Rituparna Mondal
General Manager,
MediaTek



Ms. Sunita Verma
Group Co-Ordinator R&D,
MeitY



Ms. Neha Satak
Co Founder & CEO,
Astrome Technologies

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TECHNOVATION AWARD



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Announcements at VS - IEES 2022

Govt likely to clear semiconductor unit proposals in next 30 - 60 days



The government is likely to start approving proposals to set up electronic chip and display manufacturing plants in the country in next 30 - 60 days, Minister of State for Electronics and IT Rajeev Chandrasekhar said during the inaugural address. The government has received proposals from five companies for setting up electronic chip and display manufacturing plants with investment of Rs 1.53 lakh crore. He said a great deal of interest is there in the industry and there are several proposals ranging from investment in wafer fabrication plants to silicon compounds to packaging and testing.

Release of Report titled "State preparedness index for electronics systems design and manufacturing"

The report was prepared by the data collated on five key parameters and several sub parameters for the top 20 states in India. The main parameters were current and future ESDM potential of states in terms of infrastructure, geographical advantage, prevailing business client, human capital and governance policies.

According to the report, Karnataka, Gujarat, Maharashtra, UP, Telangana, Tamil Nadu and Odisha are leading the way in creating a conducive ecosystem for ESDM.



Virtual Forest has entered into a three-year collaboration with Arrow Electronics to develop, market, and distribute 3-15 KW Motor controllers for two and three-wheeler electric vehicles (EVs). The MOU was signed during the IESA vision summit 2022 in presence of Bhartendu Mishra (General Manager and country head of Arrow Electronics India), Omer Basit CEO of Virtual Forest along with other senior leaders.



d-Matrix announced the opening of its R&D center. Founded by semiconductor veterans from Silicon Valley, Sid Sheth, and Sudeep Bhoja, d-Matrix is building a one-of-a-kind datacentre, AI inferencing platform using a software-first approach coupled with path-breaking hardware innovations in the areas of in-memory computing (IMC) and chiplet level scale-out interconnects.



Mr. Shitendra Bhattacharya, Country Head India NI today announced the expansion of Engineering Innovation Center (EIC) to promote innovation and growth in the semiconductor industry for MSMe and startups. The announcements was made in the presence of Mr. Vivek Tyagi, Chairman IESA at IESA.

Glimpses of VS - IEES 2022



Glimpses of VS - IEES 2022



Save the Date

**IESA Vision Summit - India
Embedded Electronics Show 2023**

13th & 14th* September, 2023

