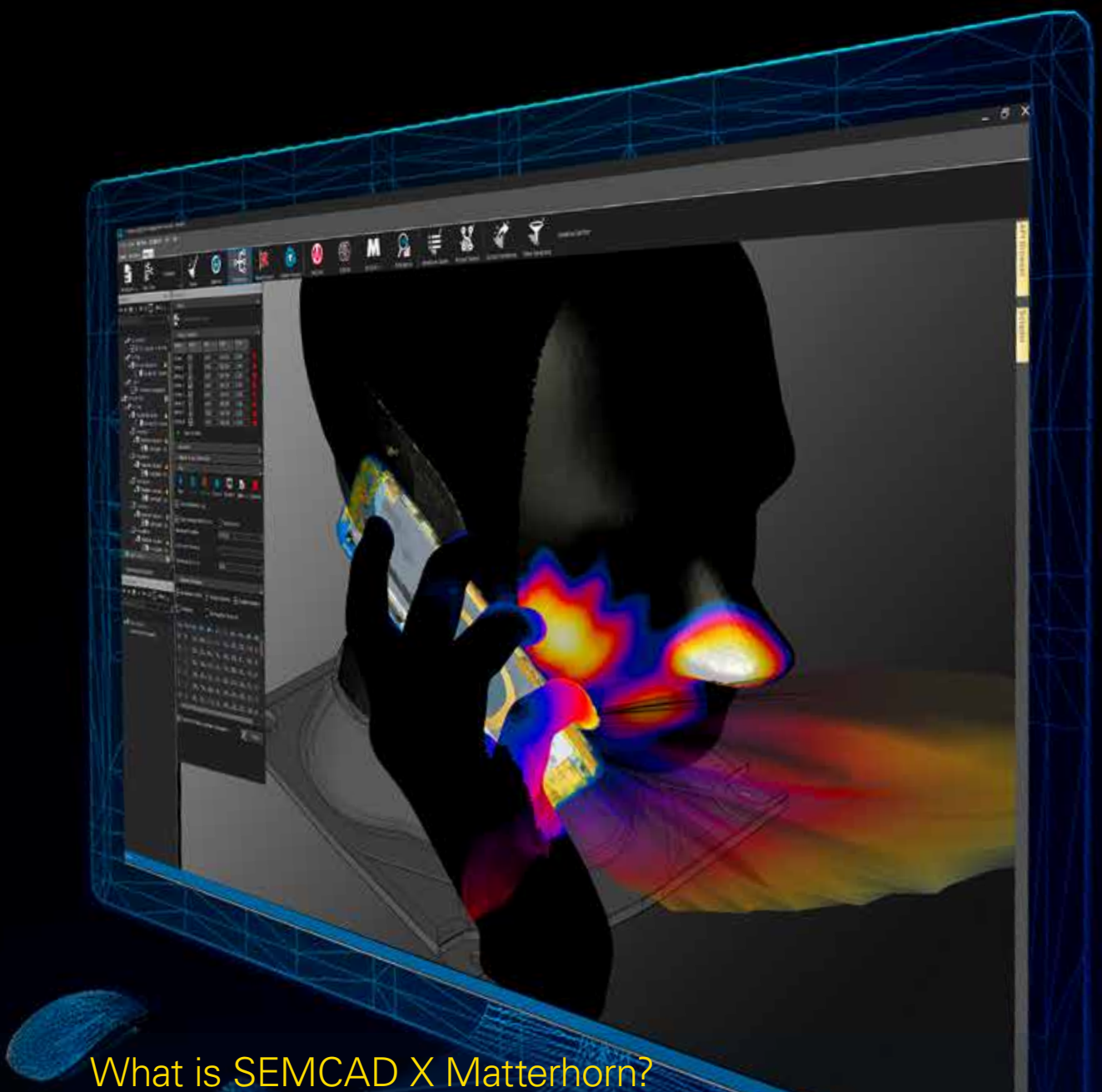
SEMCAD

EM Simulation
Without Limits



What is SEMCAD X Matterhorn?

SEMCAD X Matterhorn is a full-wave 3D EM simulation software, offering a novel suite of seamlessly integrated solutions tailored to address a variety of engineering challenges. It is suitable for a wide range of applications allowing simulations from DC to light, such as safety assessment, EMI/EMC, antenna design & optimization, 5G, WPT, dosimetry, optics and design of microwave and mm-wave waveguide devices. SEMCAD X Matterhorn is the EM-TCAD Solution of Sim4Life, the leading computational life sciences platform.

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Key Applications

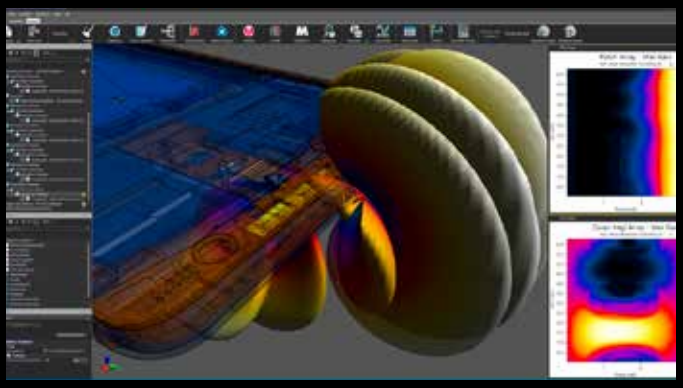
- virtual prototyping and optimization of on-/in-body wireless devices, mobile phones, handsets, net/notebooks, etc.
- design and optimization of 5G systems, demonstration of compliance
- compliant integration of WiBro, WiMAX, WiFi, Bluetooth
- Wireless Power Transfer (WPT) for mobile, automotive, etc.
- Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC)
- Over-The-Air-performance (OTA)
- EMI/EMC and ESD analysis & optimization (e.g., PCB)

Main Features

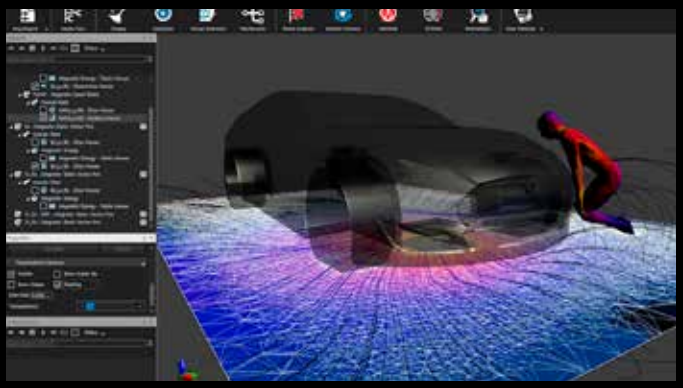
- precision: verified and validated solvers and platforms, benchmarked against "real world" industrial applications and measurements
- speed: fastest, most robust FDTD, FEM, and MM solvers; CPU-GPU, AXE/CUDA, latest PASCAL, VOLTA architecture (e.g., P100, K80, Titan)
- efficient: novel and unique subgridding, structured and unstructured mesh generator
- topical: special 5G simulation package (array designer, SAPD, maximum exposure optimizer, automated design workflows, etc.)
- optimization: parameterization/sweeps, specialized antenna tools
- multi-scale: generalized huygens approach (scaling, micro-macro)
- easy-to-use: novel, interactive, ergonomic GUI with pipelining, etc.
- customizable: customization and automation via Python scripting
- visualization: novel postprocessing engine for data extraction in TD/FD
- export: data transfer via direct interface to cSAR3D, DASY, DAK, ICEy
- upgrades: upgradable to Sim4Life, the leading CLS platform

Student Version

- Sim4Life Light: free-of charge for students to facilitate their understanding of computational modelling and simulations for various topics, ranging from wireless communication to medical applications.



Powerful 5G Design/Optimization Toolset in SEMCAD X empowering performance optimization, beam steering and coverage efficiency.



New unstructured FEM solvers for low-frequency applications such as transmit/receive WPT coil systems.

Sim4Life and SEMCAD X Platforms

Computable Human Phantoms	Physics Models	Tissue Models	Intuitive GUI and Workflow	Licensed Modules
ViP 4.0 (*) Virtual Population	P-EM-FDTD Electromagnetics Full Wave Solvers	T-NEURO (*) Neuronal Tissue Models	MODELER Advanced Modeling Tool Set	MRI (*) IMAnalytics, MUSAIK, SYSSIM, TxCoil, ...
ViZoo 1.0 (*) Animal Models	P-EM-QS Quasi-Static Electromagnetics Solvers	T-CEM43 (*) Tissue Damage Models	MESHER Robust & Effective Meshing	MODELING iSEG, Mesh Editor
3rd-Party Models (*)	P-THERMAL (*) Thermodynamics Solvers		POSER Physics-based Realistic Posing	CALCULATORS Dispersive fitting tool, Analysis calculators
	P-FLOW (*) Fluid Dynamics Solvers		SWEEPER Fully Configurable Parameter Sweeps	TOOLBOX 5G Toolkit, Matching tool MIMO, Multi-band SAR, ...
	P-ACOUSTICS (*) Acoustics Solvers		ANALYZER Versatile Postprocessor and Analyzing Tool Set	IMPORT Huygens, Voxel import Image data import
			PYTHON Control via Python Scripting	OPTIMIZER Multi-Parameter Multi-Goal Optimizer
	High Performance Computing Auto-Scheduler & Control ARES			

(*) Sim4Life only

For further information and technical specifications, visit **www.speag.swiss**

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