World's most popular open source numerical computation platform

Exclusive provider of industrial-grade end-to-end training, migration, support, and consulting services

Now customers can take advantage of our powerful open source software without any of the risks
The SCILAB Product Family provides the most powerful, flexible, numerical analysis, visualization and simulation solutions for engineers and scientists, at a fraction of the cost of other solutions.

Whether you are working in signal processing, statistical analysis, image enhancement, fluid dynamics simulations, numerical optimization, or a whole range of other applications, SCILAB solutions can help make you more productive. SCILAB also includes Xcos for modeling and simulation of explicit and implicit dynamical systems, including both continuous and discrete sub-systems.

**Scilab** includes hundreds of mathematical functions. It has a high level programming language allowing access to advanced data structures, 2-D and 3-D graphical functions. A large number of functionalities are included in Scilab: control, simulation, optimization, signal processing, and others. Xcos, the hybrid dynamic systems modeler and simulator is provided with the platform.

**Scilab** is a high-level, numerically oriented programming language. The language provides an interpreted programming environment, with matrices as the main data type. By utilizing matrix-based computation, dynamic typing, and automatic memory management, many numerical problems may be expressed in a reduced number of program lines, as compared to similar solutions using traditional languages, such as FORTRAN, C, or C++. This allows users to rapidly construct models for a range of mathematical problems. While the language provides simple matrix operations such as multiplication, Scilab also provides a library of high-level operations such as correlation and complex multidimensional arithmetic.

**Advanced Signal Processing**

Do you need to quickly develop, refine and test new techniques for audio, image and video processing?

Work with a wide range of signals including audio, images, videos, sensor data, biological data, control system, and telecommunication transmission.

Perform complex filtering, smoothing, pattern recognition, prediction, correction, and digitization.

Add functionality from over 15 toolboxes dedicated to advanced signal processing.

**Algorithm Development**

Do you need to quickly develop, refine and validate complex algorithms?

Leverage hundreds of computation functions to quickly experiment with new algorithm schemes.

Test algorithms under stressful "what if" scenarios.

Integrate algorithms into real environments with hardware in the loop and code generation toolboxes.

```
Amp = max(abs(x))
flg = 1;
while flg ~= 2
    disp('Enter SNR (dB)'
    SNR = x_matrix('SNR',
    Amp_noise = Amp/(10^(-SNR))
    noise = Amp_noise*rand
```

**Open Source Software for Numerical Computation**

**Equalis & TechPassion**
Control Systems Simulation

Do you need to quickly design, analyze and optimize control systems to manage, direct and regulate behavior of devices or systems?

Packed with capabilities to design, model, and analyze linear systems, non-linear systems, optimal, adaptive, and robust controls.

Dozens of control blocksets included as well as the ability to create custom control algorithms.

Model complex dynamic systems in Xcos.

Data-Driven Analysis and Visualization

Do you need to analyze large data sets in order to predict interactions or visualize results?

Connect to external data sources like Excel and databases.

Create easy to use applications that hide the computational complexity and can be freely distributed to colleagues in other groups, functions, or companies.

Dozens of plotting and graphic functions enable you to easily visualize and share results.

Embedded Systems

Do you need to develop complex systems that are embedded in controllers, microprocessors, or FPGAs?

Verify designs prior to implementation and reduce development costs.

Save time by generating code that can then be optimized for the target device.

Find run-time errors early in the design process.

Mechatronic Systems

Do you need to develop complex systems that require the integration of mechanical, electrical, and control subsystems?

Model complex physical systems in Xcos using pre-configured building blocks that reflect key electrical and mechanical components.

Quickly create real-world interactions between disparate subsystems.

Reduce hardware prototype iterations by finding integration and design problems early in the development process.

Test and Measurement

Do you need to generate, acquire, visualize, and analyze real-time waveforms from test equipment?

Create your own test applications and systems.

Automate signal generation, measurement and reporting.

Customize waveforms, measurements and data analysis.

Image Processing

SIP is a toolbox for processing images in Scilab. SIP is meant to be a free, complete, and useful image processing toolbox for Scilab. It has in-built functions to do filtering, blurring, edge detection, thresholding, histogram manipulation, segmentation, mathematical morphology, and color image processing.
Resource and Support

Online User Community
http://www.equalis.com/?page=Community

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For More Information, on Scilab products and support http://www.equalis.com/

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