# → EMPIRE XPU PACKAGES

**SILVER** PACKAGE
- DATA IMPORT/EXPORT
- TIME SIGNALS
- S-PARAMETERS
- NEAR FIELDS
- PARAMETER SWEEP

**GOLD** PACKAGE
- **SILVER PACKAGE**
- FAR FIELDS
- WAVEGUIDE MODES
- SAR, ACD, EIAV
- OPTIMIZATION
- CIRCUIT SIMULATION

**PLATINUM** PACKAGE
- **GOLD PACKAGE**
- CLUSTER SIMULATION

**BIO** PACKAGE
- **SILVER PACKAGE**
- FAR FIELDS
- SAR, ACD, EIAV
- BODY MODEL POSING
- THERMAL SIMULATION
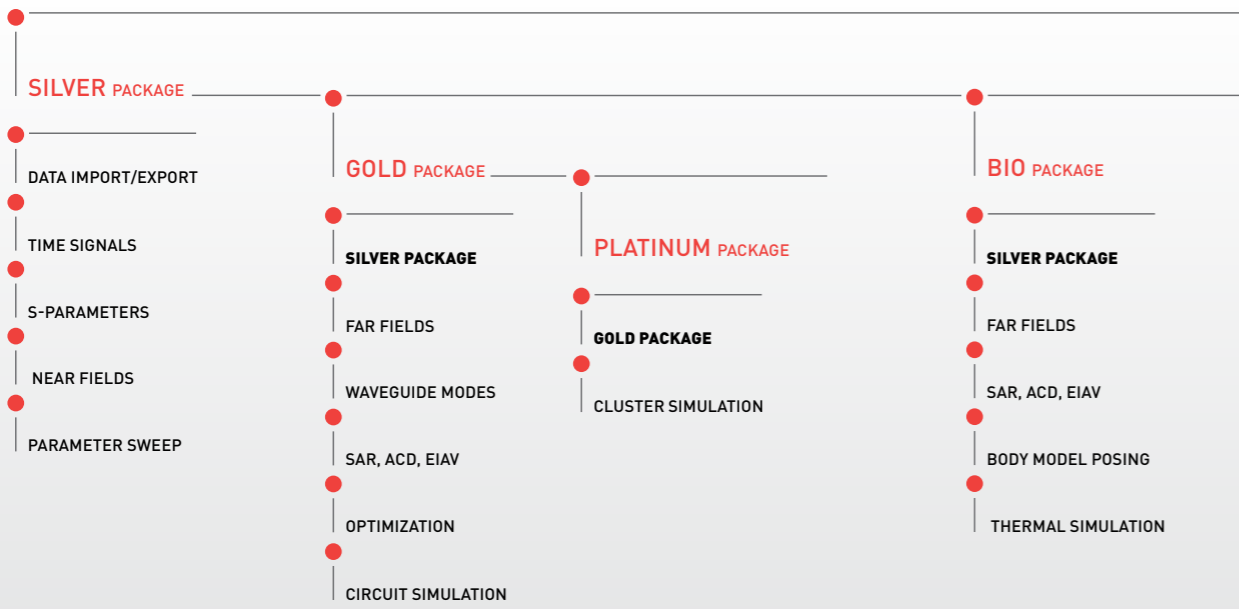
## → SUPPORT

Customers of EMPIRE XPU™ are supported by a group of highly experienced software developers and application engineers. They have access to a pool of more 50 RF design engineers working with EMPIRE on a wide variety of projects at IMST.

EMPIRE XPU™ is distributed worldwide through an extensive network of representatives.
Check **www.empire.de** to find your local dealer.

Strong and experienced local support teams are frequently trained by IMST engineers in order to supply highly qualified first level customer support in no time. The IMST EMPIRE XPU™ support team provides email support with fast reaction time and offers individual training for customers to use the software as effective as possible.
**empire.support@imst.de**
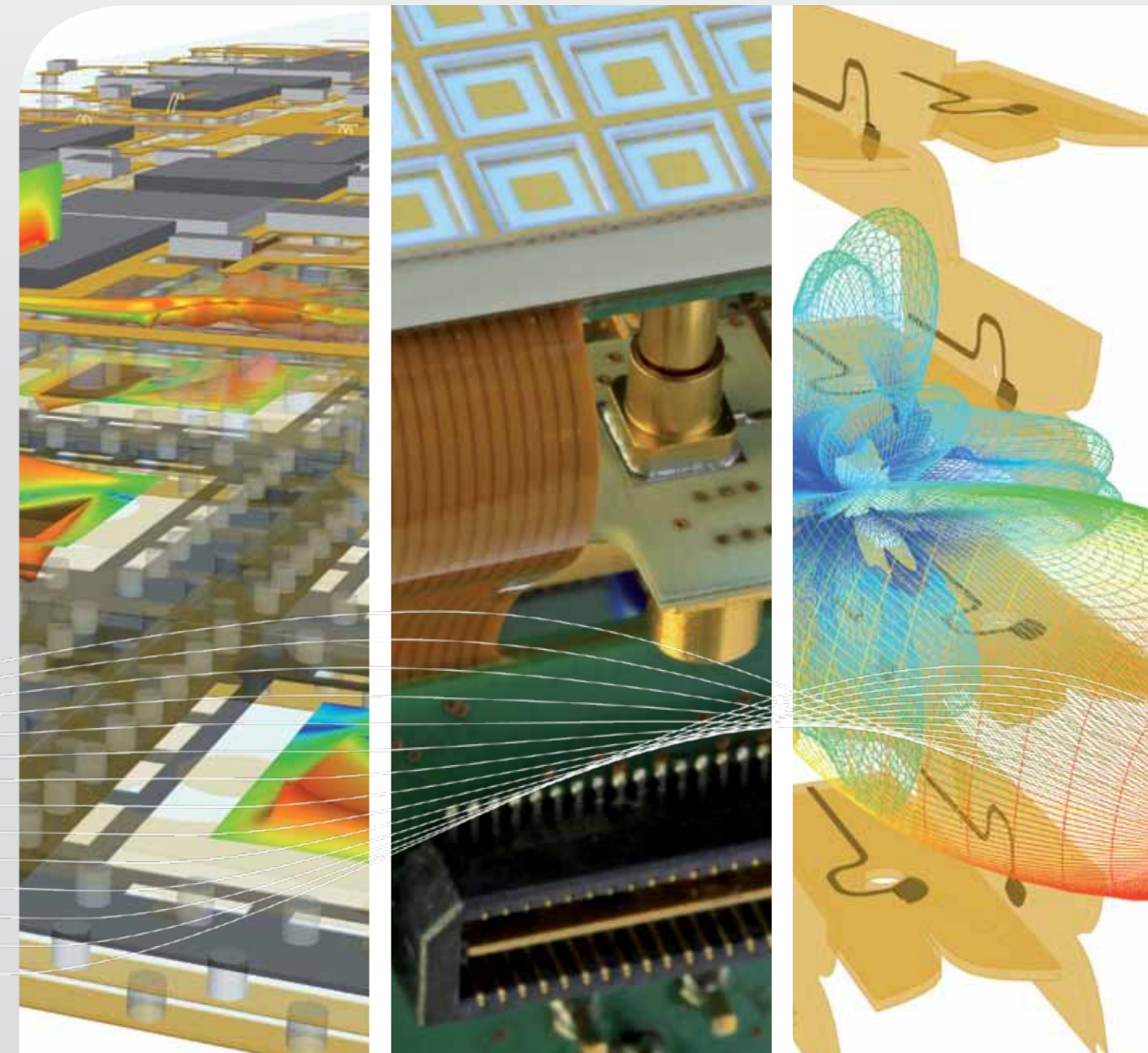
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**I M S T**

# HIGH-PERFORMANCE 3D EM FIELD SOLVER
## → **EMPIRE XPU**

08/2015

**EMPIRE XPU**
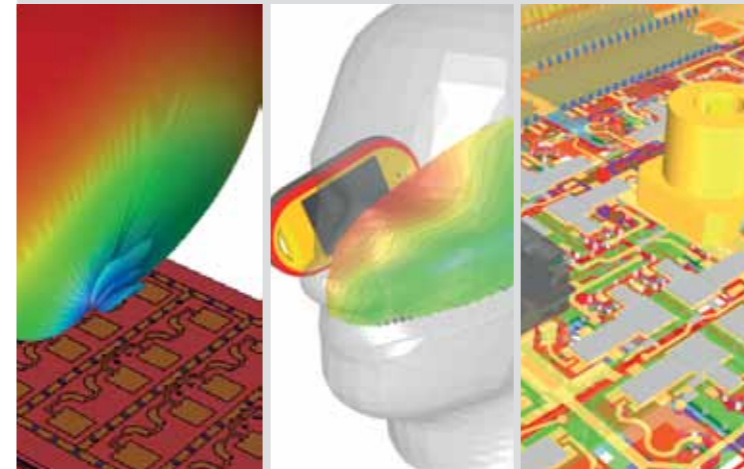
HIGH-PERFORMANCE 3D EM FIELD SOLVER

# → ABOUT EMPIRE XPU

EMPIRE XPU™ – developed by engineers for engineers – is one of the leading 3D electromagnetic field simulators. It is based on the powerful Finite Difference Time Domain method (FDTD), which has become an industrial standard for RF component and antenna design. Due to EMPIRE's unique XPU technology (Accelerated Processor Usage) it exhibits the fastest simulation engine, known today. This one-of-a-kind software utilizes a CPU based workflow, which outperforms GPU hardware acceleration in both speed and memory access. With this highly optimized kernel fullwave EM simulations have seen processing rates of over 9 GCells/sec on a dual CPU workstation.

Please visit **www.empire.de** for more information or to order a free demo.

## → IMST

IMST is a leading design house and development centre for wireless modules, communication systems, chip design, antennas, EDA software, and regulatory certification using an in-house accredited/certified regulatory test centre. IMST offers both standard products such as radio modules with hardware/software as well as complete system and product design. Individualized support during every phase of product development including wireless technologies, from initial consulting to series production is one of the unique selling propositions of IMST.

## → APPLICATIONS

A wide range of applications can be handled efficiently with EMPIRE XPU. Time domain, S-parameters, near and far field data are generated all in one simulation run for a broad frequency range.

- Planar and multi-layered circuits
- Antennas including environment
- Microwave passive components
- RF-MEMS structures
- SI analysis of packages and PCBs
- Antenna arrays
- Radar cross section
- Waveguide components
- HQ resonators
- EMC / EMI
- Circuit simulation
- Thermal analysis
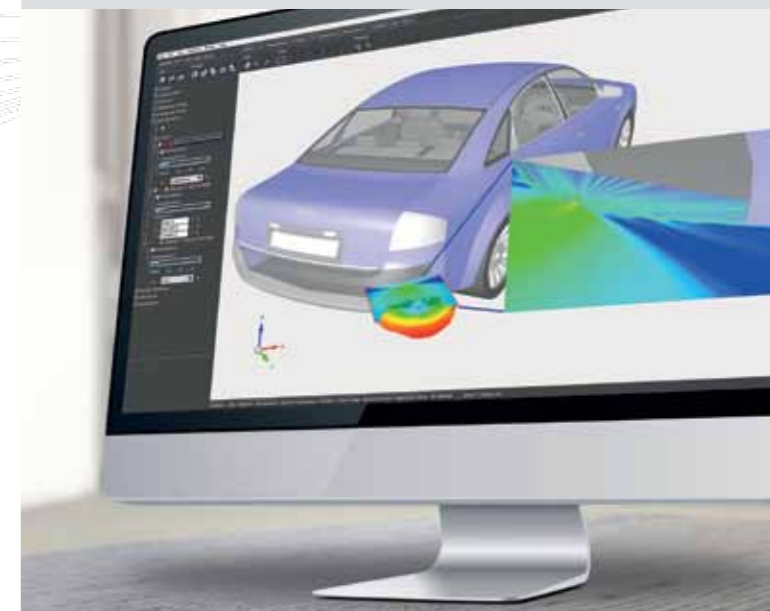- Biomedical applications (imaging devices, implantable devices, field exposure)

## → FEATURES

Many features have been included to meet challenging applications or to simplify the model setup.

- Easy-to-use interface optimized for a fast model set up
- 2D and 3D import and export filters
- Automatic expert-level meshing
- Parametric geometry and properties
- Libraries for sources and objects
- Plane wave, multiple port, waveguide and nearfield sources
- Perfect Geometry Approximation (PGA) for reducing staircase effect
- Thin sheet model for metals
- Batch job queuing, parameter sweep and optimization
- Smart signal processing
- 3D near and far field visualization
- Job distribution (remote control) and job sharing (cluster solver) capability