

EIDA Availability Report

Created at 15-01-2026 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 15-10-2025 and 15-01-2026 00:32 using station metadata valid since 15-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3330
- evaluated stations: 3225
- number of requests: 125018

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 125018 random requests between 15-10-2025 and 15-01-2026. 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 (260115)

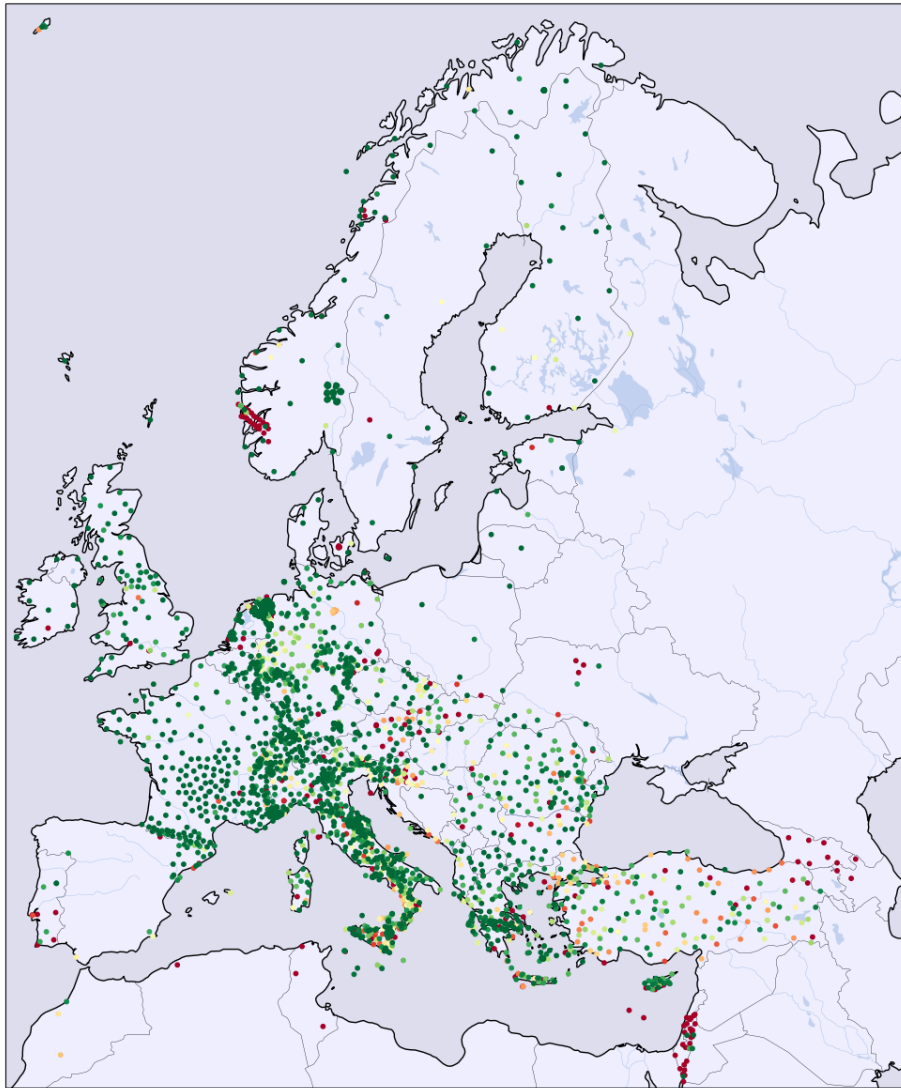


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

Request status statistics of networks:

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
1D	73	86	11	0	0	0	0	0
1I	68	61	42	0	0	0	0	0
2D	195	81	43	0	0	0	0	0
2E	1	100	0	0	0	0	0	0
2I	221	85	36	0	0	0	0	0
3D	79	34	150	0	0	0	1	0
4P	426	58	277	4	20	0	0	0
5A	6	60	0	4	0	0	0	0
5B	33	100	0	0	0	0	0	0
5R	105	60	68	0	0	0	0	0
7B	565	52	517	2	2	0	0	0
7C	0	0	136	0	0	0	1	0
7F	127	96	4	0	0	0	1	0
8D	42	97	0	1	0	0	0	0
8N	57	54	46	1	0	0	0	0
9L	33	68	15	0	0	0	0	0
9S	45	51	42	0	0	0	0	0
AB	0	0	129	0	0	0	0	0
AC	418	91	33	0	0	0	4	0
BE	1245	95	63	0	2	0	0	0
BN	232	64	120	8	0	0	0	0
BQ	390	93	13	0	1	0	13	0
BS	729	65	372	12	4	0	0	0
BW	1872	78	505	0	0	0	0	0
C4	82	67	39	0	0	0	0	0
CA	847	86	115	18	2	0	0	0
CH	3440	91	230	98	1	0	0	0
CL	582	89	67	0	1	0	0	0
CP	0	0	101	0	0	0	0	0
CQ	432	55	335	10	2	0	0	0
CR	530	38	852	0	7	0	0	0
CZ	687	83	129	1	2	0	0	0
DK	586	41	803	0	8	0	1	0
DY	50	31	107	0	0	0	0	0
DZ	0	0	49	0	0	0	0	0
EB	42	100	0	0	0	0	0	0
EE	190	83	37	1	0	0	0	0
EI	403	92	35	0	0	0	0	0
ES	162	79	36	6	0	0	0	0
FN	379	99	3	0	0	0	0	0
FO	119	89	14	0	0	0	0	0
FR	7608	96	270	7	5	0	4	0
GB	2286	94	113	22	3	0	0	0
GE	2572	72	967	2	7	0	2	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
GO	0	0	247	0	0	0	0	0
GQ	171	81	28	4	0	0	8	0
GR	3385	86	482	1	3	0	43	0
GU	1056	80	240	16	0	0	1	0
GX	90	84	14	2	1	0	0	0
HA	1207	92	99	0	1	0	0	0
HC	367	62	206	3	1	0	10	0
HE	681	79	175	0	0	0	0	0
HF	0	0	45	0	0	0	0	0
HL	1946	74	634	49	0	0	0	0
HP	823	92	41	21	1	0	0	0
HS	513	85	78	1	0	0	5	0
HT	1781	79	437	12	8	0	2	2
HU	557	85	91	0	1	0	0	0
IP	0	0	88	0	0	0	0	0
IS	0	0	1616	0	0	0	2	0
IV	14550	79	3497	206	25	0	3	47
IX	421	67	191	12	2	0	0	0
IY	440	60	266	9	1	0	6	0
JS	0	0	207	0	0	0	0	0
K3	20	80	5	0	0	0	0	0
KO	4415	62	784	1677	60	0	91	0
KQ	217	69	46	49	0	0	2	0
LC	0	0	41	0	0	0	0	0
LE	1427	91	107	0	0	0	34	0
LU	469	98	6	0	0	0	0	0
LX	75	65	38	0	1	0	0	0
M1	271	66	136	0	0	0	1	0
MD	119	88	16	0	0	0	0	0
ME	29	59	20	0	0	0	0	0
MK	368	99	1	0	0	0	0	0
ML	60	75	20	0	0	0	0	0
MN	748	66	352	16	0	0	1	0
MT	358	84	65	1	0	0	0	0
NH	281	57	194	2	0	0	14	0
NI	155	70	64	1	0	0	0	0
NL	9684	87	1246	115	24	0	2	0
NO	3383	87	198	9	6	0	252	0
NR	31	11	239	0	0	0	0	0
NS	1619	42	1968	1	0	0	265	0
OE	881	79	212	0	21	0	0	0
OT	544	80	84	6	2	0	0	37
OX	504	69	213	3	2	0	2	0
PL	352	99	2	0	0	0	0	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
PM	30	12	204	0	0	0	0	0
QE	233	57	148	1	0	0	22	0
QM	254	72	96	0	0	0	0	0
RD	512	99	3	0	1	0	0	0
RF	42	100	0	0	0	0	0	0
RN	199	46	198	5	16	0	8	0
RO	4039	81	888	6	11	0	2	0
SI	136	54	115	0	0	0	0	0
SJ	451	75	139	6	3	0	0	0
SK	245	51	234	0	0	0	0	0
SL	1056	82	205	6	17	0	0	0
SS	30	85	5	0	0	0	0	0
ST	349	99	1	0	0	0	0	0
SX	598	70	237	1	0	0	14	0
TH	1402	89	131	4	2	0	20	0
TQ	212	52	186	7	1	0	0	0
TT	0	0	141	0	0	0	0	0
TU	104	22	365	0	1	0	0	0
TV	24	52	22	0	0	0	0	0
UD	81	31	171	3	0	0	0	0
UP	424	93	26	0	3	0	0	0
UR	270	71	105	5	0	0	0	0
UT	202	92	16	0	0	0	0	0
VI	254	81	54	3	1	0	0	0
VM	49	100	0	0	0	0	0	0
WE	0	0	36	0	0	0	0	0
WM	103	46	118	0	0	0	0	0
XE	227	58	160	0	0	0	1	0
XP	1468	99	4	0	0	0	0	0
Y8	168	79	44	0	0	0	0	0
YV	102	56	77	0	0	0	0	0
ZO	309	91	29	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.

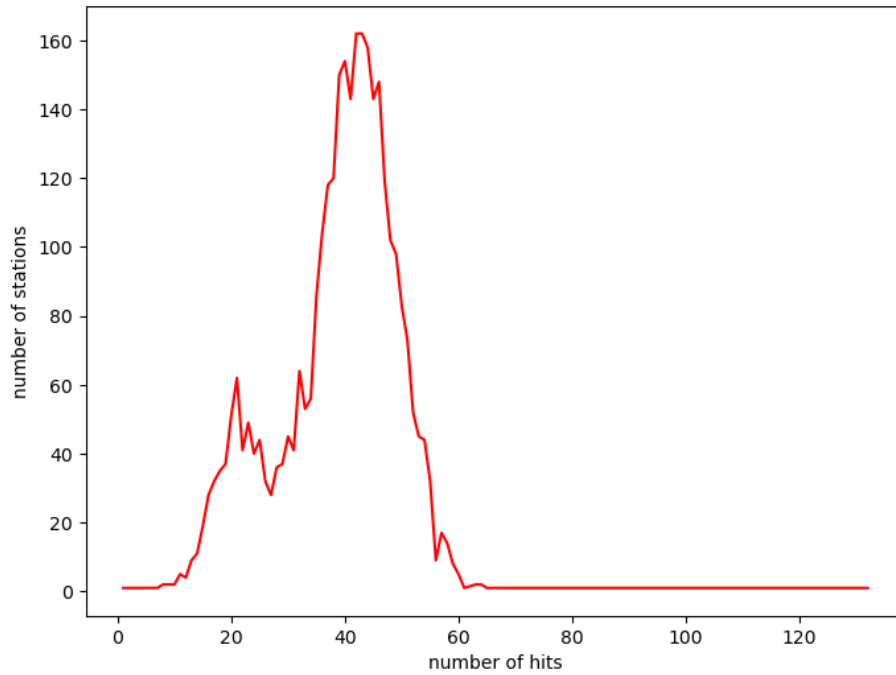


Figure 2: Request hit statistics showing the distribution of the 125018 requests on the 3225 evaluated stations

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 18-12-2025 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%)	1993 (100.0%)
BGR	3 (0.1%)	6 (0.3%)	38 (1.9%)
BGS	1 (0.0%)	1 (0.0%)	7 (0.4%)
ETH	0 (0.0%)	0 (0.0%)	2 (0.1%)
GFZ	0 (0.0%)	0 (0.0%)	152 (7.6%)
ICGC	8 (0.4%)	3 (0.1%)	26 (1.3%)
INGV	0 (0.0%)	0 (0.0%)	14 (0.7%)
KOERI	26 (1.3%)	88 (4.4%)	9 (0.5%)
LMU	1 (0.0%)	1 (0.0%)	5 (0.3%)
NIEP	9 (0.4%)	11 (0.5%)	18 (0.9%)
NOA	15 (0.7%)	14 (0.7%)	12 (0.6%)
ODC	0 (0.0%)	0 (0.0%)	57 (2.9%)
RESIF	4 (0.2%)	1 (0.0%)	18 (0.9%)
UIB/NORSAR	3 (0.1%)	2 (0.1%)	13 (0.7%)

failures of routing client: 0

failures of federator: 22

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

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