

EIDA Availability Report

Created at 14-01-2026 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 14-10-2025 and 14-01-2026 00:32 using station metadata valid since 14-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3330
- evaluated stations: 3225
- number of requests: 125030

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 125030 random requests between 14-10-2025 and 14-01-2026. 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 (260114)

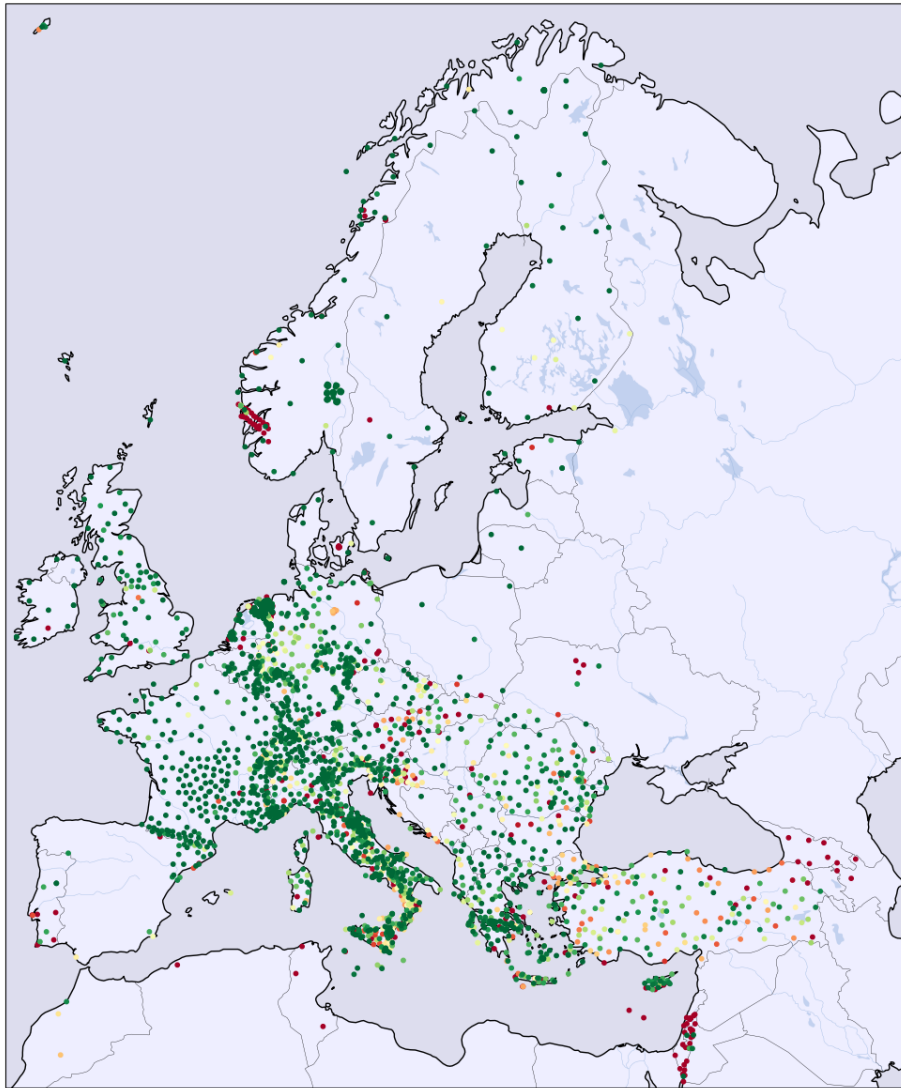


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

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	69	62	42	0	0	0	0	0
2D	195	81	45	0	0	0	0	0
2E	1	100	0	0	0	0	0	0
2I	220	86	34	0	0	0	0	0
3D	78	34	149	0	0	0	1	0
4P	425	58	279	4	20	0	0	0
5A	6	66	0	3	0	0	0	0
5B	33	100	0	0	0	0	0	0
5R	105	60	68	0	0	0	0	0
7B	574	52	515	2	2	0	0	0
7C	0	0	134	0	0	0	1	0
7F	126	96	4	0	0	0	1	0
8D	43	97	0	1	0	0	0	0
8N	57	54	46	1	0	0	0	0
9L	33	70	14	0	0	0	0	0
9S	45	51	43	0	0	0	0	0
AB	0	0	129	0	0	0	0	0
AC	426	92	33	0	0	0	4	0
BE	1239	95	62	0	2	0	0	0
BN	231	64	118	8	0	0	0	0
BQ	394	88	33	0	1	0	15	0
BS	728	65	370	12	4	0	0	0
BW	1873	78	509	0	0	0	0	0
C4	83	67	40	0	0	0	0	0
CA	841	86	112	18	2	0	0	0
CH	3450	91	232	99	1	0	0	0
CL	579	89	67	0	1	0	0	0
CP	0	0	100	0	0	0	0	0
CQ	430	55	336	10	2	0	0	0
CR	530	38	849	0	6	0	0	0
CZ	678	83	129	1	2	0	0	0
DK	588	41	804	0	8	0	1	0
DY	50	32	105	0	0	0	0	0
DZ	0	0	49	0	0	0	0	0
EB	43	100	0	0	0	0	0	0
EE	191	83	36	1	0	0	0	0
EI	402	91	35	0	0	0	0	0
ES	163	79	36	6	0	0	0	0
FN	382	99	3	0	0	0	0	0
FO	121	89	14	0	0	0	0	0
FR	7620	96	269	7	5	0	4	0
GB	2264	94	111	22	3	0	0	0
GE	2567	72	966	3	7	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	170	81	27	3	0	0	8	0
GR	3386	86	486	1	3	0	43	0
GU	1057	80	241	16	0	0	1	0
GX	90	84	14	2	1	0	0	0
HA	1208	92	100	0	1	0	0	0
HC	368	62	207	3	1	0	10	0
HE	677	79	176	0	0	0	0	0
HF	0	0	44	0	0	0	0	0
HL	1952	74	634	50	0	0	0	0
HP	823	92	41	20	1	0	0	0
HS	514	85	79	1	0	0	5	0
HT	1783	79	439	12	8	0	2	2
HU	553	85	91	0	1	0	0	0
IP	0	0	89	0	0	0	0	0
IS	0	0	1611	0	0	0	2	0
IV	14563	79	3502	206	25	0	3	46
IX	423	67	193	11	2	0	0	0
IY	438	60	271	9	1	0	6	0
JS	0	0	204	0	0	0	0	0
K3	20	80	5	0	0	0	0	0
KO	4424	62	778	1690	60	0	91	0
KQ	218	68	48	51	0	0	2	0
LC	0	0	40	0	0	0	0	0
LE	1420	90	107	0	0	0	34	0
LU	468	99	4	0	0	0	0	0
LX	74	65	38	0	1	0	0	0
M1	274	67	133	0	0	0	1	0
MD	118	88	16	0	0	0	0	0
ME	28	58	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	751	66	355	17	0	0	1	0
MT	359	84	65	1	0	0	0	0
NH	277	56	196	2	0	0	14	0
NI	153	70	63	1	0	0	0	0
NL	9680	87	1246	111	25	0	2	0
NO	3380	87	196	9	7	0	252	0
NR	32	11	237	0	0	0	0	0
NS	1619	42	1968	1	0	0	265	0
OE	877	78	211	0	23	0	0	0
OT	548	81	83	6	2	0	0	37
OX	497	69	214	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	204	0	0	0	0	0
QE	234	58	144	1	0	0	22	0
QM	252	72	96	0	0	0	0	0
RD	512	99	3	0	1	0	0	0
RF	41	100	0	0	0	0	0	0
RN	199	47	195	5	16	0	8	0
RO	4047	81	889	6	11	0	2	0
SI	138	54	115	0	0	0	0	0
SJ	449	75	138	6	3	0	0	0
SK	244	51	232	0	0	0	1	0
SL	1058	82	205	6	17	0	0	0
SS	31	86	5	0	0	0	0	0
ST	349	99	1	0	0	0	0	0
SX	598	70	235	1	0	0	14	0
TH	1407	90	130	4	2	0	20	0
TQ	211	52	183	7	1	0	0	0
TT	0	0	139	0	0	0	0	0
TU	102	22	360	0	1	0	0	0
TV	24	53	21	0	0	0	0	0
UD	81	31	173	3	0	0	0	0
UP	418	93	26	0	2	0	0	0
UR	266	70	105	5	0	0	0	0
UT	202	92	16	0	0	0	0	0
VI	256	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	120	0	0	0	0	0
XE	226	58	159	0	0	0	1	0
XP	1472	99	4	0	0	0	0	0
Y8	168	79	43	0	0	0	0	0
YV	102	56	79	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.

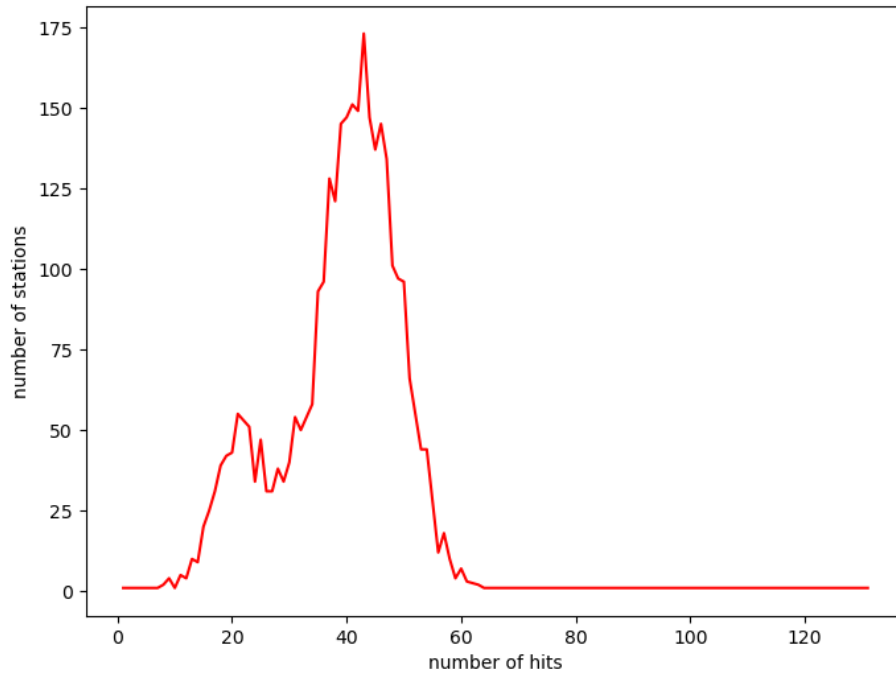


Figure 2: Request hit statistics showing the distribution of the 125030 requests on the 3225 evaluated stations

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 17-12-2025 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%)	1991 (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%)	190 (9.5%)
ICGC	8 (0.4%)	3 (0.1%)	26 (1.3%)
INGV	0 (0.0%)	0 (0.0%)	14 (0.7%)
KOERI	27 (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	16 (0.8%)	14 (0.7%)	11 (0.6%)
ODC	0 (0.0%)	0 (0.0%)	63 (3.2%)
RESIF	3 (0.1%)	1 (0.0%)	18 (0.9%)
UIB/NORSAR	2 (0.1%)	2 (0.1%)	13 (0.7%)

failures of routing client: 0

failures of federator: 24

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%