

EIDA Availability Report

Created at 12-01-2026 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 12-10-2025 and 12-01-2026 00:32 using station metadata valid since 12-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3330
- evaluated stations: 3224
- number of requests: 124966

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 124966 random requests between 12-10-2025 and 12-01-2026. 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 (260112)

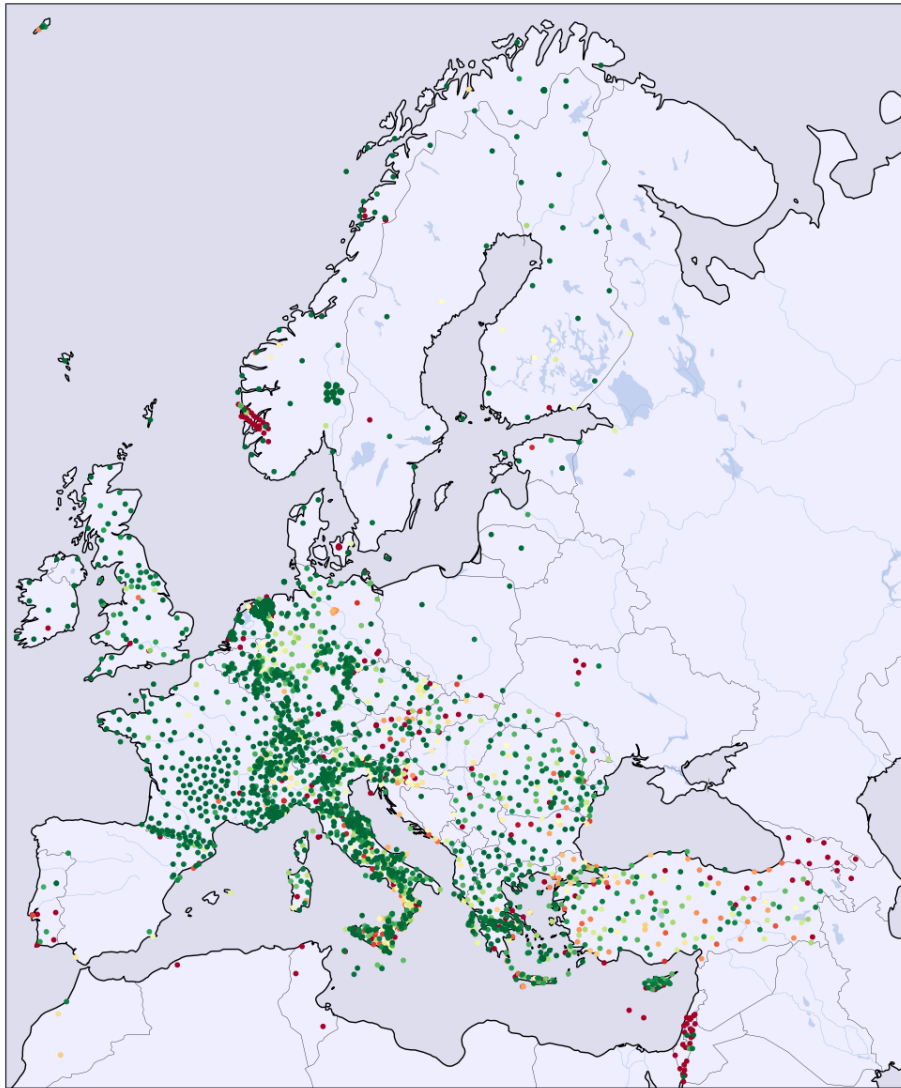


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

Request status statistics of networks:

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
1D	73	85	12	0	0	0	0	0
1I	69	63	39	0	0	0	0	0
2D	194	80	46	0	0	0	0	0
2E	1	100	0	0	0	0	0	0
2I	222	86	34	0	0	0	0	0
3D	79	33	153	0	0	0	1	0
4P	425	58	274	3	21	0	0	0
5A	6	66	0	3	0	0	0	0
5B	34	100	0	0	0	0	0	0
5R	105	60	68	0	0	0	0	0
7B	578	53	508	2	2	0	0	0
7C	0	0	134	0	0	0	1	0
7F	124	96	4	0	0	0	1	0
8D	42	97	0	1	0	0	0	0
8N	60	55	47	1	0	0	0	0
9L	33	68	15	0	0	0	0	0
9S	44	51	42	0	0	0	0	0
AB	0	0	135	0	0	0	0	0
AC	425	92	32	0	0	0	4	0
BE	1252	94	65	0	2	0	0	0
BN	226	64	117	8	0	0	0	0
BQ	396	88	35	0	1	0	15	0
BS	735	65	368	13	4	0	0	0
BW	1875	78	515	0	0	0	0	0
C4	84	67	40	0	0	0	0	0
CA	849	86	109	18	2	0	0	0
CH	3439	91	231	100	1	0	0	0
CL	582	89	66	0	1	0	0	0
CP	0	0	97	0	0	0	0	0
CQ	436	55	340	10	2	0	0	0
CR	525	38	829	0	6	0	0	0
CZ	671	83	127	1	2	0	0	0
DK	590	42	803	0	8	0	1	0
DY	47	31	102	0	0	0	0	0
DZ	0	0	48	0	0	0	0	0
EB	42	100	0	0	0	0	0	0
EE	193	84	34	1	0	0	0	0
EI	405	91	36	0	0	0	0	0
ES	162	80	36	4	0	0	0	0
FN	385	99	3	0	0	0	0	0
FO	120	88	15	0	0	0	0	0
FR	7636	96	268	7	4	0	3	0
GB	2206	94	109	22	3	0	0	0
GE	2552	72	964	3	7	0	2	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
GO	0	0	245	0	0	0	0	0
GQ	166	81	26	3	0	0	8	0
GR	3384	86	485	1	4	0	43	0
GU	1061	80	240	17	0	0	1	0
GX	87	84	13	2	1	0	0	0
HA	1198	92	100	0	1	0	0	0
HC	367	62	206	3	1	0	9	0
HE	681	78	182	0	0	0	0	0
HF	0	0	46	0	0	0	0	0
HL	1945	74	635	47	0	0	0	0
HP	827	93	39	19	0	0	0	0
HS	510	86	77	1	0	0	5	0
HT	1783	79	437	12	7	0	0	2
HU	550	85	92	0	1	0	0	0
IP	0	0	89	0	0	0	0	0
IS	0	0	1609	0	0	0	1	0
IV	14531	79	3523	203	26	0	3	45
IX	417	66	195	11	3	0	0	0
IY	440	60	267	9	1	0	6	0
JS	0	0	207	0	0	0	0	0
K3	21	80	5	0	0	0	0	0
KO	4434	62	776	1698	60	0	91	0
KQ	218	68	49	51	0	0	2	0
LC	0	0	40	0	0	0	0	0
LE	1407	90	109	0	0	0	33	0
LU	468	98	8	0	0	0	0	0
LX	76	66	38	0	1	0	0	0
M1	274	66	135	0	0	0	1	0
MD	114	87	17	0	0	0	0	0
ME	28	58	20	0	0	0	0	0
MK	368	99	1	0	0	0	0	0
ML	62	78	17	0	0	0	0	0
MN	750	66	360	18	1	0	1	0
MT	359	84	66	1	0	0	0	0
NH	275	56	200	2	0	0	14	0
NI	154	70	64	1	0	0	0	0
NL	9671	87	1257	110	25	0	2	0
NO	3401	87	196	10	7	0	252	0
NR	31	11	236	0	0	0	0	0
NS	1631	42	1964	1	0	0	266	0
OE	875	78	215	0	25	0	0	0
OT	548	80	84	7	2	0	0	37
OX	498	69	212	3	2	0	2	0
PL	354	99	2	0	0	0	0	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
PM	31	13	205	0	0	0	0	0
QE	237	58	143	1	0	0	22	0
QM	257	72	99	0	0	0	0	0
RD	519	99	3	0	1	0	0	0
RF	40	100	0	0	0	0	0	0
RN	196	46	195	4	16	0	8	0
RO	4054	81	893	6	10	0	3	0
SI	138	54	116	0	0	0	0	0
SJ	449	75	140	6	3	0	0	0
SK	244	51	232	0	0	0	1	0
SL	1065	82	205	6	17	0	0	0
SS	31	83	6	0	0	0	0	0
ST	355	99	1	0	0	0	0	0
SX	598	70	233	1	0	0	14	0
TH	1408	90	129	3	2	0	20	0
TQ	203	51	180	8	1	0	0	0
TT	0	0	134	0	0	0	0	0
TU	104	22	365	0	1	0	0	0
TV	24	53	21	0	0	0	0	0
UD	80	31	175	3	0	0	0	0
UP	425	94	24	0	2	0	0	0
UR	259	70	104	5	0	0	0	0
UT	201	93	15	0	0	0	0	0
VI	248	81	54	3	1	0	0	0
VM	49	100	0	0	0	0	0	0
WE	0	0	35	0	0	0	0	0
WM	100	45	118	0	0	0	0	0
XE	221	57	160	0	0	0	1	0
XP	1460	99	4	0	0	0	0	0
Y8	168	79	43	0	0	0	0	0
YV	101	55	81	0	0	0	0	0
ZO	308	91	28	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.

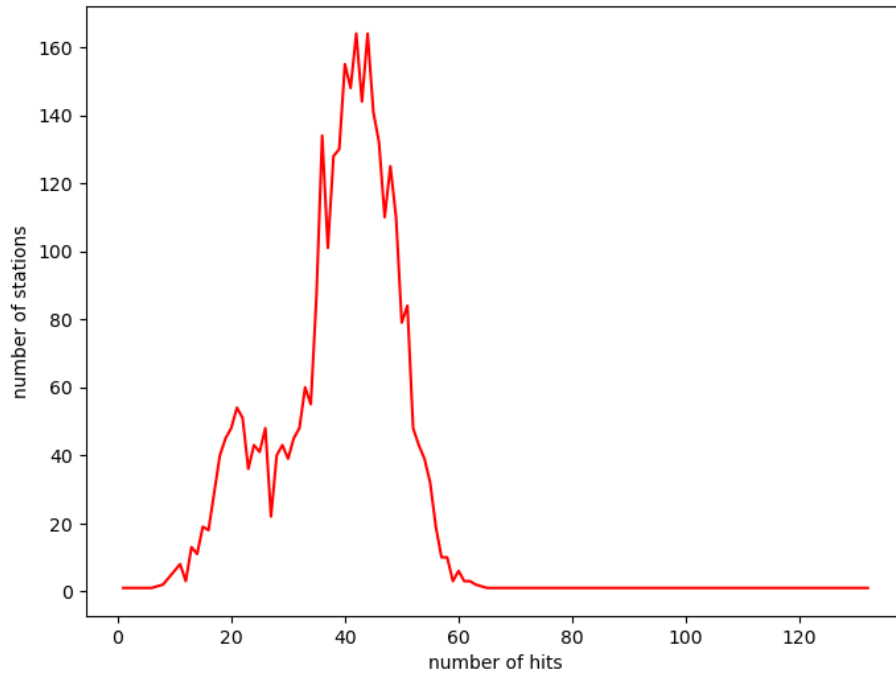


Figure 2: Request hit statistics showing the distribution of the 124966 requests on the 3224 evaluated stations

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 15-12-2025 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%)	1986 (100.0%)
BGR	3 (0.1%)	6 (0.3%)	37 (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%)	204 (10.3%)
ICGC	6 (0.3%)	3 (0.1%)	26 (1.3%)
INGV	0 (0.0%)	0 (0.0%)	15 (0.8%)
KOERI	25 (1.2%)	87 (4.3%)	9 (0.5%)
LMU	1 (0.0%)	1 (0.0%)	5 (0.3%)
NIEP	9 (0.4%)	11 (0.5%)	18 (0.9%)
NOA	16 (0.8%)	13 (0.6%)	11 (0.6%)
ODC	0 (0.0%)	0 (0.0%)	66 (3.3%)
RESIF	3 (0.1%)	1 (0.0%)	18 (0.9%)
UIB/NORSAR	2 (0.1%)	2 (0.1%)	12 (0.6%)

failures of routing client: 0

failures of federator: 29

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%