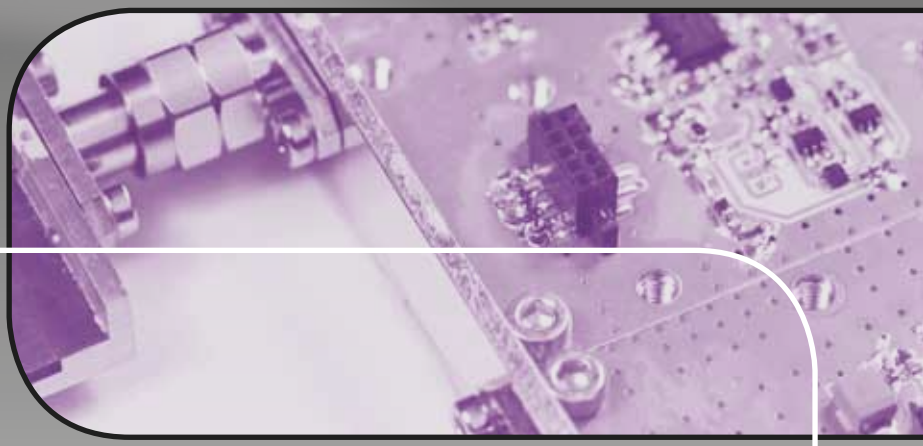
YOUR PARTNER IN INNOVATION



TES
Electronic Solutions

What we stand for.

TES is a leading electronics design services company and technology / IP provider. With specialized design centers located in Germany, UK, India and Serbia, we develop high tech products, systems, subsystems and IP cores for our customers around the globe.

We serve markets like Automotive, Avionics, Transportation, Industrial, Test & Measurement, White Goods, Home Automation & Metering.

Our application & technology focus is the following:

- Multimedia / HMI systems for automotive & professional applications
- Embedded platforms for a wide range of applications across the industry
- Human Machine Interface: from concept & design to complete systems
- Graphical User Interface Software, framework & tools
- 2D & 3D Graphics Processor IP & Rendering software for embedded systems
- Wireless systems / subsystems for voice & high quality audio, video, data & M2M communication
- ASIC / SoC Design with focus on RF, Analog & Mixed Signal
- FPGA Design as partner of the leading FPGA vendors

We service a large global customerbase that ranges from highly specialized mid-size companies to blue chip corporations.

Human Machine Interface

Human Machine Interface

Whether you need a complete turn-key HMI (Human Machine Interface) solution, designed and developed by our human factors experts, arts designers and engineers or you are just looking for an efficient GUI Software Framework and tools, TES is the right address!

Human Machine Interface (HMI) Concept development

TES offers complete turn-key HMI development including everything from the first concept to the final product level HMI. That includes all conceptual work on human factors as well as the arts design, electronics, software and mechanics.

Our experts have many years of experience in Automotive Applications, Industrial, Telematics, Aviation, Home Automation and White Goods.

Guiliani - Graphical User Interface (GUI) Software Framework

Guiliani is our solution for efficient GUI development targeting embedded systems. It combines the comfort of a PC based development tool chain with the benefits of a highly optimized C++ software framework which is hardware and OS independent. A wide range of standard widgets, animations and graphical functions is provided.

Embedded Graphics Technology IP & System Solutions

TES offers a comprehensive portfolio of Graphics Processor IPs and rendering technology as well as complete video & graphics system solutions such as 3D surround view, head-up-display processing subsystems, map rendering or sophisticated HMIs. Our technology offerings are complemented by associated system integration, graphics application and HMI expert design services.

Our end-to-end solution offering is unique in the industry and enables our customers to innovate with fast time to market solutions through video- and graphics (sub-) systems, reference designs, tools and services. The footprint of our graphics technology and services ranges from markets such as Automotive and Avionics & Military to Industrial and White Goods.

Hardware IP cores for ASIC & FPGA

- D/AVE 3D – GPU / rendering engine
- D/AVE 2D – GPU / rendering engine
- D/AVE HD – High resolution 2D/3D GPU
- CDC – Customizable Display Controller including scaler supporting HD resolutions
- Warping-Image transformation engine for head-up-displays of fish-eye-lens correction
- Video Input Controller including scaler

Software IP

- eGML – Portable C++ rendering framework & library
- eVRU – Rendering framework for dual core architectures (DSP + µC)
- 3D - Surround View for vehicles in safety critical applications
- MAP – Rendering in 2D & 3D

Embedded Platforms & Multi Media

TES has developed a broad range of Embedded & Multi Media Platforms which are the basis for customer products targeting Industrial, Automotive, Enterprise and Home Automation markets.

The brand new MAGIK 2 family comprises Embedded Modules based on a variety of µCs, the industrial tablet platforms “Windspin” (ARM Cortex A8) and “Blade Runner” (ARM Cortex A9), a 3D-Surround-View system, as well as “Aviator”, a head unit infotainment platform for vehicles. New family members are added continuously.

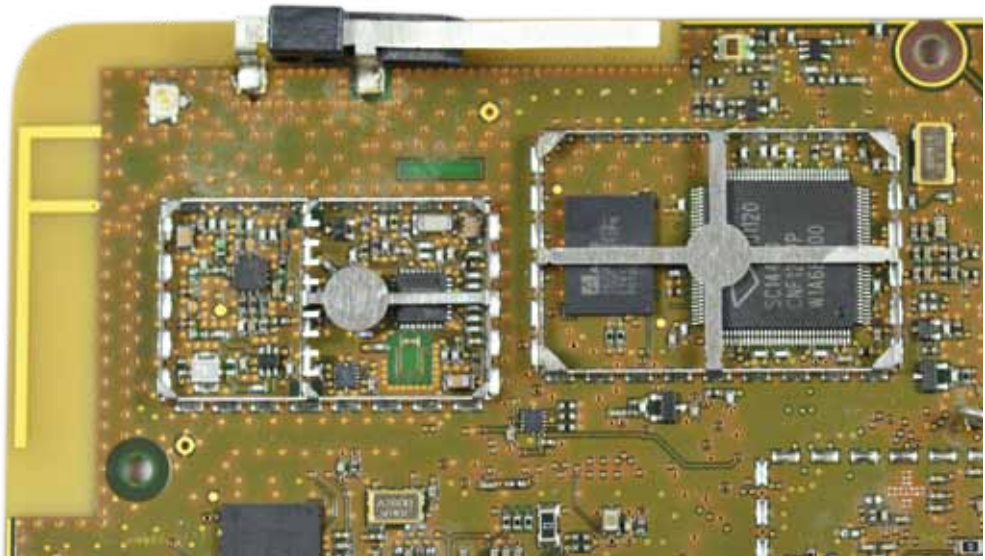
For each of these platforms, we offer full software suites, from a variety of operating systems via the associated BSPs to Graphical User Interface software with selectable, application specific adaptations / modules, that enable a very fast TTM for our customers. Additional application software can be offered on top according to customers’ requirements.

On base of the mentioned platforms, TES offers customization services together with a full supply chain service including life cycle and obsolescence management. The offered flexible business models complete the value proposition and thus make the concept very attractive and successful.

Wireless

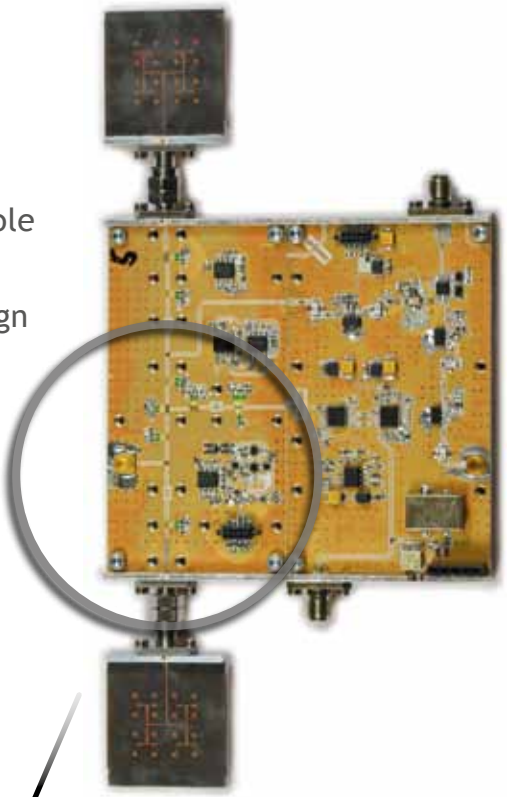
We have comprehensive experience in the design and manufacturing of RF & wireless systems and subsystems for voice & high quality audio, video, data & M2M communication:

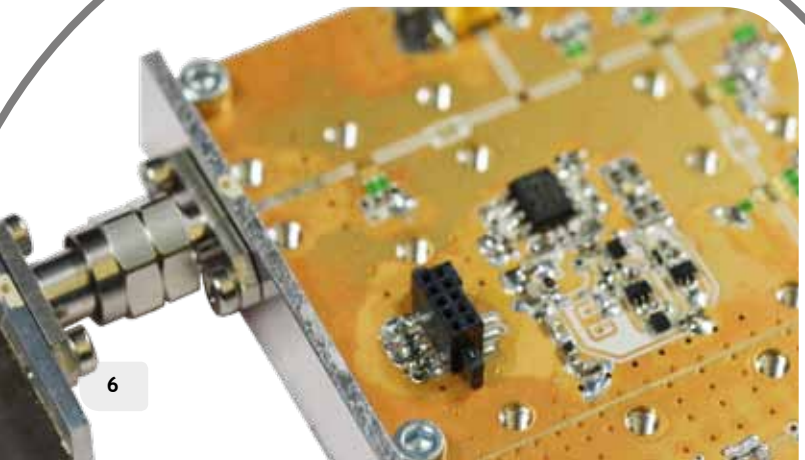
- Short Range personal area Wireless Networks
- Wireless sensors, detectors and meters
- High quality audio over wireless
- Professional intercom systems
- Person trackers and search & rescue devices
- RF & Microwave and Radar Systems
- Wireless equipment for cellular data communication



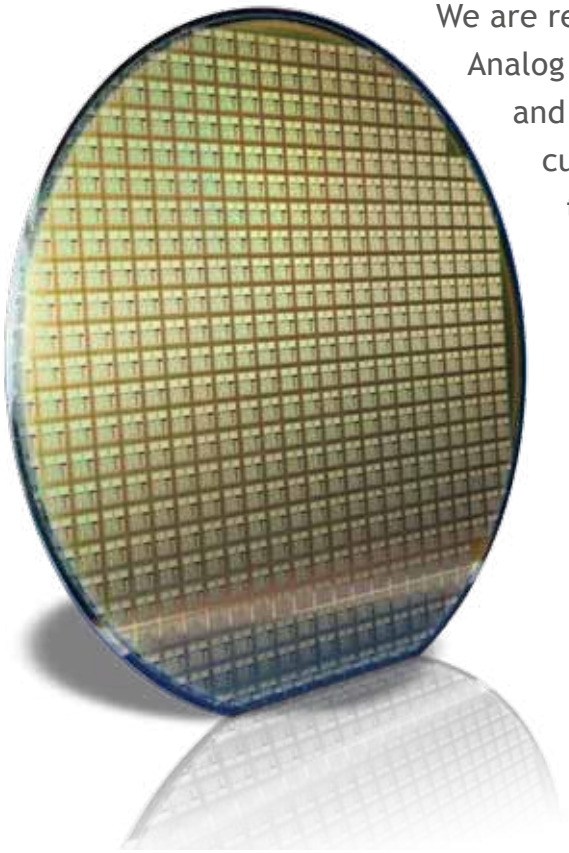
We have accomplished numerous projects in these areas in frequency bands up to 60 GHz. Reference designs are available for various applications and RF technologies that allow us to improve our customers' TTM.

In particular in RF design – experience is a non-replaceable item! We definitely have it – with a proven track record in RF designs with cutting edge performance.We are the design partner for system design, RF hardware, antennas and protocol stacks.





Systems-On-Silicon



We are renowned experts in the areas of Digital, Analog & Mixed Signal, as well as RF-ASIC design and most of the European IDMs are our customers. With our highly skilled team of technical experts we engineer ASIC solutions for a broad range of industrial customers. Example projects are:

- Ultra Low Power µC with ADCs, DACs e.g. for sensing applications
- Image sensors for industrial, automotive and security
- Wireless communication devices – standard and proprietary
- Search & rescue transmitters
- Automotive bus devices
- MMICs: LNAs, VCOs, power detector, 60-GHz-ISM band front ends
- RFID transponders

FPGA-Design

At TES we have gained a strong reputation in the industry for our high-quality FPGA designs. We are design house and IP partner for key FPGA vendors. Our teams have conducted projects in a broad range of applications, such as:

- Graphics rendering, including warping
- Display controllers with scaling functionality
- Video processing, codecs, digital audio processing
- OFDM baseband processing
- MAC-layers for telecommunication protocols
- High speed interconnection links
- DSP algorithms for radar
- CAN controller
- I2C devices
- SoC implementations using integrated soft- or hard CPUs
- Verification projects e.g. for avionics according DO-254

Stuttgart - Headquarter

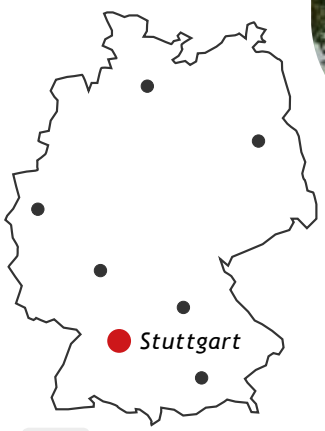
The TES Headquarter is located in Stuttgart in close vicinity of the airport and comprises the CEO office, the Sales & Marketing & HMI Headquarters with an amazing show room, the Competence Center Hardware & RF Development as well as the Human Resources, Finance & Accounting and IT department.

The Stuttgart region is not only the home of Daimler and Porsche, but the whole region is one of the most important economical areas in Germany.

Stuttgart Design Center

Competence Center Hardware & RF

The Design Center in Stuttgart is our Competence Center for hardware and RF technology. It comprises comprehensive expertise that includes RF/Wireless systems and antennas and embedded computing. The DC also accommodates a group of ASIC and FPGA designers. The RF/Wireless expertise ranges up to the 60 GHz band; concrete results of our work are on display in our showroom.



Munich Design Center

Competence Center Analog & Mixed Signal ASIC

The DC Munich is the center of our System-On-Silicon business line and the competence center for Analog & Mixed Signal ASIC Design. Working areas are e.g. RF-ID and ultra low power controllers e.g. for mobile phones and sensors.

Berlin Design Center

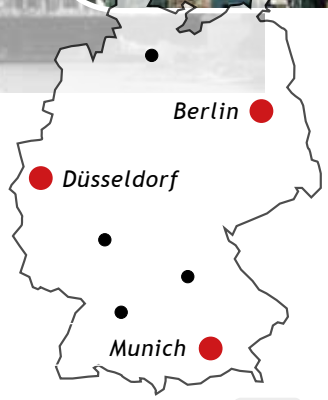
Competence Center Analog - RF ASIC

The DC Berlin belongs to our System-On-Silicon business line and is our competence center for RF-ASIC Design. Our designer engineers in Berlin have many years of experience in this area and have developed e.g. 60 GHz chips as well as a chip for satellite communication that is integrated into a watch.

Düsseldorf Design Center

Competence Center Digital - ASIC

The DC in Düsseldorf combines expertise in Digital ASIC design with know-how in FPGA and digital hardware. Apart from supporting local customers in the huge industrial region Rhein-Ruhr, the engineering team there is – due to their solid expertise - also an appreciated part of larger multi-site projects.



Frankfurt / Main Design Center

Competence Center for Graphical User Interface Software Technology

The DC Frankfurt accommodates the core team and expertise of our Software technology for Graphical User Interfaces. “Guiliani”, the C++ software framework for easy GUI development has been developed in Frankfurt. It has been licensed by numerous customers and can be found in home automation, white goods, test & measurement, industrial and automotive products. Moreover, the Frankfurt team also has general expertise in GUI development, working with customers’ frameworks on request.

Nuremberg Design Center

Competence Center Embedded Software

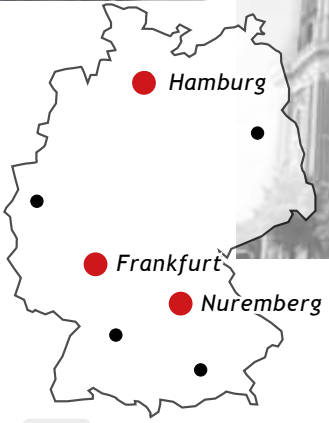
The DC Nuremberg is our competence center for embedded software, executing projects e.g. for automotive, white goods, multi-media and industrial customers, but it is also working closely with the team in Frankfurt on GUI related projects. Apart from this, the DC Nuremberg also accommodates a hardware and an ASIC design team with RF-ASIC experts.

Hamburg Design Center

Competence Center Graphics Rendering Technologies

For quite a number of years, the team in the DC Hamburg has developed innovative rendering technology. From algorithm development to implementation in hardware or software, our Hamburg team can do it!

There is a variety of licensable IP available, either as hardware IP cores or SW-IP. This IP can be found in chips from well known IDMs and via the automotive food chain in some premium cars mainly of German car makers.



Edinburgh Design Center

Competence Center Wireless Software & DECT

The team in Edinburgh specializes on wireless protocols like e.g. DECT, BT, UWB and the likes. TES has its own licensable DECT & CAT-iq protocol stack and has realized numerous products / projects by customizing the stack according to customers' requirements. Examples are intercom systems for point-of-sale applications, Video-over-DECT, HiFi-Audio-over-DECT, DECT headsets and high-end DECT phone systems.

Belgrade Design Center

Extended Workbench for ASIC Design and Software

Our DC Belgrade works as extended workbench mainly in the context of Analog / Mixed Signal & RF ASIC design and Software. The advantage of being only 90 flight minutes away and in the same time zone enables a very close collaboration with the team in Germany.

Sofia Design Center

Extended Workbench for ASIC Design

Our DC Sofia has strong ASIC design expertise in the areas of automotive, power management, lighting technologies and RFID. The team is involved in larger multi-site projects, but also has the skills to perform complete chip designs.

Bangalore Design Center

Competence Center Multi-Media Platforms

Our DC Bangalore represents the Competence Center for Embedded Platforms and Multi-Media. All of our Multi-Media platforms have been developed by the team in Bangalore. Projects include professional navigation equipment, tablets for professional applications and in-flight-entertainment systems. Moreover, the team in India also acts as extended workbench.

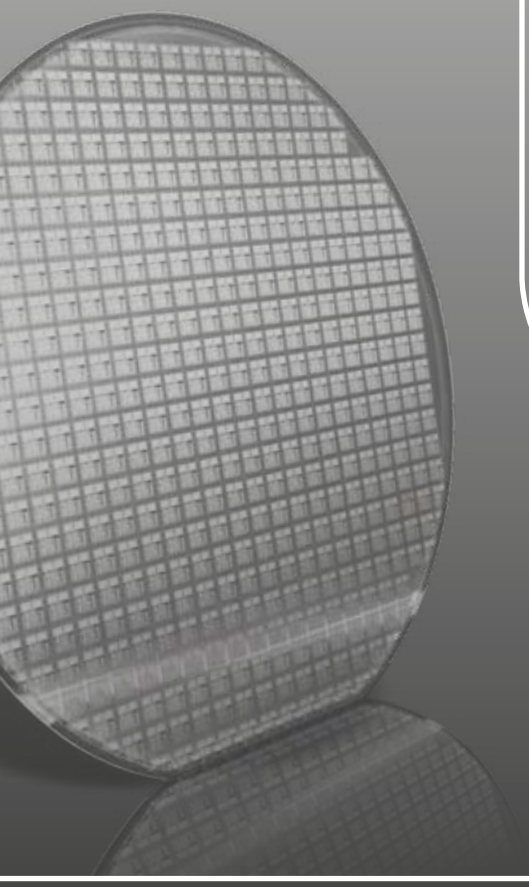
Avisto

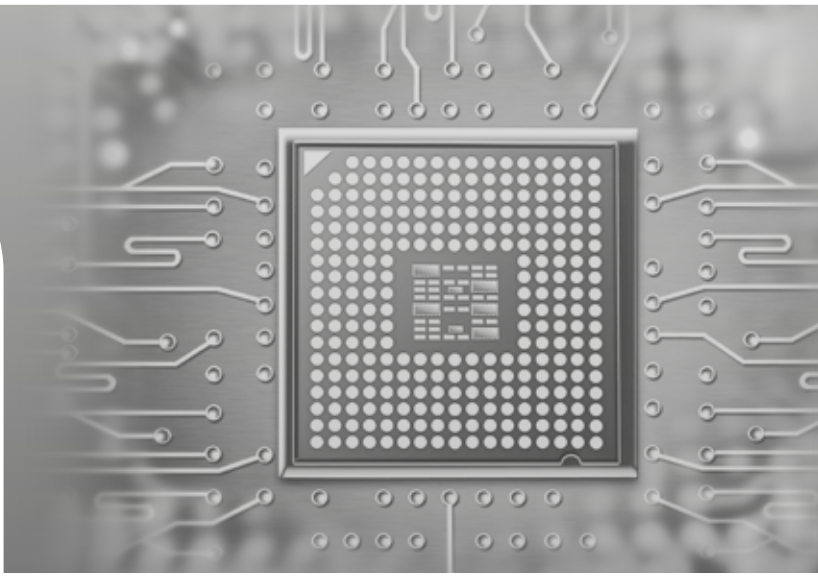
ELSYS DESIGN

MECAGINE

TES Electronic Solutions

ADVANS GROUP





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