



Technology solutions for
high performance systems

e2v



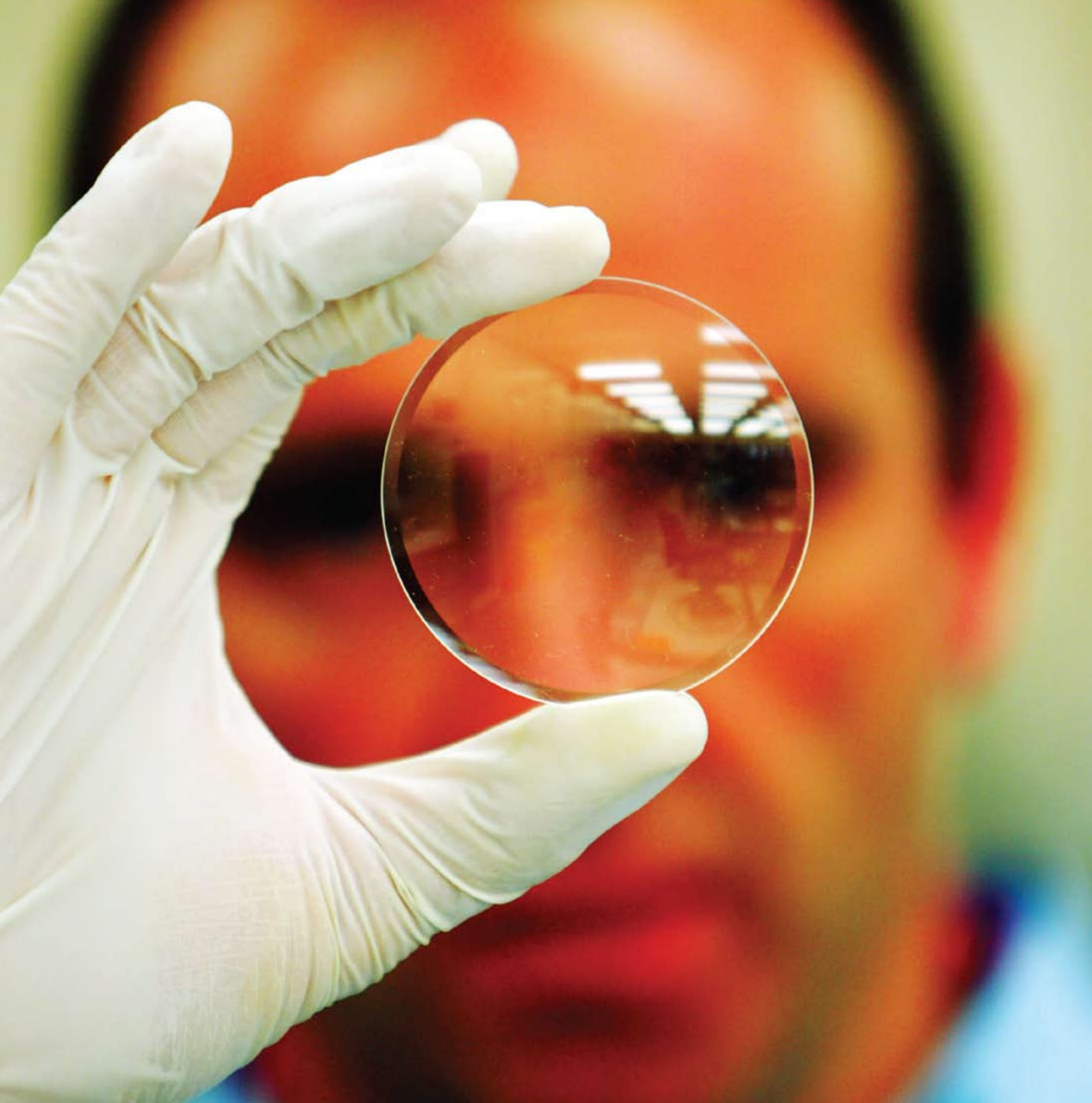
e2v delivers technology solutions for high performance systems at a component, sub-system, and service level

Our business is built upon two core technologies:

- Radio Frequency (RF) and microwave products, sub-systems and solutions
- Semiconductor-based products and solutions

These are delivered into specialist global application segments through three divisions:

- RF power solutions
- High performance imaging solutions
- Hi-rel semiconductor solutions



e2v at a glance

- Founded: 1947
- Annual sales of approx \$370m
- Corporate HQ: Chelmsford, England
- Listed on the London Stock Exchange and FTSE4Good index
- Employees: approx 1500, of whom approximately a third are engineers and scientists
- 13 main global locations
- 6 production facilities: 3 in England, 1 in the US, 1 in France and 1 in Switzerland
- Industries served: medical & science, aerospace & defence, and commercial & industrial markets
- Sales made to over 50 countries

Our markets

e2v is globally recognised for more than 60 years of commitment and technological breakthroughs in the provision of high reliability solutions, sub-systems and components to the most demanding of professional markets.



Case Study

e2v aerospace and defense inc.

To enable delivery of the geographic expansion in USA, as identified in our strategic plan, this year we established e2v aerospace & defense, inc. based in Santa Clara CA and incorporating the QP Semiconductor business. It has the necessary US security clearances and will progressively act as the vehicle for e2v to supply and deliver into the US aerospace and defence market.

The new organisation is instrumental in the delivery of our SLiM programme and major US defence projects, for example our ongoing work with BAE Systems against the AN/ALE-55(V) fibre optic towed decoy system for use on the US Navy F/A-18E/F aircraft and with Ball Aerospace for defence imaging projects.

The e2v aerospace and defense inc. business is now growing with the required sales, applications, engineering, assembly, test and after market resource; to build upon our existing business and to be a strong technology solutions provider to the US aerospace and defence market.



Our divisions

e2v is organised into three divisions supported by group functions. The divisions deliver solutions targeted at specialists global application segments.

RF power solutions for:

- Defence electronic countermeasures
- Radiotherapy cancer treatment machines
- Radar systems
- Stellar satellite communications amplifiers
- Industrial heating
- Cargo screening
- Industrial processing systems
- Missile control safety and arming devices
- Digital television transmitters

High performance imaging solutions including programmes requiring CCD & CMOS sensors and cameras:

- Space and earth observation imaging
- Science and life science imaging
- Machine vision
- Ophthalmology
- Dental x-ray systems
- Fire, rescue and security thermal imaging

Hi-rel semiconductor solutions for aerospace & defence programmes requiring:

- Lifecycle management
- Hi-rel microprocessors
- High-speed data convertors
- High-reliability ICs with lifetime continuity of supply
- Assembly & test services
- MRAMs

Our global operations

e2v has European and US design, development and manufacturing sites. Sales, service and technical support are provided by four global sales and support territory offices and regional field application engineers to a total of more than 50 countries.



Case Study

South Korea's first weather satellite

South Korea's first weather satellite was launched in June 2010 and on board are the first CMOS imaging sensors packaged and space qualified at e2v. It is in geostationary orbit 36,000 km from Earth carrying three payloads dedicated to meteorology applications, ocean observation and telecommunications. The CMOS imaging sensors we supplied equip the Geostationary Ocean Colour Instrument (GOCI), a multi-spectrum camera that gathers high quality ocean meteorological data including typhoons and dust movement.

The project is the result of a collaboration between the Korean Aerospace Research Institute (KARI) and Astrium in France. The CMOS image sensors were the result of close work between Astrium, ISAE-CIMI (Institut Supérieur de l'Aéronautique et de l'Espace) and e2v.

The imaging arrays will provide multi-spectral data to detect, monitor, quantify and predict short-term changes in the coastal ocean environment around Korea, for marine science research and applications purposes.

The sensors are amongst the first CMOS sensors in an operational mission in geostationary orbit.



Case Study

Semiconductor Lifecycle Management (SLiM)

Global defence platforms need supporting for ever-longer periods of time, and with that comes the need to mitigate against the obsolescence of critical components. e2v's Semiconductor Lifecycle Management (SLiM) programme is addressing this problem, offering through-life support to the supply of hi-rel semiconductor components. The latest example is for the F15 fighter, first delivered in 1974, and with over 1,000 aircraft since sold to customers around the world. e2v has partnered with Raytheon Space and Airborne Systems to support the F15's radar system for the next 5 years.

This partnership will see e2v supporting at least 200 systems per year over the next 5 years. It is anticipated that other F15 sub-system suppliers may also take advantage of this approach and that this type of service agreement will become the norm for defence platforms.



Our global presence

With its HQ in Chelmsford, Essex, England, e2v has three UK-based design, development and manufacturing facilities (Chelmsford, Lincoln and High Wycombe), one in Grenoble, France, one in Corcelles, Switzerland and one in Santa Clara, US. Over 30% of our people are engineers or scientists. We also have sales, service and technical support offices in the UK, North America, Germany, France, and Hong Kong, as well as a global network of distributors and resellers.

e2v's capabilities extend from the provision of key solutions and enabling technologies to multi-disciplinary projects, for example imaging arrays for satellite instruments used in astronomical research, to the design and manufacture of complete products, for example our Argus thermal imaging camera.

In support of this international business, e2v's operational facilities have the following certifications:

- ISO9001:2008
- ISO/TS 16949:2002 (Corcelles automotive products)
- AS9100 (Grenoble aerospace semiconductor products)
- Environmental Management System (EMS)ISO14001:2004 (UK)
- MIL-PRF-38535 custom microcircuit certification (Santa Clara)
- OHSAS18001 Health and Safety
- ESCC (European Space Components Coordination) specification standards for European Space Agency (ESA) projects

e2v around the world

Santa Clara US

HQ and Sales office for e2v aerospace and defense inc.

Design, development and manufacturing facility specialising in aerospace and defence hi-rel semiconductor solutions

Lincoln UK

Design, development and manufacturing facility specialising in microwave electronics

Chelmsford UK

HQ for e2v

Northern European regional sales office.

Largest design, development and manufacturing facility specialising in RF power and high performance imaging solutions

High Wycombe UK

Design, development and manufacturing facility specialising in x-ray spectroscopy

Gröbenzell Germany

Germany and Austria regional sales office

New York US

America's regional sales office

Paris France

Southern European regional sales office

Grenoble France

Design, development and manufacturing facility specialising in hi-rel semiconductors and high performance imaging solutions

Corcelles Switzerland

Design, development and manufacturing facility specialising in semiconductor gas sensing

Beijing China

Regional sales support

Hong Kong

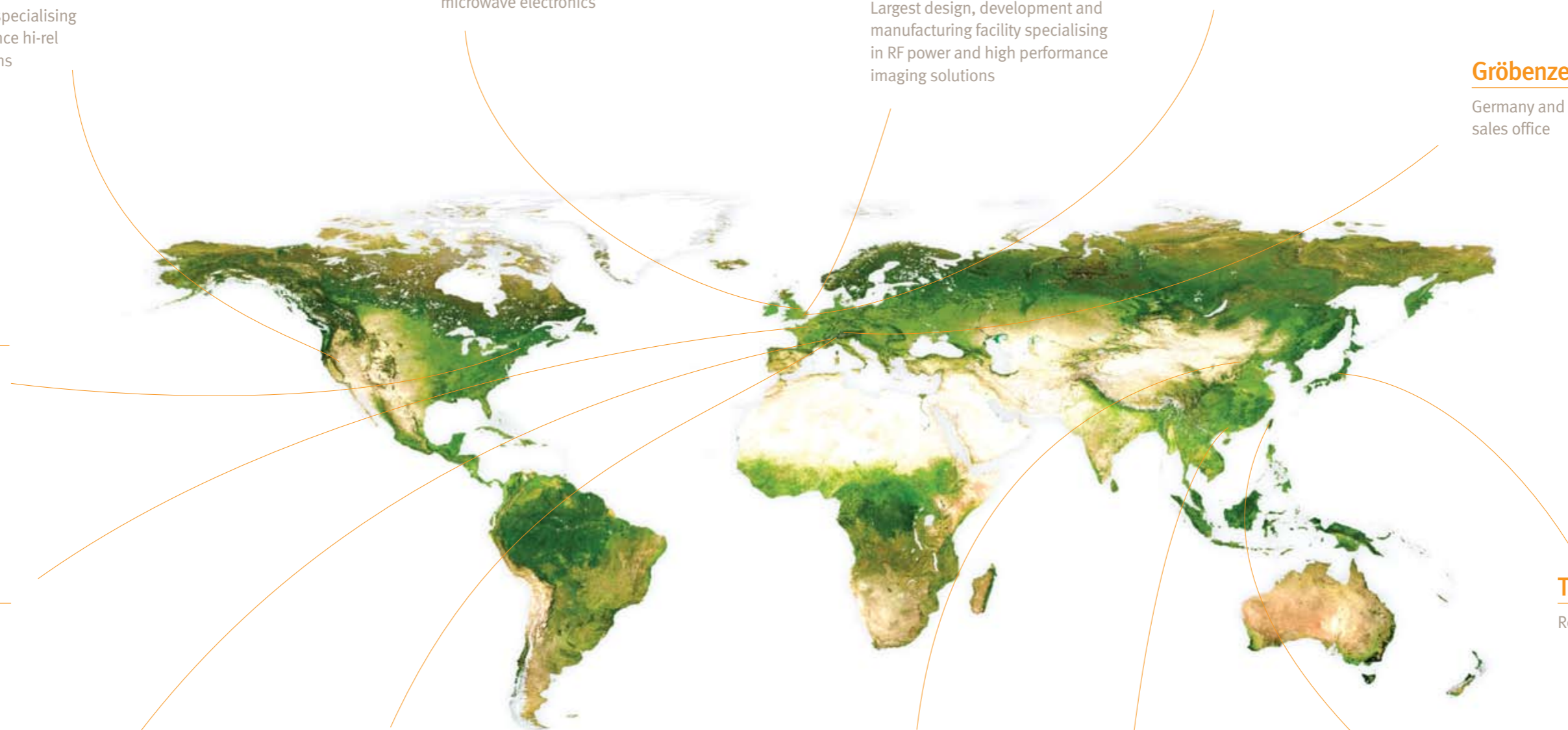
Asia Pacific regional sales office

Taipei Taiwan

Regional procurement office

Tokyo Japan

Regional sales support





Our people

We recognise that our success in the design, manufacture, development, integration and ongoing service and support of world-beating technology solutions for high performance systems is driven by the strength of our intellectual knowledge and expertise.



Case Study

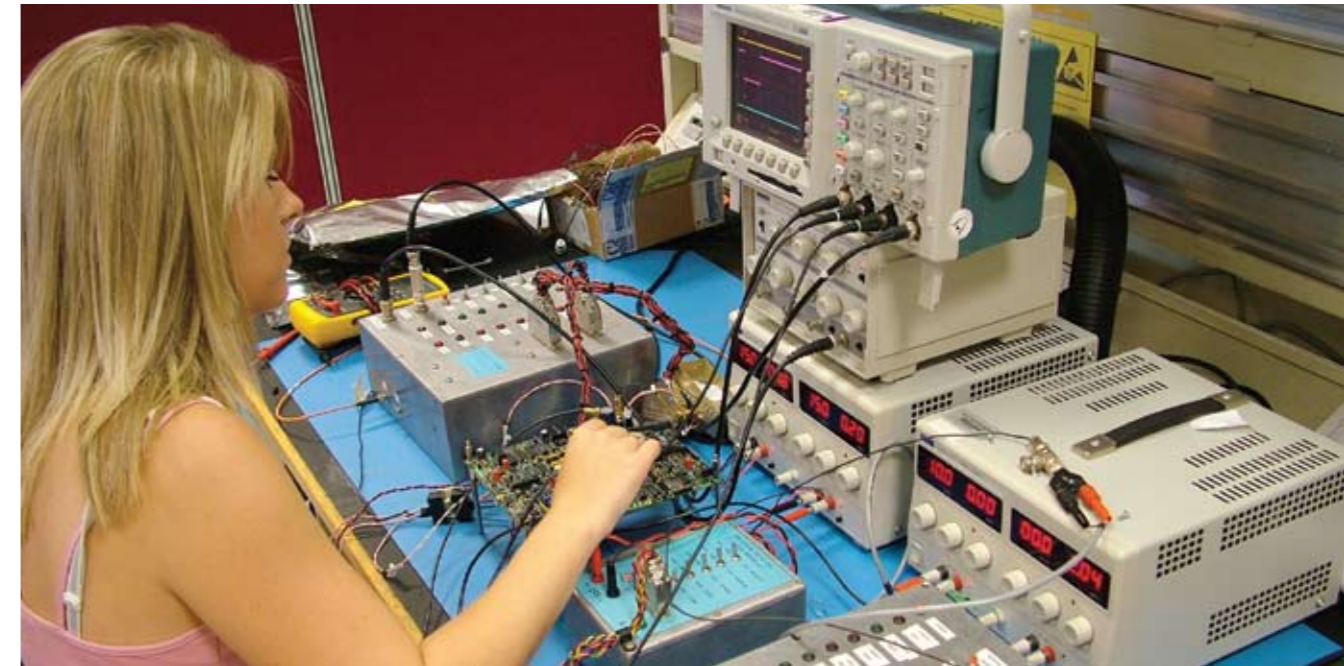
A new approach to bulk material processing

e2v's new Industrial Processing Systems (IPS) group has secured orders for development work with our customers in the mining and offshore oil drilling sectors for bulk materials processing and is committed to significant investment in additional research, development and expanded production facilities. Backed by a grant of up to £6.2m from the Regional Growth Fund administered by the UK Department for Business Innovation and Skills, we will see the creation of more than 100 new jobs by 2014 together with supporting academic posts at our research partner, the University of Nottingham.

The proposed scope of this expansion is to accelerate availability of e2v's ProWave® products and services, offering a cleaner, greener, more efficient technology to the processing of bulk materials and supplanting traditional fossil fuel based technologies such as gas furnaces. The new technology is significantly more efficient in, for example, vermiculite processing, with overall energy consumption reduced by c. 90%.

We successfully demonstrated our 'production-scale prototype' ProWave® machine for vermiculite processing to members of The Vermiculite Association in April 2011 and have now received an order for its field trial.

pro wave
Industrial Processing Systems from e2v



There are a number of ongoing activities designed to nurture the key skills needed by our business.

They include:

- Apprentice schemes in the UK and France involving approximately 40 apprentices at any one time
- Ongoing training and development courses for existing employees
- Supporting the UK Young Enterprise Programme, where e2v employees act as mentors and tutors to young people, promoting awareness of business and business practice
- Involvement with the STEMNET (Science, Technology, Engineering and Mathematics Network) initiative. 20 employees act as ambassadors to schools and colleges to work with young people
- In support of our research and development programmes, e2v maintains strong relationships with research centres and universities; examples of which include Institute EURECOM, the Centre for Industrial Microwave Processing (CIMP) in collaboration with the University of Nottingham, the Centre for Electronic Imaging (CEI) in collaboration with the Open University and Université d'Avignon, where a range of research projects are jointly undertaken





Our technical capabilities

Each of e2v's operational locations has its own specialisations, supporting a proven history of innovation and technological breakthroughs in the provision of solutions and sub-systems to the most demanding of requirements.



Telecommunications



Defence aerospace



Thermal imaging

e2v encompasses a complementary range of technical specialisations. They include:

- Hi-rel semiconductor solutions in Santa Clara
- High performance imaging and RF power solutions in Chelmsford
- Microwave electronics technology in Lincoln
- Silicon drift detector technology in High Wycombe
- Metal oxide semiconductor gas detection in Corcelles
- High performance imaging and hi-rel semiconductor solutions in Grenoble

In support of our imaging business, e2v has wafer fabrication and processing facilities, producing imaging devices used in space and astronomical, medical, scientific, defence and industrial process control markets. These facilities are supported by clean rooms for hermetic packaging and processing of high reliability semiconductors, and CCD and CMOS imaging devices.

As a result of our track record of innovation and technological breakthroughs in the supply of solutions, sub-systems and components, e2v continues to be involved in many high-profile programmes, including:

- Hubble space telescope upgrade project
- Airbus A380
- ESA Gaia mission to map our galaxy
- US Patriot air and missile defence system
- Eurofighter Typhoon, including hi-rel semiconductor lifecycle management

e2v also has long established relationships with industry partners: for example with Freescale Semiconductor, to develop and supply extended reliability versions of their microprocessors and to extend the life of 68K-series microprocessors as part of our semiconductor lifecycle management programme.

The combination of our in-house technical capability, (which has resulted in nearly 200 patent families being granted to the e2v group), and links with technical authorities and universities, ensures that e2v can bring together the right level of expertise for a diverse range of technical challenges.

Our corporate responsibility

e2v's corporate responsibility activities are built on 5 pillars, each with their own established policies:

- Supply chain – building long term relationships with our customers and suppliers
- Employees – recognising the importance of our people
- Investors – promoting two way communication with current and potential investors
- Community – recognising the responsibility of operating within local communities
- Environment – minimising the adverse impact of our activities on the environment

e2v has an internal global initiative, Bright Green, designed to engage all of our people in the continuous improvement of our systems and processes to minimise any adverse impact on the environment. Our UK Environmental Management System has been certified to ISO14001 since 1997.

In 2011 e2v took part in the Business In the Community (BiTC) global environment index and scored **Platinum** for our global initiatives.

The Grenoble operation also has a fully-integrated quality management system that follows OHSAS 18001 and ISO14001 with full compliance to European and International requirements.

Compliance with legislative requirements is regarded as a minimum standard, with the aim being to deliver much more.

e2v's Whoosh! learning centre located at the company's HQ, is open to both employees and the local community, and runs courses designed by learning professionals, leading to a strong emphasis on new and innovative approaches which accelerate learning and development.

Our employees also recognise the importance of maintaining the health and social fabric of the communities in which they live and work. They undertake a range of local and nationally-based charitable activities with support from the company through matched contributions.

In addition, e2v makes direct corporate charitable donations, and has also established the e2v foundation, a long-term fund supporting good causes and charitable organisations.



Environmental awareness and measurement

Business in the Community (BiTC) is a business-led charity with a growing membership of 850 companies, including many FTSE100, who advise, support and challenge companies to create a sustainable future for people and the planet and to improve business performance against Corporate Responsibility (CR) based objectives.

This year the average Environmental Index score for participants was 83%. e2v has been measuring performance against BiTC's Environmental Index since 2008 and we made our second full submission in 2011, achieving a score of 95.1% and taking the business into the platinum band. Plans are now underway for measurement against BiTC's full CR Index.

Latest initiatives at e2v include the launch of our UK Cycle to Work scheme, in conjunction with Cyclescheme UK. Participation in the scheme allows employees to benefit from tax and national insurance savings against the hire of bike and safety equipment.

e2v gets social

As part of e2v's objective to make use of social media to communicate more effectively with our stakeholders, including global media and potential and existing employees, we are now to be found tweeting all of our latest news (twitter.com/e2v) alongside pages on Facebook and LinkedIn. Not forgetting videos on YouTube showing some of our technologies in action. Try searching for 'fire fighter proof thermal imaging' to see our Argus camera under severe operational abuse, including from a water cannon.

Social media was also used to great effect in spreading the news that we were holding an apprentice open day at our Whoosh! learning centre, contributing to a high application level from over 100 people.

Links to these and other sites and an RSS feed can be found on our homepage, e2v.com, with a separate investor RSS feed from our investor pages.

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