

EIDA Availability Report

Created at 16-01-2026 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 16-10-2025 and 16-01-2026 00:32 using station metadata valid since 16-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3330
- evaluated stations: 3225
- number of requests: 125075

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 125075 random requests between 16-10-2025 and 16-01-2026. 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 (260116)

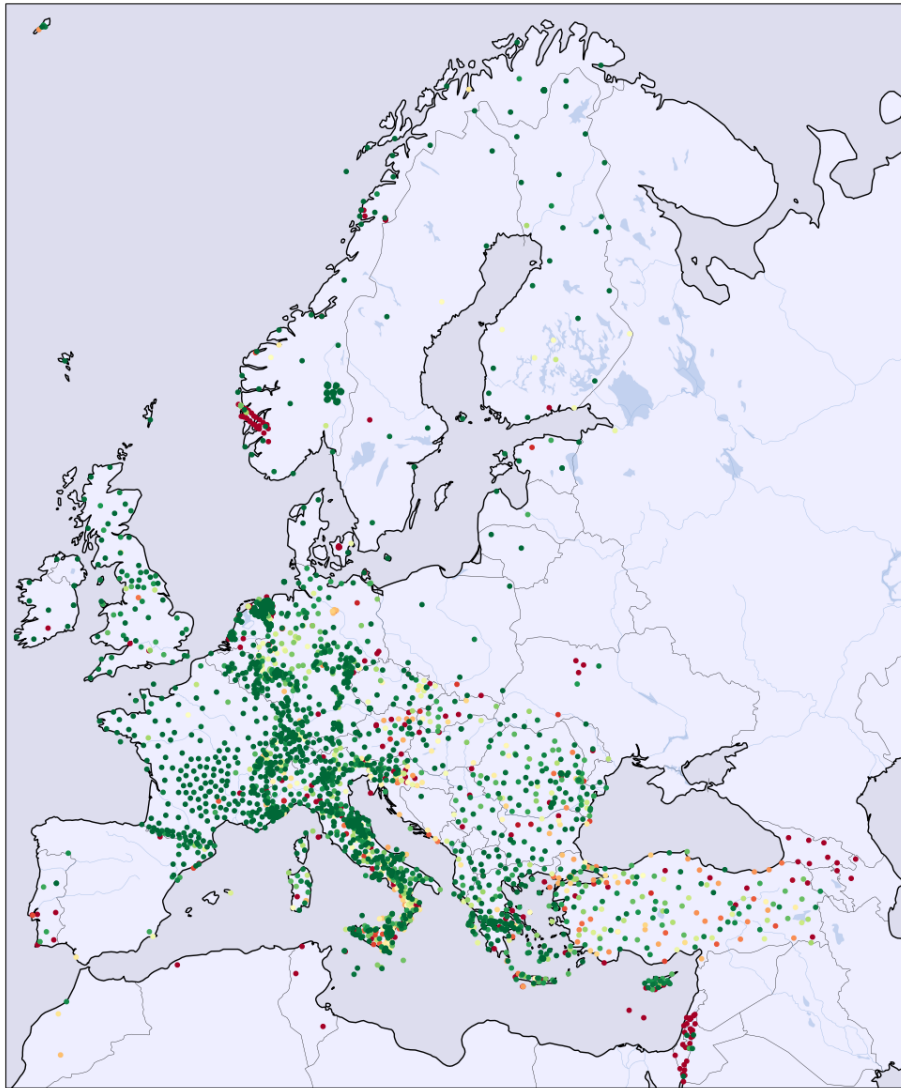


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

Request status statistics of networks:

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
1D	74	87	11	0	0	0	0	0
1I	66	61	41	0	0	0	0	0
2D	193	81	43	0	0	0	0	0
2E	1	100	0	0	0	0	0	0
2I	219	86	35	0	0	0	0	0
3D	79	34	149	0	0	0	1	0
4P	421	58	277	4	19	0	0	0
5A	6	60	0	4	0	0	0	0
5B	34	100	0	0	0	0	0	0
5R	105	60	68	0	0	0	0	0
7B	568	52	507	2	2	0	0	0
7C	0	0	134	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	55	45	1	0	0	0	0
9L	33	68	15	0	0	0	0	0
9S	47	52	42	0	0	0	0	0
AB	0	0	130	0	0	0	0	0
AC	421	92	32	0	0	0	4	0
BE	1241	94	64	0	2	0	0	0
BN	236	64	121	8	0	0	0	0
BQ	387	93	13	0	1	0	13	0
BS	728	65	374	12	4	0	0	0
BW	1877	78	501	0	0	0	0	0
C4	82	67	39	0	0	0	0	0
CA	851	86	114	19	2	0	0	0
CH	3443	91	228	98	1	0	0	0
CL	579	89	66	0	1	0	0	0
CP	0	0	98	0	0	0	0	0
CQ	437	55	332	11	2	0	0	0
CR	536	38	862	0	7	0	0	0
CZ	676	83	128	1	2	0	0	0
DK	586	41	809	0	7	0	1	0
DY	53	33	105	0	0	0	0	0
DZ	0	0	48	0	0	0	0	0
EB	44	100	0	0	0	0	0	0
EE	191	83	37	1	0	0	0	0
EI	400	92	34	0	0	0	0	0
ES	161	79	35	6	0	0	0	0
FN	382	99	3	0	0	0	0	0
FO	119	89	14	0	0	0	0	0
FR	7601	96	268	7	5	0	4	0
GB	2311	94	114	22	3	0	0	0
GE	2582	72	965	2	6	0	2	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
GO	0	0	246	0	0	0	0	0
GQ	171	80	29	4	0	0	8	0
GR	3393	86	480	1	2	0	43	0
GU	1052	80	241	17	0	0	1	0
GX	91	84	14	2	1	0	0	0
HA	1207	92	102	0	1	0	0	0
HC	367	63	199	3	1	0	10	0
HE	679	79	178	0	0	0	0	0
HF	0	0	45	0	0	0	0	0
HL	1943	73	638	49	0	0	0	0
HP	821	92	40	21	1	0	0	0
HS	510	85	79	1	0	0	5	0
HT	1785	79	437	13	8	0	2	2
HU	558	85	92	0	1	0	0	0
IP	0	0	88	0	0	0	0	0
IS	0	0	1621	0	0	0	2	0
IV	14555	79	3479	209	24	0	3	45
IX	418	66	194	12	2	0	0	0
IY	443	60	269	9	1	0	6	0
JS	0	0	205	0	0	0	0	0
K3	18	78	5	0	0	0	0	0
KO	4406	62	789	1676	56	0	91	0
KQ	218	69	44	49	0	0	2	0
LC	0	0	42	0	0	0	0	0
LE	1431	91	103	0	0	0	34	0
LU	469	98	8	0	0	0	0	0
LX	76	66	38	0	1	0	0	0
M1	270	66	135	0	0	0	1	0
MD	121	88	16	0	0	0	0	0
ME	29	59	20	0	0	0	0	0
MK	370	99	1	0	0	0	0	0
ML	59	74	20	0	0	0	0	0
MN	747	66	352	16	0	0	1	0
MT	361	84	65	1	0	0	0	0
NH	287	58	190	2	0	0	14	0
NI	154	70	64	1	0	0	0	0
NL	9682	87	1238	116	24	0	2	0
NO	3381	87	195	9	6	0	252	0
NR	32	11	240	0	0	0	0	0
NS	1641	42	1967	1	0	0	265	0
OE	884	79	210	0	20	0	0	0
OT	542	80	85	6	2	0	0	38
OX	502	69	215	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	31	13	203	0	0	0	0	0
QE	232	57	150	1	0	0	22	0
QM	250	72	96	0	0	0	0	0
RD	510	99	3	0	1	0	0	0
RF	41	100	0	0	0	0	0	0
RN	198	46	196	5	16	0	8	0
RO	4061	81	885	6	11	0	2	0
SI	135	53	116	0	0	0	0	0
SJ	452	75	140	6	3	0	0	0
SK	244	50	237	0	0	0	0	0
SL	1062	82	207	6	18	0	0	0
SS	30	85	5	0	0	0	0	0
ST	353	99	1	0	0	0	0	0
SX	598	70	233	1	0	0	14	0
TH	1408	89	132	4	2	0	20	0
TQ	213	52	185	7	1	0	0	0
TT	0	0	141	0	0	0	0	0
TU	106	22	361	0	1	0	0	0
TV	23	50	23	0	0	0	0	0
UD	80	31	171	3	0	0	0	0
UP	423	93	25	0	3	0	0	0
UR	277	71	105	5	0	0	0	0
UT	203	92	16	0	0	0	0	0
VI	252	81	54	3	2	0	0	0
VM	49	100	0	0	0	0	0	0
WE	0	0	36	0	0	0	0	0
WM	102	45	120	0	0	0	0	0
XE	225	58	160	0	0	0	1	0
XP	1473	99	4	0	0	0	0	0
Y8	170	79	44	0	0	0	0	0
YV	101	56	78	0	0	0	0	0
ZO	305	91	30	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.

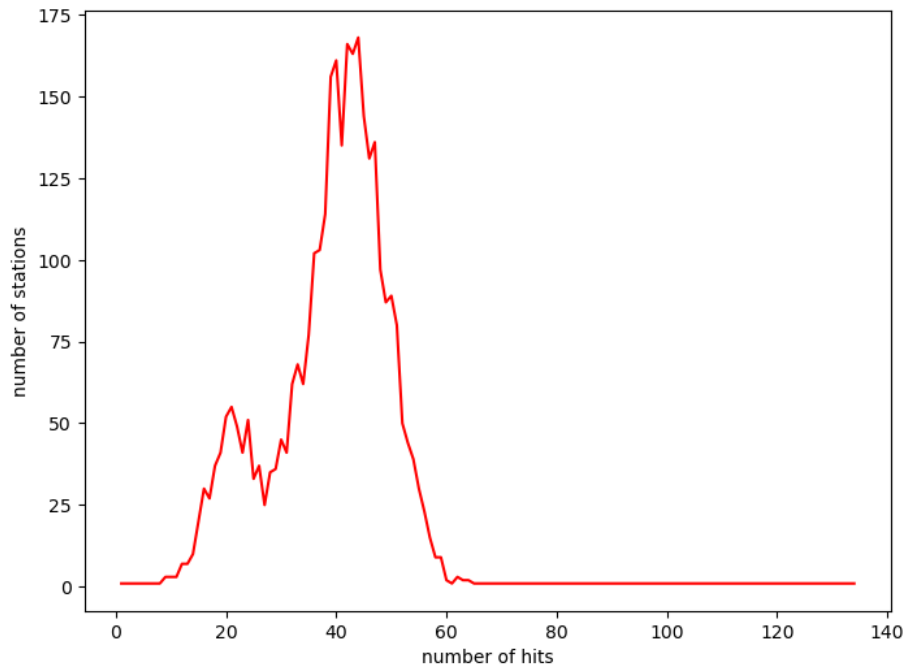


Figure 2: Request hit statistics showing the distribution of the 125075 requests on the 3225 evaluated stations

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 19-12-2025 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%)	1998 (100.0%)
BGR	3 (0.1%)	6 (0.3%)	35 (1.8%)
BGS	1 (0.0%)	1 (0.0%)	4 (0.2%)
ETH	1 (0.0%)	1 (0.0%)	2 (0.1%)
GFZ	0 (0.0%)	0 (0.0%)	107 (5.4%)
ICGC	9 (0.4%)	3 (0.1%)	23 (1.2%)
INGV	0 (0.0%)	0 (0.0%)	11 (0.6%)
KOERI	26 (1.3%)	88 (4.4%)	6 (0.3%)
LMU	0 (0.0%)	1 (0.0%)	3 (0.2%)
NIEP	9 (0.4%)	11 (0.5%)	16 (0.8%)
NOA	15 (0.7%)	14 (0.7%)	8 (0.4%)
ODC	0 (0.0%)	0 (0.0%)	43 (2.2%)
RESIF	4 (0.2%)	1 (0.0%)	15 (0.8%)
UIB/NORSAR	3 (0.1%)	2 (0.1%)	10 (0.5%)

failures of routing client: 0

failures of federator: 17

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%