

EIDA Availability Report

Created at 08-01-2026 00:32

This document contains results of automated tests of the waveform availability of European EIDA stations and the responsiveness of the EIDA servers to metadata requests.

Description of waveform test program

Availability test of EIDA stations using Python obspy library.

- Conducts random waveform requests to single channels of EIDA stations.
- One request per minute.
- Requested time span randomly selected from last year, span length between 60 and 600 s.
- Station randomly selected from the subset of unrestricted European EIDA stations offering at least one out of channels HHZ, BHZ, EHZ or SHZ.
- Request full station metadata from selected station and choose channel randomly, restricted to channels HH?, BH?, EH? and SH?.
- On successful request apply a restitution to the waveform data.
- Evaluate and store result of request in a file database.
- Plot and statistically analyze content of file database.

The code does not use the waveform catalog, therefore empty waveform returns are due to data gaps or due to problems in data access and delivery.

Statistics on waveform tests

Statistics on random requests between 08-10-2025 and 08-01-2026 00:32 using station metadata valid since 08-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3290
- evaluated stations: 3182
- number of requests: 123153

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 123153 random requests between 08-10-2025 and 08-01-2026. The availability displayed is computed as the relative number of request results with status OK (see table below) compared to the number of all requests to this station.

EIDA waveform response statistics (260108)

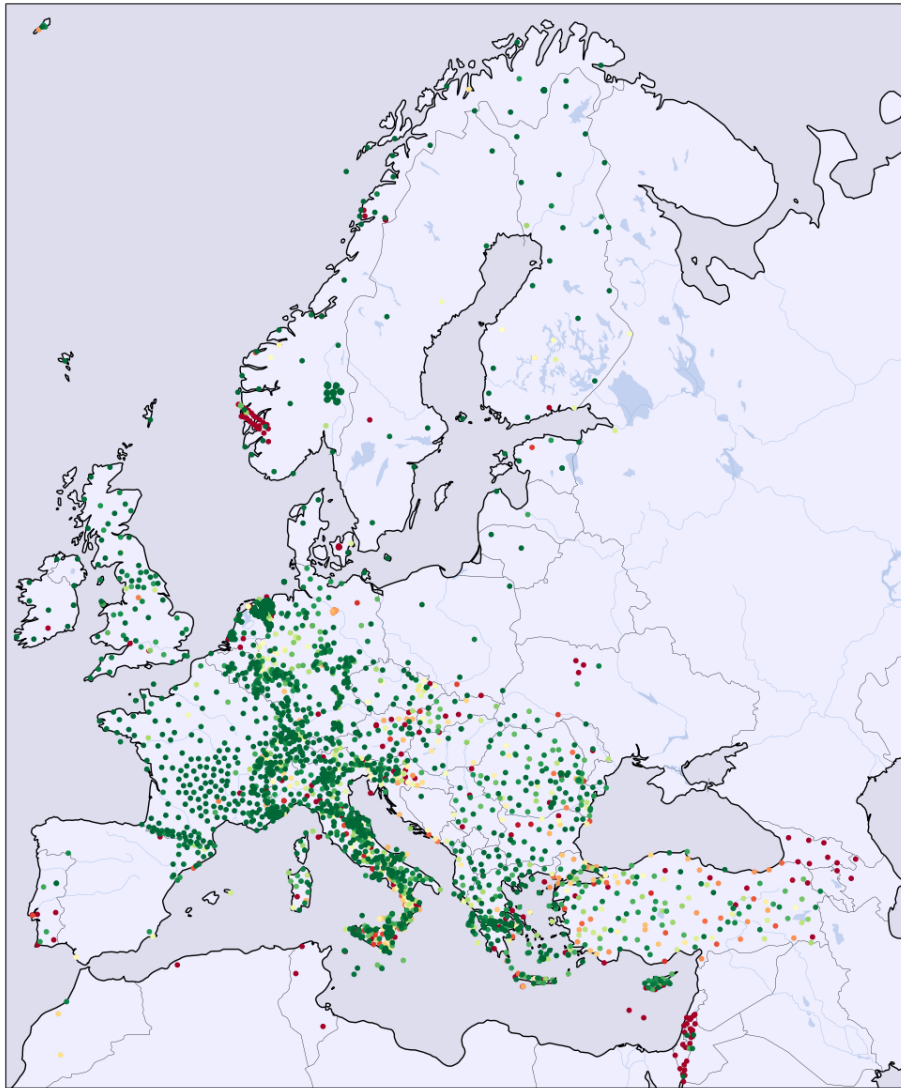


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

Request status statistics of networks:

| net | OK | OK in % | NODATA | FRAGMENT | INCOMPL | METAFAIL | NOSERV | RESTFAIL |
|-----|------|---------|--------|----------|---------|----------|--------|----------|
| 1D | 76 | 83 | 15 | 0 | 0 | 0 | 0 | 0 |
| 1I | 67 | 61 | 42 | 0 | 0 | 0 | 0 | 0 |
| 2D | 192 | 82 | 42 | 0 | 0 | 0 | 0 | 0 |
| 2E | 1 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2I | 221 | 85 | 36 | 0 | 0 | 0 | 0 | 0 |
| 3D | 77 | 34 | 146 | 0 | 0 | 0 | 0 | 0 |
| 4P | 437 | 59 | 271 | 3 | 22 | 0 | 0 | 0 |
| 5A | 5 | 71 | 0 | 2 | 0 | 0 | 0 | 0 |
| 5B | 35 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5R | 105 | 60 | 68 | 0 | 0 | 0 | 0 | 0 |
| 7B | 577 | 52 | 513 | 2 | 1 | 0 | 1 | 0 |
| 7C | 0 | 0 | 134 | 0 | 0 | 0 | 1 | 0 |
| 7F | 117 | 95 | 4 | 0 | 0 | 0 | 1 | 0 |
| 8D | 41 | 97 | 0 | 1 | 0 | 0 | 0 | 0 |
| 8N | 67 | 56 | 50 | 1 | 0 | 0 | 0 | 0 |
| 9L | 32 | 66 | 16 | 0 | 0 | 0 | 0 | 0 |
| 9S | 45 | 51 | 42 | 0 | 0 | 0 | 0 | 0 |
| AB | 0 | 0 | 135 | 0 | 0 | 0 | 0 | 0 |
| AC | 431 | 92 | 32 | 0 | 0 | 0 | 4 | 0 |
| BE | 1260 | 95 | 63 | 0 | 2 | 0 | 0 | 0 |
| BN | 218 | 64 | 112 | 7 | 0 | 0 | 0 | 0 |
| BQ | 400 | 88 | 38 | 0 | 1 | 0 | 15 | 0 |
| BS | 726 | 65 | 373 | 13 | 4 | 0 | 0 | 0 |
| BW | 1873 | 78 | 519 | 0 | 0 | 0 | 0 | 0 |
| C4 | 84 | 66 | 42 | 0 | 0 | 0 | 0 | 0 |
| CA | 836 | 86 | 110 | 18 | 2 | 0 | 0 | 0 |
| CH | 3409 | 91 | 236 | 93 | 2 | 0 | 0 | 0 |
| CL | 580 | 89 | 64 | 0 | 1 | 0 | 0 | 0 |
| CP | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 |
| CQ | 440 | 55 | 338 | 10 | 2 | 0 | 0 | 0 |
| CR | 523 | 39 | 806 | 0 | 6 | 0 | 0 | 0 |
| CZ | 652 | 83 | 129 | 1 | 2 | 0 | 0 | 0 |
| DK | 579 | 41 | 805 | 0 | 8 | 0 | 1 | 0 |
| DY | 46 | 30 | 104 | 0 | 0 | 0 | 0 | 0 |
| DZ | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 |
| EB | 43 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| EE | 196 | 84 | 35 | 1 | 0 | 0 | 0 | 0 |
| EI | 397 | 92 | 34 | 0 | 0 | 0 | 0 | 0 |
| ES | 161 | 80 | 37 | 3 | 0 | 0 | 0 | 0 |
| FN | 397 | 99 | 4 | 0 | 0 | 0 | 0 | 0 |
| FO | 120 | 86 | 18 | 0 | 0 | 0 | 0 | 0 |
| FR | 7610 | 96 | 270 | 8 | 4 | 0 | 3 | 0 |
| GB | 2175 | 93 | 105 | 21 | 3 | 0 | 12 | 0 |
| GE | 2554 | 72 | 957 | 3 | 8 | 0 | 2 | 0 |

Request status statistics of networks (continued):

| net | OK | OK in % | NODATA | FRAGMENT | INCOMPL | METAFAIL | NOSERV | RESTFAIL |
|-----|-------|---------|--------|----------|---------|----------|--------|----------|
| GO | 0 | 0 | 255 | 0 | 0 | 0 | 0 | 0 |
| GQ | 164 | 82 | 24 | 3 | 0 | 0 | 8 | 0 |
| GR | 3374 | 86 | 477 | 1 | 4 | 0 | 43 | 0 |
| GU | 1070 | 80 | 240 | 19 | 0 | 0 | 1 | 0 |
| GX | 86 | 86 | 11 | 2 | 1 | 0 | 0 | 0 |
| HA | 1188 | 92 | 101 | 0 | 1 | 0 | 0 | 0 |
| HC | 364 | 62 | 210 | 3 | 1 | 0 | 9 | 0 |
| HE | 689 | 78 | 188 | 0 | 0 | 0 | 0 | 0 |
| HF | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 |
| HL | 1947 | 74 | 630 | 49 | 0 | 0 | 0 | 0 |
| HP | 811 | 93 | 41 | 19 | 0 | 0 | 0 | 0 |
| HS | 517 | 87 | 71 | 1 | 0 | 0 | 5 | 0 |
| HT | 1783 | 79 | 443 | 12 | 6 | 0 | 0 | 2 |
| HU | 544 | 85 | 92 | 0 | 1 | 0 | 0 | 0 |
| IP | 0 | 0 | 88 | 0 | 0 | 0 | 0 | 0 |
| IS | 0 | 0 | 1611 | 0 | 0 | 0 | 1 | 0 |
| IV | 14513 | 79 | 3521 | 204 | 28 | 0 | 3 | 45 |
| IX | 404 | 66 | 192 | 11 | 3 | 0 | 0 | 0 |
| IY | 439 | 59 | 280 | 6 | 1 | 0 | 6 | 0 |
| JS | 0 | 0 | 210 | 0 | 0 | 0 | 0 | 0 |
| K3 | 20 | 80 | 5 | 0 | 0 | 0 | 0 | 0 |
| KO | 4417 | 62 | 779 | 1703 | 58 | 0 | 91 | 0 |
| LC | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 |
| LE | 1407 | 90 | 109 | 0 | 0 | 0 | 33 | 0 |
| LU | 459 | 96 | 16 | 0 | 0 | 0 | 0 | 0 |
| LX | 76 | 64 | 40 | 0 | 1 | 0 | 0 | 0 |
| M1 | 281 | 66 | 139 | 0 | 0 | 0 | 1 | 0 |
| MD | 115 | 87 | 17 | 0 | 0 | 0 | 0 | 0 |
| ME | 27 | 56 | 21 | 0 | 0 | 0 | 0 | 0 |
| MK | 372 | 99 | 1 | 0 | 0 | 0 | 0 | 0 |
| ML | 67 | 80 | 16 | 0 | 0 | 0 | 0 | 0 |
| MN | 751 | 66 | 364 | 17 | 1 | 0 | 1 | 0 |
| MT | 350 | 83 | 67 | 1 | 0 | 0 | 0 | 0 |
| NH | 267 | 53 | 212 | 2 | 0 | 0 | 14 | 0 |
| NI | 151 | 69 | 63 | 2 | 0 | 0 | 0 | 0 |
| NL | 9706 | 87 | 1247 | 107 | 22 | 0 | 2 | 0 |
| NO | 3409 | 88 | 195 | 9 | 7 | 0 | 252 | 0 |
| NR | 28 | 10 | 237 | 0 | 0 | 0 | 0 | 0 |
| NS | 1636 | 42 | 1957 | 1 | 0 | 0 | 266 | 0 |
| OE | 871 | 78 | 214 | 0 | 22 | 0 | 0 | 0 |
| OT | 534 | 80 | 87 | 7 | 2 | 0 | 0 | 36 |
| OX | 495 | 69 | 210 | 3 | 2 | 0 | 2 | 0 |
| PL | 354 | 99 | 2 | 0 | 0 | 0 | 0 | 0 |
| PM | 32 | 13 | 204 | 0 | 0 | 0 | 0 | 0 |

Request status statistics of networks (continued):

| net | OK | OK in % | NODATA | FRAGMENT | INCOMPL | METAFAIL | NOSERV | RESTFAIL |
|-----|------|---------|--------|----------|---------|----------|--------|----------|
| QE | 230 | 58 | 142 | 1 | 0 | 0 | 22 | 0 |
| QM | 258 | 72 | 96 | 0 | 0 | 0 | 0 | 0 |
| RD | 512 | 99 | 3 | 0 | 1 | 0 | 0 | 0 |
| RF | 38 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| RO | 4051 | 81 | 911 | 7 | 10 | 0 | 3 | 0 |
| SI | 135 | 54 | 114 | 0 | 0 | 0 | 0 | 0 |
| SJ | 446 | 75 | 137 | 5 | 3 | 0 | 0 | 0 |
| SK | 245 | 50 | 235 | 0 | 0 | 0 | 1 | 0 |
| SL | 1069 | 82 | 199 | 6 | 17 | 0 | 0 | 0 |
| SS | 29 | 85 | 5 | 0 | 0 | 0 | 0 | 0 |
| ST | 351 | 99 | 1 | 0 | 0 | 0 | 0 | 0 |
| TH | 1389 | 90 | 126 | 3 | 2 | 0 | 20 | 0 |
| TQ | 200 | 51 | 182 | 9 | 1 | 0 | 0 | 0 |
| TT | 0 | 0 | 133 | 0 | 0 | 0 | 0 | 0 |
| TU | 99 | 21 | 366 | 0 | 1 | 0 | 0 | 0 |
| TV | 25 | 54 | 21 | 0 | 0 | 0 | 0 | 0 |
| UD | 83 | 31 | 178 | 3 | 0 | 0 | 0 | 0 |
| UP | 421 | 94 | 23 | 0 | 2 | 0 | 0 | 0 |
| UR | 252 | 69 | 102 | 4 | 0 | 0 | 4 | 0 |
| UT | 204 | 94 | 13 | 0 | 0 | 0 | 0 | 0 |
| VI | 243 | 80 | 54 | 3 | 1 | 0 | 0 | 0 |
| VM | 48 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| WE | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 |
| WM | 100 | 47 | 111 | 0 | 0 | 0 | 0 | 0 |
| XE | 224 | 58 | 157 | 0 | 0 | 0 | 1 | 0 |
| XP | 1448 | 99 | 4 | 0 | 0 | 0 | 0 | 0 |
| Y8 | 165 | 79 | 42 | 0 | 0 | 0 | 0 | 0 |
| YV | 103 | 56 | 78 | 0 | 0 | 0 | 0 | 0 |
| ZO | 309 | 91 | 27 | 0 | 0 | 0 | 0 | 0 |

Status codes used in above statistics:

OK data delivery and restitution successful

OK in % Percentage of successful data delivery

NODATA no data available

FRAGMENT returned data not contiguous

INCOMPL returned time interval less than requested

METAFAIL restituted data contain illegal values (Nans)

NOSERV station metadata request failed

RESTFAIL removing response failed

Waveform requests, random hit distribution

How many stations have how many hits of random requests.

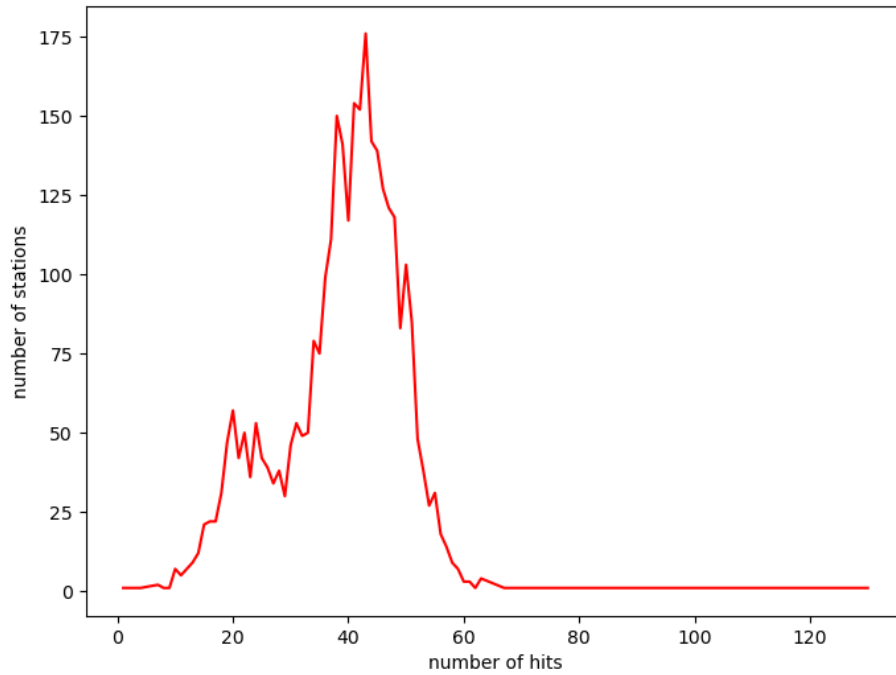


Figure 2: Request hit statistics showing the distribution of the 123153 requests on the 3182 evaluated stations

Failure rate of inventory requests

This section contains results of inventory test requests on network, station and channel level. A few times per hour all servers get direct metadata requests followed by a metadata request using the routing client of obspy. It is checked whether all servers respond to the direct requests and whether all servers contribute to the routed request. The following results refer to tests carried out since 11-12-2025 00:32:02.

totals: direct requests 2015, routed requests 2015, federator requests 2015

Number of failed requests and failure rates of servers:

| server | direct | routed | federator |
|------------|---------------|---------------|---------------|
| AFAD | 2016 (100.0%) | 2015 (100.0%) | 1983 (100.0%) |
| BGR | 3 (0.1%) | 6 (0.3%) | 36 (1.8%) |
| BGS | 1 (0.0%) | 1 (0.0%) | 7 (0.4%) |
| ETH | 0 (0.0%) | 0 (0.0%) | 3 (0.2%) |
| GFZ | 0 (0.0%) | 0 (0.0%) | 228 (11.5%) |
| ICGC | 5 (0.2%) | 1 (0.0%) | 20 (1.0%) |
| INGV | 1 (0.0%) | 0 (0.0%) | 18 (0.9%) |
| KOERI | 24 (1.2%) | 86 (4.3%) | 9 (0.5%) |
| LMU | 2 (0.1%) | 2 (0.1%) | 7 (0.4%) |
| NIEP | 9 (0.4%) | 11 (0.5%) | 18 (0.9%) |
| NOA | 18 (0.9%) | 15 (0.7%) | 13 (0.7%) |
| ODC | 0 (0.0%) | 0 (0.0%) | 67 (3.4%) |
| RESIF | 3 (0.1%) | 2 (0.1%) | 15 (0.8%) |
| UIB/NORSAR | 4 (0.2%) | 5 (0.2%) | 12 (0.6%) |

failures of routing client: 0

failures of federator: 32

runs without errors: 0 (0.0%)

Remarks

A history of these daily reports (in pdf format) as well as request logs on station level are available at ftp://www.szgrf.bgr.de/pub/EidaAvailability/files/history_eida_availability_reports.tgz and [stationlogs_eida_availability.tgz](ftp://www.szgrf.bgr.de/pub/EidaAvailability/files/stationlogs_eida_availability.tgz), respectively. Reports created after 15-08-2022 are available at https://www.szgrf.bgr.de/eidaqc_report/EidaAvailability

This report was automatically created at 08-01-2026 00:32 MEST using pandoc 2.18.

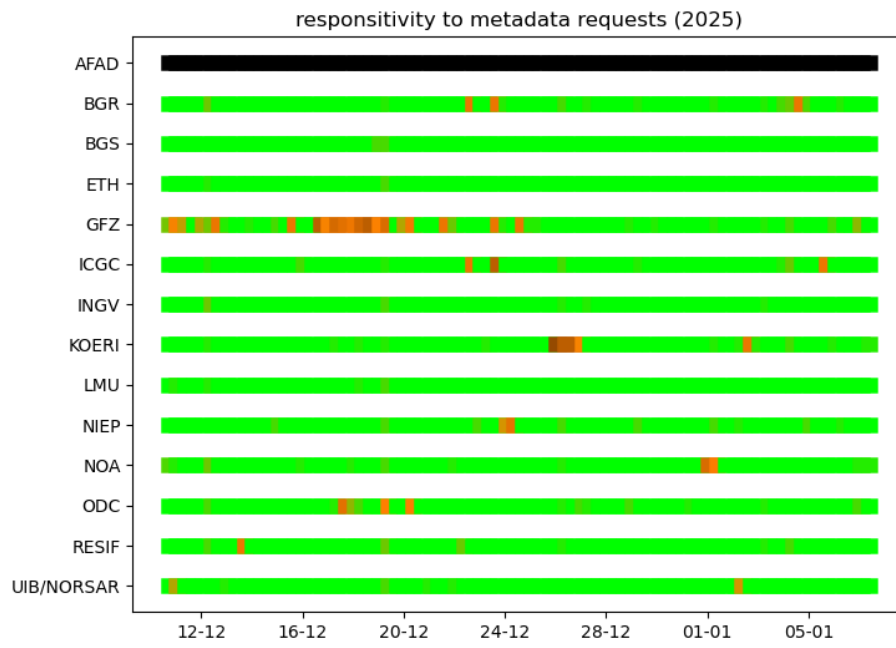


Figure 3: Responsiveness of all servers plotted with a granularity of 8h; green = 0% errors, orange = 10%, brown = 50%, black = 100%