

# SIMSEN



## Sensors Simulator

SIMSEN simulates acoustic, magnetic and electric sensors generating synthetic signals, coherent with a configurable underwater scenario.

SIMSEN provides the generated signals to any acoustic or multi-influence processing and analysis system.



### Purposes:

Students education about techniques and algorithms related to the processing of the signal generated by sensors such as hydrophones.

Investigation and improvement of algorithms for acoustic, electrical and magnetic signal processing.

Courses and seminars based in signal processing.

Courses and seminars based in acoustic or multi-influence underwater environment.

Several configurations depending on the type of simulated sensors:

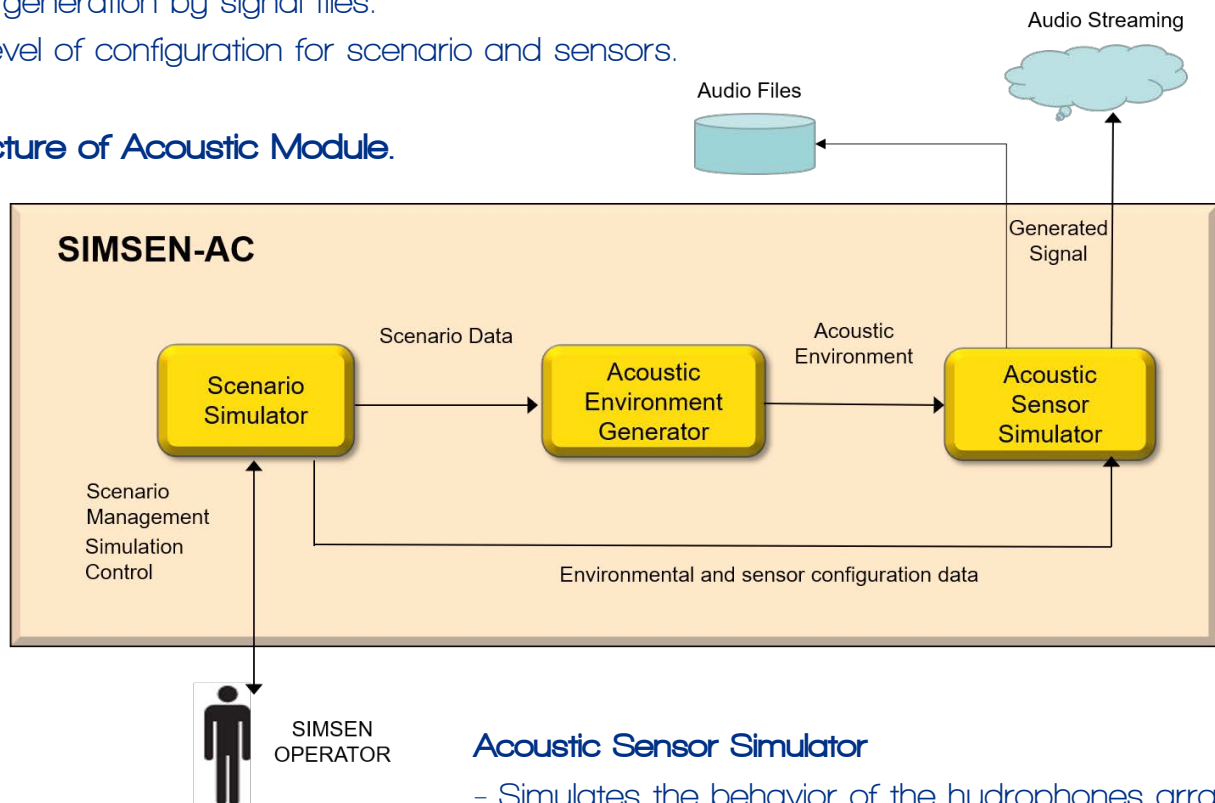
- acoustic
- magnetic
- electric

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- acoustic
  - magnetic
  - electric

## Main Features

- HW COTS, scalable.
- Real time signal generation by signal streaming.
- Signal generation by signal files.
- High level of configuration for scenario and sensors.

## Architecture of Acoustic Module.



## Scenario Simulator

Control of simulation and definition of:

- Geographical Area.
- Entities: type, acoustic signature, behavior.
- Environmental and sea acoustic parameters.

## Acoustic Sensor Simulator

- Simulates the behavior of the hydrophones array defined by operator, generating acoustic signals coherent with geometry and location in the scenario.
- Acoustic sensors: array (lineal, cylindrical) or individual hydrophones.

## Acoustic Enviroment Generator

Simulates the signal propagation between emisors and receptors by using SAES Acoustic Propagation models with international validation.

