

Pierre Aumond

22th June 2025, Malaga



Open research & Env Noise Directive



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EURONOISE 2025



Open-Tools for END / CNOSSOS-EU

No Open Data Standards

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NMS – Open Data Standards

SEA EAA

- There are no open data standards for noise models which met all the requirements of the NMS
- Open data standards help manage the flow of data through the NMS, and support interoperability with third party GIS and noise mapping software
- Existing spatial data, input data and output data standards, policy & regulatory requirements, government policy on open standards, Defra data principles, and published noise mapping data schemas, were reviewed including:
 - INSPIRE, GEMINI, ISO 19100 series, ISO 196500 series, ISO 17534, ISO 15836, COVADIS and EEA Reportnet 3 noise reporting templates
 - CadnaA, dBmap.net, eNoise City GML, DIN 45687, IMMI, LimA, MithraSIG, noise3D.net, NoiseMap, NoiseModelling, ODEN, Predictor/iNoise, SoundPlan
- Conceptual and logical data models were developed for data flowing in and out of the NMS
- The content and format of open data standards were proposed for a range of data layers supporting CNOSSOS-EU, CRTN and CRN, alongside proposals for metadata

Source
Adapt In
Transform In
Canonical
Transform Out
Adapt Out
Target

M M
MOTT
MACDONALD

Open Tools ?



NoiseModelling



NoiseModelling

QGIS - Noise Prediction



NoiseModelling

QGIS - Noise Prediction



Noise Prediction

Plugin ID: 2605 

This plugin estimates the noise level by distances and barriers as BS:5228 standard.

☆☆☆☆☆ (28) votes

 Download latest

About

Details

Versions

Author:

Htet Arkar Soe

Tags:

python

noise

bs5228

Tracker:

[Browse and report bugs](#)

Latest stable version:

1.1

Maintainer:

htetarkarsoe

Plugin home page:

<https://github.com/geohtet/Noise-Prediction-Algorithm/...>

Code repository:

<https://github.com/geohtet/Noise-Prediction-Algorithm>

NoiseModelling

QGIS - OpenNoiseMap



OpeNoise Map

Plugin ID: 480 

opeNoise Map allows to compute the noise level generated by point source or by road source at fixed receiver points and buildings.

★★★★★ (85) votes

 Download latest

About

Details

Versions

The plugin allows to compute the noise level generated by point source or by road source at fixed receiver points and buildings.

Please consider the following condition:

- geometrical divergence
- atmospheric absorption ISO 9613-1
- pure diffraction without ground effects, for horizontal and vertical obstacles
- modelization is 3D

NoiseModelling

QGIS - OpenNoiseMap

QGIS - H-Risk with NoiseModelling

Use NoiseModelling inside QGIS, with a GUI

Warning → NoiseModelling is not 100% implemented

QGIS Plugin :

<https://plugins.qgis.org/plugins/hrisk-noisemodelling-master/>





H-RISK with noisemodelling

Plugin ID: 2964

Sound levels and Health risks of environmental noise

★★★★★ (9) votes

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[About](#) [Details](#) [Versions](#)

This plugin helps in fetching geometries to calculate sound levels from environmental noise, calculating the sound levels, and evaluating health risks.
For use, NoiseModelling (<https://noise-planet.org/noisemodelling.html>) must be prepared.
See README of the repository.

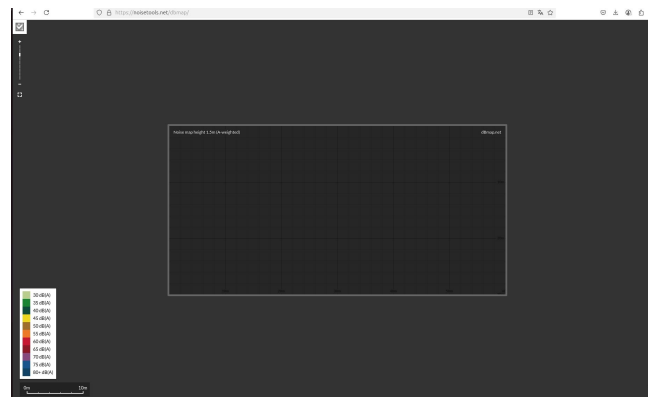
NoiseModelling

QGIS - OpenNoiseMap

QGIS - H-Risk with NoiseModelling

dBMap.net

freeware



NoiseModelling

QGIS - OpenNoiseMap

QGIS - H-Risk with NoiseModelling

dBMap.net

Code_TYMPAN

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Code_TYMPAN

Open source software calculating industrial noise in the environment
Brought to you by: [codetympan](#)

[Add a Review](#) [Downloads: 8 This Week](#) [Last Update: 2025-01-31](#)

 **Download**

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 [Get an email when there's a new version of Code_TYMPAN](#) [Next](#)

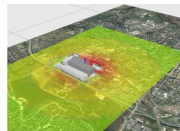
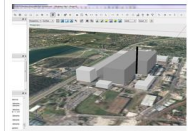
[Linux](#) | [Windows](#)

Summary	Files	Reviews	Support	External Link	Mailing Lists
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Code_TYMPAN™ is an open source software for calculating industrial noise in the environment. It allows dealing with 3D realistic geometries and has a convenient Human Machine Interface to help engineers to build 3D models and to achieve analysis needed in environmental noise studies. Code_TYMPAN™ allows developing your own calculation method from basic components and geometrical solvers. It includes a solver based on ISO 9613 extended to industrial applications.

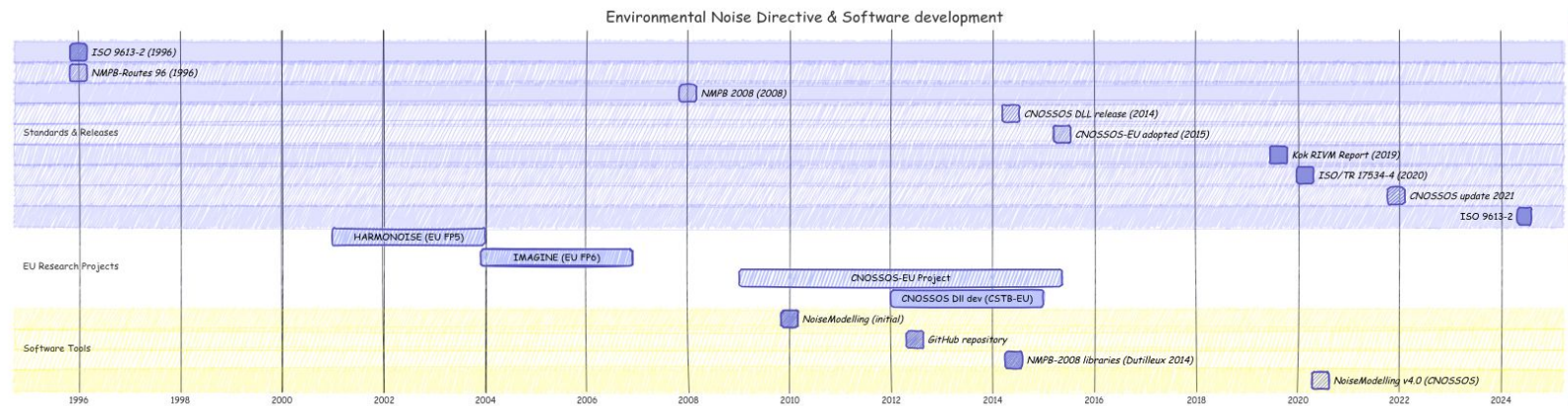
In 4.2.x version, a Python API allows advanced users to build and solve models programmatically. By this mean, developers have the capability of building new tools with acoustic features with high productivity.

Project Samples



NoiseModelling
QGIS - OpenNoiseMap
QGIS - H-Risk with NoiseModelling
dBMap.net
Code_TYMPAN
?

CNOSSOS.dII - short reconstructed story



“We already try Open-Research in Env. Acoustics during Harmonoise...”, 2024

Partly true & no package for directive 2021



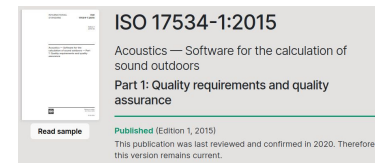
Software quality

ISO 17534

- at the beginning software some claiming to use CNOSSOS.dll
- Then respect the ISO 17534
 - Issues inside ISO document ?
 - Compliant with ?
 - not fully transparent
- Now German softwares A-QNS



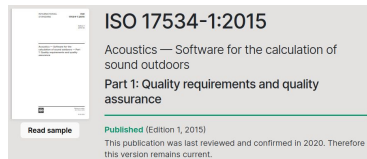
- The ISO is actually in revision



Test Case	Conform ?	NLD Conform ?	Largest Deviation	Details
TC01	☒	☒	0.00 dB @ 2000 Hz	TC01
TC02	☒	☒	0.07 dB @ 1000 Hz	TC02
TC03	☒	☒	0.05 dB @ 500 Hz	TC03
TC04	☒	☒	0.07 dB @ 1000 Hz	TC04
TC05	☒	☒	0.00 dB @ 1000 Hz	TC05
TC06	☒	☒	0.06 dB @ 500 Hz	TC06
TC07	☒	☒	0.02 dB @ 1000 Hz	TC07
TC08	☒	☒	0.02 dB @ 1000 Hz	TC08
TC09	☒	☒	0.01 dB @ 250 Hz	TC09
TC10	☒	☒	0.02 dB @ 250 Hz	TC10
TC11	☒	☒	0.02 dB @ 125 Hz	TC11
TC12	☒	☒	0.04 dB @ 500 Hz	TC12
TC13	☒	☒	0.01 dB @ 500 Hz	TC13
TC14	☒	☒	0.04 dB @ 8000 Hz	TC14
TC15	☒	☒	0.06 dB @ 250 Hz	TC15
TC16	☒	☒	0.00 dB @ 2000 Hz	TC16
TC17	☒	☒	0.05 dB @ 500 Hz	TC17
TC18	☒	☒	0.02 dB @ 500 Hz	TC18

So what ?

- Reference code, good idea
 - but if no maintenance ?
- Revision of ISO method ?
 - add emission
 - ...
- Measurement tests ?
 - Scale models
 - measurement database
- “Reference model” comparaison ?
- Round robin (since 1995 for room acoustics !)...
- A-QNS



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