



Open wireless sensor network platform

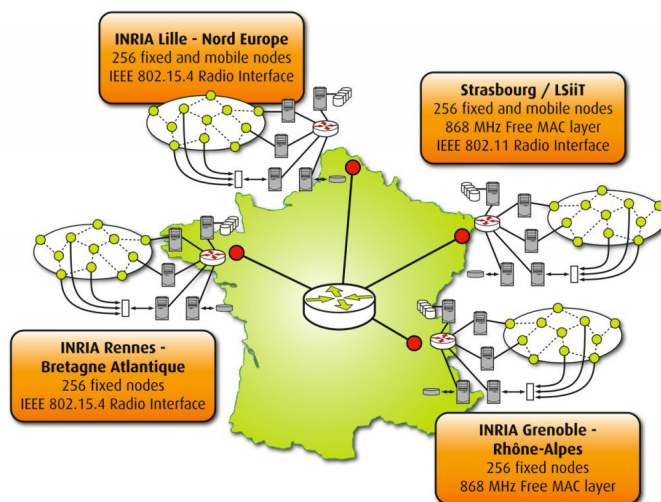
SensLAB testbed

Large-scale testing

The SensLAB testbed offers an accurate and efficient scientific tool to help in the design, development, tuning and experimentation of real large-scale sensor network applications.

The platform consists of a group of over 1,000 sensor nodes available as a testbed for distributed embedding sensor network applications and distributed systems research. Distributed systems based on networked sensors and actuators with embedded computation capabilities allow for the instrumentation of the physical world at an unprecedented scale and density, thus enabling a new generation of monitoring and control applications.

The SensLAB project was started in 2008. As of June 2009, SensLAB was composed of 1024 nodes at four separate sites in France.



Location and specifications of SensLAB's four testbeds.

Ambient and sensor networks have recently emerged as a premier research topic. Sensor networks are a promising approach and a multi-disciplinary venture that combines computer networks, signal processing, software engineering, embedded systems, and statistics on the technology side. On the scientific applications side, they cover a large spectrum: safety and security of buildings or spaces, measuring traffic flows, environmental engineering, and ecology, to cite a few. Sensor networks will also play an essential role in the upcoming age of pervasive computing as our personal mobile devices will interact with sensor networks distributed in our surrounding environment.

Benefits

Very large-scale testbed

> Run your experiment on up to 1024 nodes spread over four different sites without the need to manipulate each node individually.

Automated deployment

> Describe your experiment in an online form, choosing node numbers/topology and associating nodes with firmwares. Your code will be flashed automatically at the beginning of your experiment.

Live interactions during experimentation

> Interact with SensLAB nodes directly from your computer: start, stop, reset and programme nodes or use the serial link to communicate even with nodes that are physically distant.

Non-intrusive monitoring and noise injection

> Define monitoring for power consumption, polling of sensor measures or radio noise injection without having to integrate these functionalities into your code.

Open testbed

> No specific operating system, MAC layer or/and program language imposed. SensLAB provides drivers, MAC layer implementations and OS ports that you are free to use or not.

Accounts are available to persons affiliated with corporations and universities that host SensLAB nodes but also to any researchers for R&D purpose on request.

SensLAB members actively participate in developing tools for the greater good of the community, and as a result each user has a wide choice of tools to use in order to design, compile, simulate, emulate, debug his/her embedded sensor application. There are a number of free, public services/ tools/ package have been deployed on SensLAB, including drivers, OS portage, network simulator (VSNET) and a software-driven simulator for full platform estimations and debu (WSIM). For more information contact the SensLAB team at senslab@senslab.info.

They already use SensLAB

INRIA Lille - North Europe, INRIA Rennes - Bretagne Atlantique, INRIA Grenoble - Rhône Alpes, Université de Strasbourg, Thales Communications, University of Cape Town, UC Berkeley.

SensLAB is partially funded by the F-Lab project. Supported by the French National Agency (ANR) in the framework of its Future Networks and Services programme, VERSO, F-Lab works towards enabling an open, general-purpose and sustainable large-scale shared experimental facility that fosters the emergence of the Future Internet. Project partners include some of France's top academic and industrial research institutions, working together to develop experimental facilities on the Future Internet, and additional funding is provided by ICT clusters Systematic and SCS. For more information visit us at www.f-lab.fr.

How to join us

Members

About F-Lab

