

# BRUIT-FM Yearly Report

Year 3: Feb 2024 – Feb 2025

## Major events

The year was perturbed by the process of iXblue/eXail's departure from the consortium, a process which officially started in October 2023 (M21) and ended in December 2024 (M35). This process has greatly affected Ifremer's ability to receive payment and IPGP's ability to implement solutions to replace the project associated with iXblue (T4.1).

Retrait de Grenoble signal processing collaborators (fevrier 2024).

To improve the signal processing part of WP4 and to replace its rotational seismometer action, we proposed three actions:

- The BRUIT-FM noise challenge, an international challenge to remove noise and calculate compliance from sample data sets provided on the bruit-fm website (**14,9k€**)
- The addition of **12k€** for internships, to allow signal processing colleagues to hire graduate students in order to apply their methods to the Noise Challenge data
- The addition of a tender for outside companies to draft a proposal for the best rotational seismometer technology to install in a BBOBS (**40 k€**)

The funding of these three additions comes from the money originally slotted for the rotational seismometer work: 39,5k€ originally slated for eXail and 28k€ already at IPGP.

October 2023, Hiring of Zongbo Xu, WP3 postdoc.

Submission of articles by Zongbu Xu, Richard Dreo and Mohammad-Amin Aminian

## Contractual and scientific effects of eXail's departure:

iXblue was purchased by the Gorgé group in September 2022, was fused with ECA Group and named eXail in 2022. The new direction did not wish to continue research on rotational seismometers and requested to leave the consortium in May 2023. We discussed the conditions of their retirement and formulated a plan to replace their work across the summer.

In October 2023, we submitted a proposition for the transfer of funds and replacement of work to the ANR. This proposition included

- the transfer of funds from eXail to IPGP (form 2a),
- the "retrait d'un beneficiaire (form 3c)
- A scientific report on the work already performed
- A "scientific or administrative justification" for the redistribution of funds.

- A “releve des depenses finale » from eXail.

We received an acceptance email of from the ANR in November, but heard nothing further and, moreover, saw no changes on the ANR project management web space.

In March 2024, we recontacted the ANR, which informed us in April that they were missing two budget documents from eXail. After a few exchanges of emails and unaccepted forms, we forwarded acceptable forms to ANR in mid-June 2024.

- On 12 November 2024, the “transfert de fonds” (2a) form was marked as “cancelled”
- On 20 December 2025, the “retrait d’un beneficiare” (3c) form was marked as “processed” and, a budget “Modifying document no.1” was established, augmenting IPGP’s support by 39 460,8€

We also needed to work on the consortium agreement, which had never been signed because of eXails retirement from the consortium. Now IPGP didn’t see any reason to sign a consortium agreement because there was no longer a private company in the consortium. However, switching to a fully public consortium would require Ifremer to fully restructure its budget, and we had agreed with the ANR to keep the consortium “private” in order to avoid this. Many emails were exchanged on this subject, the last I saw was on 4/12/2024, from IPGP, agreeing to sign the consortium agreement. Sent something in mid-December, in discussion since within “service juridique” d’Ifremer. At this date, Ifremer has still received no money.

## Budget

At the start of Year 3, remaining funds were:

IPGP: 120k€ : 33 325 Missions, 39 666 Prestation Externe, 4 629 equipment, 42 480( ?) personnel  
IFREMER:  
eXail: 39 460€

Year 3 expenses were:

IPGP: 82 116? salaries, travel, publication fees,

At the start of Year 4, remaining funds are:

Ifremer  
IPGP

## Starts and ends of project-funded contracts

Simon Rebeyrol: May 2022 to August 2023

Zongbo Xu: October 2023-October 2025 (24 months)

Richard Dreo: October 2022 – October 2025 (36 months @ 50% time)

## State of Tasks and Deliverables

### Finished

- D1.1 (kick-off meeting),
- D1.2 (open source guidelines, M6 version),
- D1.3 (periodic reports 1, 2, 3),
- D4.1 (report on rotational seismometer integration in BBOBS, replaced by scientific report submitted with “retrait de beneficiaire)
- D2.1: catalog of available OBS data and characteristics: online at [bruit-fm.org/datasets](http://bruit-fm.org/datasets)
- D4.2: Open source software for noise separation and removal (3 sites: tiskitpy, bruit-fm toolbox and compy)

### Underway

- D3.2, 4.3, 5.2: Scientific Articles and reports (Reyberol et al. (2024), Aminian et al (submitted), Dreo et al. (submitted))
- D2.2 : Low and high noise reference levels for OBS

### Not yet underway

- D3.1, 4.3, 5.1: Catalogs of wave-generated, seafloor and soundscape noise sources
- D2.3 Seismological noise source catalog

### Added

- Specifications of ideal seafloor rotational seismology system
- Bruit-FM challenge meeting and article

### Work done

Article of Rebeyrol, AGU, EGU. Articles submitted Le Bris et al. (Antarctic), Aminian, Xu, Dreo.  
Start of noise study

### Timeline

### Published articles and Scientific Presentations

Rebeyrol S., Ker S., Duval L., Crawford W. C., 2024. Revisiting the OBS seafloor compliance signal removal with a stationarity and stacking-based approach: the BRUIT-FM toolbox. *Geophys. J. Int.*, 239, 386-401, <https://doi.org/10.1093/gji/ggae265>.

Crawford W. C., Ker S., Stutzmann E., Rebeyrol S., Aminian M.-A., Barruol G., 2024. The BRUIT-FM Seafloor Noise Reduction Challenge. AGU Fall Meeting.

Completer

## To do for Year 4

- Request 1-year extension to cover lost time in the consortium agreement and replacement of iXblue project.