

## - PRESS RELEASE -

### CST Previews New Array Design Tool

**Rome, October 7, 2014, CST - Computer Simulation Technology AG (CST) is demonstrating its powerful new antenna array design tool in CST STUDIO SUITE®, the Phased Array Wizard, at European Microwave Week (EuMW) 2014, booth 109.**

Aerospace engineers use CST STUDIO SUITE to design and optimize antennas and arrays, to analyze their installed performance, and to calculate crosstalk interference between antenna systems. The upcoming release of CST STUDIO SUITE 2015 will significantly enhance its antenna design offering with the integration of the new Phased Array Wizard.

Their efficiency and flexibility mean that antenna arrays are beloved by engineers who need to design high-performance antennas with low power consumption and compact size. However, the number of elements involved and the complexity of the interactions between elements can make arrays difficult to design. The Phased Array Wizard allows users to create arrays from single elements. It complements the antenna synthesis features available in Antenna Magus for a fuller array design workflow.

The wizard first sets up a “unit cell simulation” project for the single element, from a small number of parameters that describe the geometric arrangement of the unit cell and the required scan angles. The unit element can be directly modelled in CST STUDIO SUITE or imported from Antenna Magus from Magus Pty. In phased array design, all valid scanning directions have equal importance. The array needs to work well for any scanning angle, and it's the worst case performance over all possible angles that is of interest. The primary outputs of the infinite array simulations are the active element impedance and the active element pattern, which can be used for optimization for all scan angles and frequencies. This pattern can be multiplied by an array factor to predict how the full array might perform.

Once the individual element has been optimized, the Phased Array Wizard can produce a full 3D model of the entire array, together with the excitation. Elements can be omitted and set to passive by simply selecting them on a map. Edge and corner elements are accounted for in this finite array simulation, and the user can also specify other parts of the system – e.g. feed or calibration lines – and geometric elements like mounting brackets or a radome. The 3D model can be used to generate accurate nearfield and farfield sources, with the main lobe directed at different scan angles, for further analysis – for example, an antenna placement study.

CST will be demonstrating the Phased Array Wizard on their booth, #109, as part of the CST STUDIO SUITE live demonstrations. For an overview of all booth presentations see [www.cst.com/EuMW-flyer](http://www.cst.com/EuMW-flyer) or visit the CST booth, 109, and pick up a leaflet.

*“Antenna array design is an area that many of our users are actively working in,”* commented Dr. Marc Rüttschlin, Market Development Manager MW&RF, CST. *“The Phased Array Wizard in CST STUDIO SUITE 2015 will make array design and analysis significantly easier, and offers great productivity advantages to our customers.”*

### **Availability**

CST STUDIO SUITE 2015 is due for release at the end of Q1 2015.

### **About CST**

Founded in 1992, CST offers the market’s widest range of 3D electromagnetic field simulation tools through a global network of sales and support staff and representatives. CST develops CST STUDIO SUITE, a package of high-performance software for the simulation of electromagnetic fields in all frequency bands, and also sells and supports complementary third-party products. Its success is based on a combination of leading edge technology, a user-friendly interface and knowledgeable support staff. CST’s customers are market leaders in industries as diverse as telecommunications, defense, automotive, electronics and healthcare. Today, the company enjoys a leading position in the high-frequency 3D EM simulation market and employs 250 sales, development, and support personnel around the world.

CST STUDIO SUITE is the culmination of many years of research and development into the most accurate and efficient computational solutions for electromagnetic designs. From static to optical, and from the nanoscale to the electrically large, CST STUDIO SUITE includes tools for the design, simulation and optimization of a wide range of devices. Analysis is not limited to pure EM, but can also include thermal and mechanical effects and circuit simulation. CST STUDIO SUITE can offer considerable product to market advantages such as shorter development cycles, virtual prototyping before physical trials, and optimization instead of experimentation.

Further information about CST is available on the web at <https://www.cst.com>.

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### **Downloads**

- Graphics are available to download from [https://www.cst.com/Content/News/news\\_item\\_212/2014-10-EuMW-array.zip](https://www.cst.com/Content/News/news_item_212/2014-10-EuMW-array.zip)  
“A dual-polarized array of Vivaldi antenna elements for satcoms, designed and simulated with the Phased Array Wizard.”

### **Trademarks**

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