

Semiconductor industry in transition

Since the early sixties, the semiconductor market has shown an average steady growth rate of 15%, with applications in the automotive industry, telecommunication and information technology acting as major market drivers. With a volume of 204US\$ bn, the market witnessed its peak in 2000, only to be immediately followed by a critical slump of -32% the next year. 2002 saw an essentially no growth situation of 1%. For 2003, we face highly diverse growth forecasts ranging between 11-19.8%, which indicate that the longest semiconductor crisis ever has by far not yet been sustainably overcome. Alongside overall economic uncertainties, no outstanding innovative application has yet emerged which could act as the driver for fast market growth and allow the industry to return to its previous average growth rates.

In the light of these unclear market prospects, it is all the more important to structure the work of our association along clear and common objectives.

Our review of the **2002 objectives** showed that most were attained. The most significant ones were:

- Strengthening the capabilities in the ESH area by establishing new groups and employing a new Policy Advisor to facilitate a stronger focus on European legislation.
- The important lead exemption was included in the RoHS Directive.
- Under the chairmanship of ESIA within the WSC, a paper was finalized containing important recommendations on improving antidumping regulation, as part of the semiconductor contribution to the Doha Development Agenda trade negotiations.
- ESIA proposals to remove semiconductor-related products from the EU's FSC retaliation list were accepted by the Commission.
- The WSTS License Agreement was set up, together with the monthly issuing of widely used press releases on market development.
- With the exception of two countries, diffusion-based new Preferential Rules of Origin for semiconductors have now been implemented in Europe, due largely to our continuous follow-up.

For **2003 our objectives**, finalised by the European Semiconductor Council, include:

- The hosting of the World Semiconductor Council in Nice in May and the 10th ISESH conference in Noordwijk in July - the two central activities for the first half of this year.
- The efforts invested into the completion of the Paper "*Principles and recommendation to Government/Authorities concerning Fair & Effective Antidumping Measures in the Semiconductor Industry*" will only have been worthwhile, once it is accepted as input into the Doha Agenda by the governments and authorities of the regions represented in the WSC.
- As the semiconductor industry will be heavily affected by the EU's "New Chemicals Policy", but does not see itself as the prime target of this policy, ESIA needs to work with EU authorities to find solutions which will not jeopardize the future of the industry in Europe.
- The scope of an ESIA Statistics Workgroup is to be extended in order to provide regular supporting data on the importance of our industry.

Together with our members, I will continue to strive for a successful achievement of these objectives to help the industry overcome this still difficult period.



Dr. Ulrich Schumacher,
President EECA-ESIA

The European Semiconductor Market in 2002

By Merten Koolen

2002 WORLDWIDE SEMICONDUCTOR VENDOR RANKINGS

| 2001 Rank | 2002 Rank | | revenues (MU\$) | growth % |
|-----------|-----------|-------------------------------|-----------------|-------------|
| 1 | 1 | Intel | 25,263 | 1.4 |
| 4 | 2 | Samsung Electronics | 8,630 | 36.7 |
| 2 | 3 | Toshiba | 6,450 | -2.7 |
| 3 | 4 | STMicroelectronics | 6,354 | -0.1 |
| 5 | 5 | Texas Instruments | 6,240 | 3.1 |
| 6 | 6 | NEC Electronics | 5,689 | 5.6 |
| 10 | 7 | Infineon Technologies | 5,252 | 21.4 |
| 7 | 8 | Motorola | 4,781 | 0.8 |
| 9 | 9 | Philips Semiconductors | 4,363 | -0.9 |
| 8 | 10 | Hitachi | 4,122 | -12.7 |

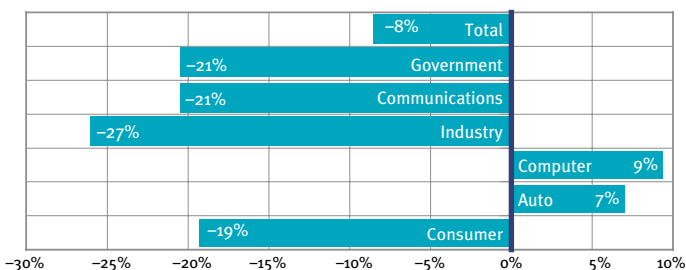
Source: Gartner Dataquest, March 2003

EUROPEAN MARKET DEVELOPMENT

| EUROPE 2002 | market M\$ | growth yr/yr % | share of total % |
|----------------------|------------|----------------|------------------|
| Analog | 5,184 | -10.3 | 19 |
| Digital Bipolar | 37 | -64.8 | 0 |
| MOS Memory | 4,870 | -2.4 | 18 |
| MPU | 6,092 | -2.9 | 22 |
| MCU | 2,567 | -5.4 | 9 |
| DSP | 1,257 | 16.2 | 5 |
| MOS Logic | 3,807 | -20.6 | 14 |
| Discretes | 2,405 | -8.4 | 9 |
| Sensors | 564 | 13.0 | 2 |
| Optoelectronics | 1,007 | -25.6 | 4 |
| Total Semiconductors | 27,789 | -8.0 | 100 |

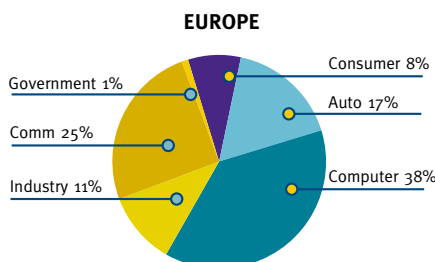
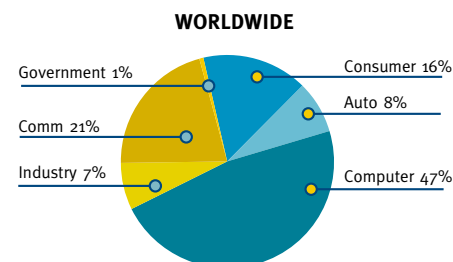
Source: WSTS

WORLDWIDE SEMICONDUCTOR MARKET GROWTH 2002



Source: WSTS

APPLICATION SHARE OF TOTAL MARKET IN % 2002



Source: WSTS

The year 2002 saw the start of a recovery for the semiconductor industry after the strong decline of 2001. On a worldwide basis, 2002 has in fact seen consistent quarter-on-quarter growth, even if on an annual basis, the recovery seems almost non-existent (1% 2002 worldwide).

WSTS data shows significant differences between the various regions around the world. Asia Pacific has clearly led the recovery, with a growth of 28.5% for the total year, while all other regions have shown a further decline in 2002.

Consequently, there has been a dramatic shift in the relative size of regional semiconductor markets around the world in 2001 and 2002. Asia Pacific is now the largest semiconductor market in the world, with 36% of the total market. **Europe has held its ground and currently constitutes about 20% of the total world market.**

The European semiconductor market in 2002 declined by 8%, with a total market size of 27.8 US\$ bn in 2002. Positive market developments in 2002 were registered for DRAM (+39.5%), DSP (+16.2%) and sensors (+13%). However, as these products in total account for only 4.5 US\$ bn of the total European market, their positive contribution was not enough to offset declines in other categories, such as MPU and MCU, which decreased moderately by 2.9% and 5.4% respectively. Discretes also declined by 8.4%, and Analog by 10.3%. The total logic market decreased by 20.7%. Furthermore, Optoelectronics and Flash Memory added to the overall downturn, with negative growth figures of -25.6 and -21.3% respectively. (See table).

From an application perspective, 2002 highlights were the growth in the automotive and computer segments. Automotive remains an important application segment, with a share of 17% of the European market, versus 8% on a global level. Communication and consumer markets developed less favorably in 2002, with declines of 21 and 19% respectively.

The strong market decline in 2001 and only moderate growth figures for 2002 continue to provide a challenging environment for semiconductor manufacturers. This situation provides the background to a global industry trend towards cooperation and consolidation. In Europe there are noticeable examples of such agreements, the most prominent examples being the expansion of the joint effort of *STM* and *Philips* in Crolles (France) with *TSMC* and *Motorola* (announced in April 2002), as well as the acquisitions of *Ericsson Microelectronics* by *Infineon* and of *Alcatel Microelectronics* by *STM*. Similar developments can also be observed in other regions, e.g. in Japan.

Despite this difficult environment, European Semiconductor companies have again performed well in 2002. According to the semiconductor rankings as issued by Gartner Dataquest, *Infineon* improved its position and now holds 7th place. *Philips* maintained its number 9 position, and *STM* ended in 4th place.

Merten Koolen is a Member of the Board of EECA-ESIA and chairs the Statistics' Committee

Changing the Rules of Origin for Integrated Circuits (ICs)

By Craig Burchell

The European semiconductor industry's continued success depends not only on advancing technology, but also on updating costly customs rules. The case of the rules of origin for ICs is one example where the IC industry worked with governments and authorities to take on the rules and in the end changed them. It was a mammoth task taking 18 months to agree the changes, but a frustrating two and a half years pressing for implementation. Industry has to continue these initiatives to build better framework conditions which support our business. **The case showed that industry and authorities can cooperate to promote European-based industry, but serious procedural delays have to be addressed.**

THE ISSUE

The issue itself was a relatively simple affair: **change the rules so that the high-end, high-value diffusion process would define EU origin instead of the low-end, low-cost, back-end processing.** This would enable semiconductor devices to retain a 'Made in Europe' label, while enabling worldwide packaging; a far more appropriate solution which better reflects the realities of a globally operating industry. However, the task involved working together with 26 governments, and keeping up momentum on a long march over a pathway of setbacks, involving often slow and cumbersome bureaucratic procedures, and some monumental delays due to official translations and parliamentary procedures.

THE INITIATIVE

As the negative effects of the rules became more obvious in autumn 1998, industry decided to take action. A core document with a specific solution was drafted, translated into several languages and presented to every government in the pan-European zone as part of a carefully planned and executed campaign within EECA-ESIA, all members working together to build the necessary momentum for change. The first step was to engage the European Commission, specifically by requesting and winning the support of both DG Enterprise and DG Taxud.

The issue also affected European manufacturers of products incorporating ICs, so the issue was introduced to the Trade Policy committee of EICTA, the European association representing the Information Technology and Consumer Electronics Industry. For many of them the EU Origin IC would be critical to determine EU origin of the finished product, for others it would provide greater competitive flexibility. Examples of the benefits to manufacturers of a wide variety of goods from toys to motor industry electronics and all in between, was a strong addition to the campaign material as it consolidated the reasons for many governments to support the changes.

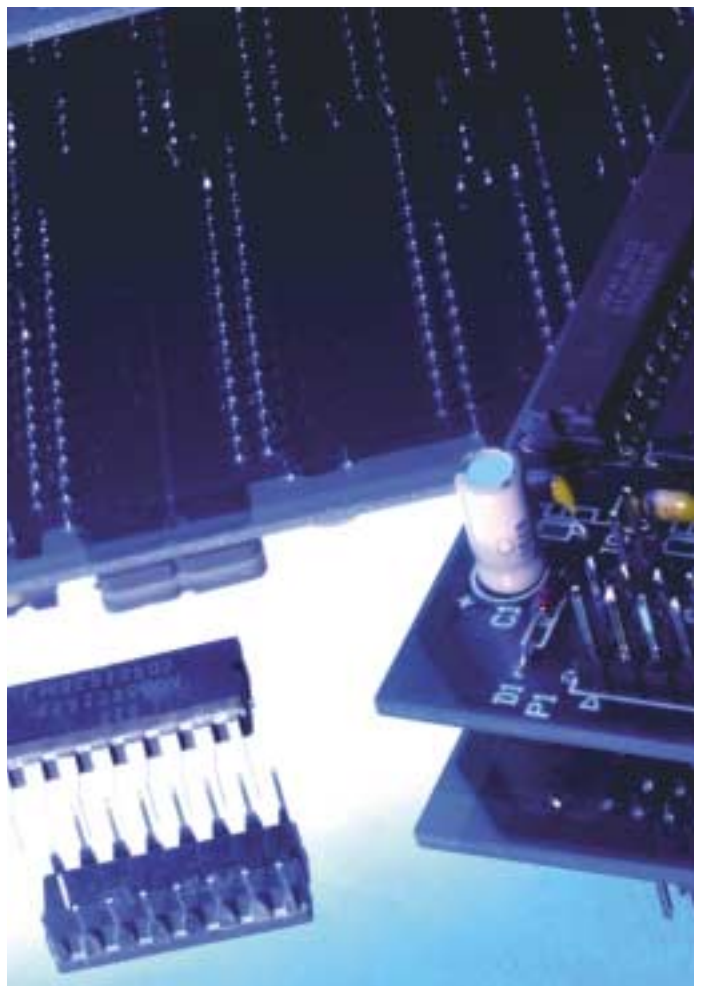
What followed was a series of meetings with governments all across Europe. National origin experts quickly recognised the importance of changing the rules and cooperated in bringing the issue up the list of priorities of the committee preparing Council decisions on origin

issues. The key objective was a decision of the Extended Origin Rules Committee of the governments which are members of the pan-European zone (EU, EFTA and Central Europe).

THE RESULT

Changes to the origin rules are traditionally made in batches, so for the changes to be implemented by 1 January 2002 an agreement within the Origin Committee had to come in the meetings of March and April 2001. After some tense last-minute debates, the Committee voted in favour of the proposal; the most significant objective was achieved, but the longest and most frustrating part was about to begin. The next step was a formal decision of the Council. What followed was a painful delay of more than a year with the translation service of the Commission. The issue was also promoted higher up in the Commission and Council Secretariat. For EU and EFTA countries implementation began (retroactively) as of July 2002, for countries of Central & Eastern Europe January and March 2003 were implementation dates. To date, there are still two countries where implementation has not yet taken place. **After a long and laborious process, the outcome is finally positive and members can soon take full advantage of the new rules.**

Craig Burchell is Vice-President for International Trade of the Philips Electronics Group



Chemical Stewardship in Semiconductor Device Manufacturing

By Shane Harte



In the light of the EU's upcoming new chemicals' legislation, part of ESIA's recent activities have aimed towards outlining to EU authorities how the semiconductor industry deals with chemicals in its production processes. This article provides an **overview of the nature of chemicals used in semiconductor manufacturing and of the chemical stewardship process undertaken by European semiconductor manufacturers.** The stewardship process involves strict chemical management programmes, engineering controls and the use of 'contained chemical handling systems', all of which contribute to limiting the potential exposure to the environment and the employee. **Legislation should be proportionate to this minimal exposure risk**

NATURE OF CHEMICALS IN SEMICONDUCTOR MANUFACTURING

Semiconductor device manufacturing is characterised by the use of low volume speciality chemicals with critical functions in the manufacturing process. Around 100 - 150 substances (chemicals and mixtures) are used in the production of a single semiconductor, whilst roughly 2000 different chemicals and mixtures are used in the sector as a whole. Single constituent bulk chemicals are typically purchased from chemical manufacturers, whereas special mixtures and formulations are obtained from third parties (blenders and equipment manufacturers). The majority of the substances used by the semiconductor industry are from suppliers who are not manufacturers of the substances themselves. Whilst the industry is constantly striving to identify substitute chemicals and substances, for the most part there are none readily available. Some substances, such as dopants e.g. arsenic compounds, are irreplaceable and are a vital element in the production of semiconductor devices, due to arsenic's specific ability to influence the conducting properties of silicon. Organic solvents and in particular special polymers are further substances that also provide unique functions.

ELEMENTS OF CHEMICAL STEWARDSHIP

One key aspect of the semiconductor industry's approach to the use of chemicals has been the adoption of chemical management programmes to fully assess the Environmental, Safety and Health (ESH) impact of proposed new chemicals and gases. This assessment covers how chemicals are created, used, reused and properly

disposed. These programmes are continuously updated to include the most current information available on major constituents of chemical formulations and their potential hazardous properties. The chemical selection process aims to prevent the use of hazardous or substances of high concern. However, in some cases application of harmful chemicals is inevitable, since there are no known or proven alternatives. In those cases all possible efforts are directed to minimise the exposure risk for employees and environment. This is achieved by the creation of 'contained industrial systems' in the semiconductor production modules. **These systems are almost completely isolated from employees and the environment, thus attaining a minimal to zero exposure risk.** Alongside these, selection and screening elements, the chemical management programmes involve;

- highly trained emergency response teams; and
- employee training on chemical hazards and use of personal protective equipment.

In addition to chemical management programmes, engineering controls also play an important part in the chemical stewardship process and are used widely in manufacturing sites to minimise employee exposure to hazardous substances. These controls include 'contained chemical handling systems', 'double containment' piping systems, and most important of all, Local Exhaust Ventilation (LEV) to remove vapours and fumes generated by various processes. The combination of LEV and wafer auto-handling systems provide a safe operating system and ensure that employee exposure to chemicals is minimised.



Delegates at the ESH Task Force meeting (WSC) in Seoul, Korea, February 2003

Chemical stewardship forms an important part of the industries' all-round responsible, proactive and voluntaristic approach to ESH issues. It follows **the underlining belief that overly restrictive chemicals' legislation will impact upon the production process of a semiconductor industry, which has continuously made substantial efforts to minimise the potential risks of chemicals used in the production process.**

ESIA's role in the World Semiconductor Council's (WSC) voluntary commitment to reduce emissions of PFC gases by 10% by 2010 is a further example of what the sector can achieve not only at European, but also global level in the field of ESH.

This article is adapted from the ESIA's Chemical Stewardship document, which was prepared within the ESH Committee.

Shane Harte is ESIA's ESH Policy Advisor

The role of the National Associations within ESIA

By Martin Spät



ESIA and the 'mixed membership' association model

There are currently around 950 European business groups in the EU, each with their own distinct organisational structure. However, three broad organisational models exist: a 'federation', a 'direct membership' and a 'mixed membership' model. The first and most common model (58%) sees traditionally strong and well-connected National Associations forming European umbrella associations. Typical advantages are a high level of industry representation, strong secretariats and a direct link to national governments. Potential disadvantages can be more complex decision-making processes or less direct involvement and understanding within the companies. While greater involvement of companies within the direct membership model (16%) ensures the rapid and direct link to the industry and provides both the technical expertise and the 'bottom line', disadvantages here can include the creation of a credibility gap through sector under-representation, with specific company interests prevailing over consistent industry messages.

In response to the constant changes in EU decision-making structures and the increasing European and global operations of its members, **EECA-ESIA now belongs to the rising 26% of European business associations to have chosen a mixed model**, with direct company membership running alongside the membership of National Associations. The model's effectiveness is largely dependent on the association's capacity to *bundle* activities, resources and representation routes at the European, national and

company level. Ideally, this model can create an effective 'three-tier-representation system', generally understood as the best recipe for an association such as ESIA to belong to the small percentage of so-called 'proactive' European business associations.

ESIA wants to continue to establish itself as part of this proactive group, and continued active participation of the National Associations is essential in realising this goal.

National associations within EECA-ESIA

More specifically, the role of the National Associations includes the following. They:

- ensure the indirect participation of those – usually SMEs – that are not direct members, therefore also ensuring that around 95% of European-based semiconductor device manufacturing is represented at the European level;
- provide invaluable input, expertise and resources into the on-going work of ESIA, vital during the pre-EU legislation stage;
- provide crucial national 'political clout' with Member States, especially during the European Parliament and Council of Ministers' stages of EU legislation; and
- depending on issue, represent industries' interests in national legislation after the EU process.

To best use the advantages of the mixed association model, semiconductor manufacturing companies (including foundries) are encouraged to become direct members of both a National Association and ESIA, direct members being required to already be active members of a National Association.

The map above shows the eight National Associations which are currently members of ESIA. Typically, the semiconductor sector is integrated in the electro-technical and electronics industry at national level. Countries with only one significant player (Netherlands and Ireland) are not represented by National Associations within ESIA.

The following articles take a closer look at three of the National Associations.

Martin Spät is Director of EECA-ESIA

COUNTRY OF MARKET SHARE

| | |
|-------------|--------|
| Germany | 30.70% |
| UK/Ireland | 26.30% |
| France | 13.10% |
| Italy | 10.60% |
| Scandinavia | 6.20% |
| Benelux | 3.50% |
| Spain | 4.03% |
| Switzerland | 2.21% |
| Austria | 2.02% |
| Portugal | 1.34% |

Source: Future Horizons 2003



FOCUS GERMANY

The Electronic Components Division within the German Electrical and Electronic Manufacturers' Association (ZVEI)

By Christoph Stoppok

The Electronic Components division within ZVEI represents the manufacturers of semiconductors, tubes, passive components, electromechanical components and fuses, printed circuit boards and the EMS providers. It includes all major semiconductor companies with production sites and a significant presence in Germany. Within Germany, ZVEI is therefore in a unique position to promote the interests of our industries in the area of political lobbying as well as supply chain projects.

With regard to the legislative processes in Europe, lobbying through National Associations is an essential tool in the representation of industry's interests. ZVEI uses and supports all the important channels that ensure efficient lobbying, such as ORGALIME - the official dialogue partner of the Commission - and ESIA as European partner of the Electronic Components division. It further maintains personal contacts to members of the German government, the European Parliament and the European Council. ZVEI represents a major European market for electronics and is aware of its important role and responsibility as the largest National Association in Europe. **Several success stories, e.g. the exception of components in the low-voltage Directive, the exceptions from the ban of lead as well as the reconsideration of the EEE (Electrical and Electronic Equipment) Directive clearly underline the need for national lobbying in Europe and have proven the effectiveness of ZVEI's involvement in the network ZVEI-ORGALIME-EECA-ESIA.**

Recently, ZVEI has taken on an important role in European industry activities within the EuP (End-using-Products) and EMC (Electromagnetic Compatibility) Directive, as well as the EU's New Chemicals Policy, the revision process of Annex II of the RoHS (Restriction of the use of certain Hazardous Substances) and the End-of-Life-Vehicles (ELV) Directives.

In addition to its key competence as representative of the industry towards political institutions, the Electronic Components division within ZVEI increasingly appears as partner and service provider to the members within the supply chain. There are various examples where ZVEI has been able to promote the position of the component manufacturers towards their customers, such as the 'Approach to Materials Declaration', the so-called 'Umbrella Specifications' in the automotive sector, the White Book on

the long-term supply of semiconductors or the activities in the field of Bare Dies. The Umbrella Specifications alone will enable our companies to save costs equivalent to several million Euro per year.

Based on our most recent experiences we are confident that we have the right structure in place to meet future challenges head on, irrespective of whether they originate from within the supply chain or from legislation.

Christoph Stoppok is Managing Director of ZVEI Fachverband Bauelemente der Elektronik



FOCUS UK

INTELLECT, the Information Technology, Telecommunications and Electronics Association

By Peter Maguire

In May 2002 CSSA and FEI merged to form Intellect, creating a single, powerful voice for the IT, telecommunications and electronics industries in the UK.

Intellect has over 1000 member organisations, covering software, electronics hardware, communications and computing, with membership spanning large and small companies. This sector of industry is rapidly becoming the engine room for the UK economy and is a vital contributor to the government's ambitious plans for electronic public service delivery. The combined industry contributes:

- around 10% of UK GDP;
- more than one million jobs;
- at least 15% of total UK trade; and
- more than £34bn per year in UK exports.

Intellect supports the following five key areas: Components and Manufacturing, Telecommunications, IT Software & Services, Consumer Electronics and Document Management. In addition, markets within the public and private sectors such as Healthcare, Defence, Government, Financial Services and International are also fully supported to benefit the members.

The semiconductor industry is represented within the Components and Manufacturing Group by the SMA (Semiconductor Manufacturers Association). This group currently has 23 members ranging from large multinationals to smaller local companies. The SMA concentrates on sales and marketing activities within the UK and a number of sub groups have been formed to cover such subjects as market analysis, EMS and distribution.

The SMA produces an annual UK Semiconductor Market Analysis report, covering the previous four years, the current year, as well as looking two years into the future and is seen

as a useful support in setting annual budgets and forecasts.

The most pressing issue impacting the UK electronics industry is that concerning the migration of the volume consumer electronics manufacturers to either Central Europe or the Far East, thus seriously impacting local sales of components. Most member companies are concentrating their efforts on the many design organisations that exist in the UK and using their in-house supply chain management to track the eventual manufacturing location that wins the business wherever in the world that may be.

As far as the UK semiconductor manufacturing locations are concerned, we have seen some consolidation of facilities in recent years, and currently much focus is being placed on health & safety issues that may impact the industry.

The UK and Ireland semiconductor market has seen a dramatic change since its peak of £6,400 million in 2000, declining to £3,500 in 2002. This current year is forecast to see some small single figure growth, as prices remain depressed, even though volumes will increase.

Intellect is pleased to be a founder member of EECA-ESIA and actively supports ESIA activities within the EU **in particular on the consolidation of Origins Protocol, the WEEE/RoHS initiative, the recent Chemicals Policy and various WTO initiatives which are important in projecting a single voice for the European semiconductor industry.**

Peter Maguire is Intellect's Director for Components & Manufacturing

S I T E L E S C
SYNDICAT DES INDUSTRIES DE TUBES ÉLECTRONIQUES
ET SEMICONDUCTEURS

FOCUS FRANCE

The French Semiconductors and Electronic Tubes Association (SITELESC)

By Gérard Ollivier

SITELESC, the French Semiconductors and Electronic Tubes Association, has a long history: its origins lie in a first association, created in 1924, which grouped together the radio electricity industries of France. In 1951, following the development and the growth of these industries, this association decided to split into sector specific associations, a move which produced amongst others the Electronic Tubes association SITEL. In 1958, to take into account the emerging semiconductor industry, SITEL expanded to SITELESC.

Today SITELESC represents businesses that create added-value in the microelectronics' industry: research laboratories, design centres, equipment manufacturers (equipment, materials and services) and manufacturers (semiconductors, vacuum tubes and flat screens). Its primary function is to coordinate and inform the profession and the market via its activities in specialised commissions, clubs and working groups comprised of experts from member companies.

The aim of the specialised commission is, in coordination with company experts, to analyse national and European legislation and to disseminate information on microelectronics. **Key subjects are safety and health, environment, corporate affairs, training and customs (preferential origin, antidumping etc.).**

Clubs, such as that on 'Integrated Circuits & Discrete Semiconductors', form part of the marketing side. They also collect relevant market data in order to analyse market trends. The conclusions are processed through SITELESC and communicated to members.

Working groups are formed upon request. Their members endeavour to develop the competitiveness of the microelectronics sector in France. For instance, these groups may submit proposals to public authorities on specific issues such as the tax system (business taxes, tax credit) or research. Together with the Ministry of Industry, SITELESC has carried out a study comparing and analysing the methods and levels of how industry is supported by public authorities. SITELESC recently also completed a study on the strategic importance of microelectronics in France, in terms of European and global competitiveness.

In addition, each autumn SITELESC organizes the **European Microelectronics Summit in Paris**. This summit brings together members of the industry and users, and allows the best specialists in the field to present industry strategies, market trends and the technological development of the future.

SITELESC is one of the founding members of the European association EECA and continues to be an active supporter of ESIA. SITELESC has also developed special links with global organisations such as MEDEA+, SIA, TSIA. Recently, SITELESC held his first meeting with the Shanghai Semiconductor Association.

At the end of 2002, SITELESC represented a group with a turnover of €5,3 bn and 32000 employees, as well as around 40000 'indirect' job holders.

2002 has witnessed, despite the severe crisis, the creation of an important development pole in CROLLES 2, bringing together three important manufacturers (*Philips, STM and Motorola*) and representing investments of €1,3 bn.

Gérard Ollivier is the Délégué Général of SITELESC

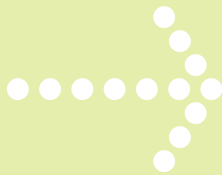


ISESH



10TH ANNUAL CONFERENCE
NOORDWIJK 2003

Noordwijk, The Netherlands
June 29th - July 3rd, 2003



For all further details go to
www.eeca.org/esia.htm
Call for Papers deadline has been extended.
Favourable pricing before 9th June 2003

The International Semiconductor Environment, Safety and Health (ISESH) conference is a global forum that stimulates an open exchange of cutting edge and innovative ideas in ESH technology and practices. This well-established annual event rotates between all the associations of the World Semiconductor Council (EECA-ESIA, JEITA, KSIA, SIA, TSIA – www.semiconductorcouncil.org). It brings together ESH experts from the semiconductor industry, suppliers to the semiconductor sector and semiconductor-related research institutes.

This year's conference also features key guest speakers including **Arthur van der Poel**, Executive Vice President of Royal Philips Electronics, member of the Board of Management and the GMC, a director from **DG Environment** and **Dr. Gerhard Berz**, Head of the Geo Risks Department of Europe's largest re-insurance company.

MEMBERS OF EECA-ESIA

COMPANIES

ALTIS Semiconductor
AMD
Austriamicrosystems
ATMEL
Robert Bosch
Infineon Technologies
Intel Corporation UK
Micron Technology Italia
Micronas
Motorola
Philips Semiconductors
Renesas Technology Corp.
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NATIONAL ASSOCIATIONS

AGORIA (BEL)
ANIE (IT)
ANIEL (ES)
FEEI (A)
Intellect (UK)
SITELESC (FR)
VI/SECA (SWE)
ZVEI (DE)

INTERNAL NEWS & EVENTS

2003

FEBRUARY:

WSC: ESH & JSTC meetings, Seoul, Korea

MARCH:

K. Reader joins ESIA as Assistant for five months.

APRIL 3:

Joint ESIA/SEMI workshop on EU Chemicals Policy

MAY 14-16:

WSC: JSTC & WSC meetings in Nice, France

JUNE 29-JULY 3:

ISESH, Noordwijk, The Netherlands

NOVEMBER 18-20 :

WSC: ESH, JSTC & GAMS Meetings, California

EECA ESIA

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