

## **Simulis Thermodynamics: A Cape-Open Compliant Framework For Users And Developers**

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Simulis<sup>®</sup> Thermodynamics is a thermophysical calculation server that generates highly accurate pure component and mixture properties (thermodynamic, transport, compressibility...) and fluid phase equilibrium (liquid-vapor, liquid-liquid and liquid-liquid-vapor). The component-oriented approach of its architecture is based on the Microsoft<sup>®</sup>'s COM/DCOM middleware. One main benefit of Simulis<sup>®</sup> Thermodynamics is its CAPE-OPEN compliance through its CAPE-OPEN thermodynamic plug and socket facilities. The CAPE-OPEN Thermodynamic specifications 1.0 and 1.1 have been both implemented and validated. Another main benefit is the capability to use legacy codes either as a DLL (Dynamic Link Library) following a standard syntax, either as VB Script (Visual Basic Script) directly written from the Simulis<sup>®</sup> Thermodynamics' environment. The standard version of Simulis<sup>®</sup> Thermodynamics is provided as an add-in in Microsoft<sup>®</sup> Excel and as a toolbox in MATLAB<sup>®</sup> and enables the user to run complete thermodynamic calculations in these applications, but it can also be plugged in any legacy code using the SDK (Software Development Kit). Also, beside the description of all these different features, several examples will be presented.