

EIDA Availability Report

Created at 06-01-2026 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 06-10-2025 and 06-01-2026 00:32 using station metadata valid since 06-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3290
- evaluated stations: 3177
- number of requests: 122915

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 122915 random requests between 06-10-2025 and 06-01-2026. 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 (260106)

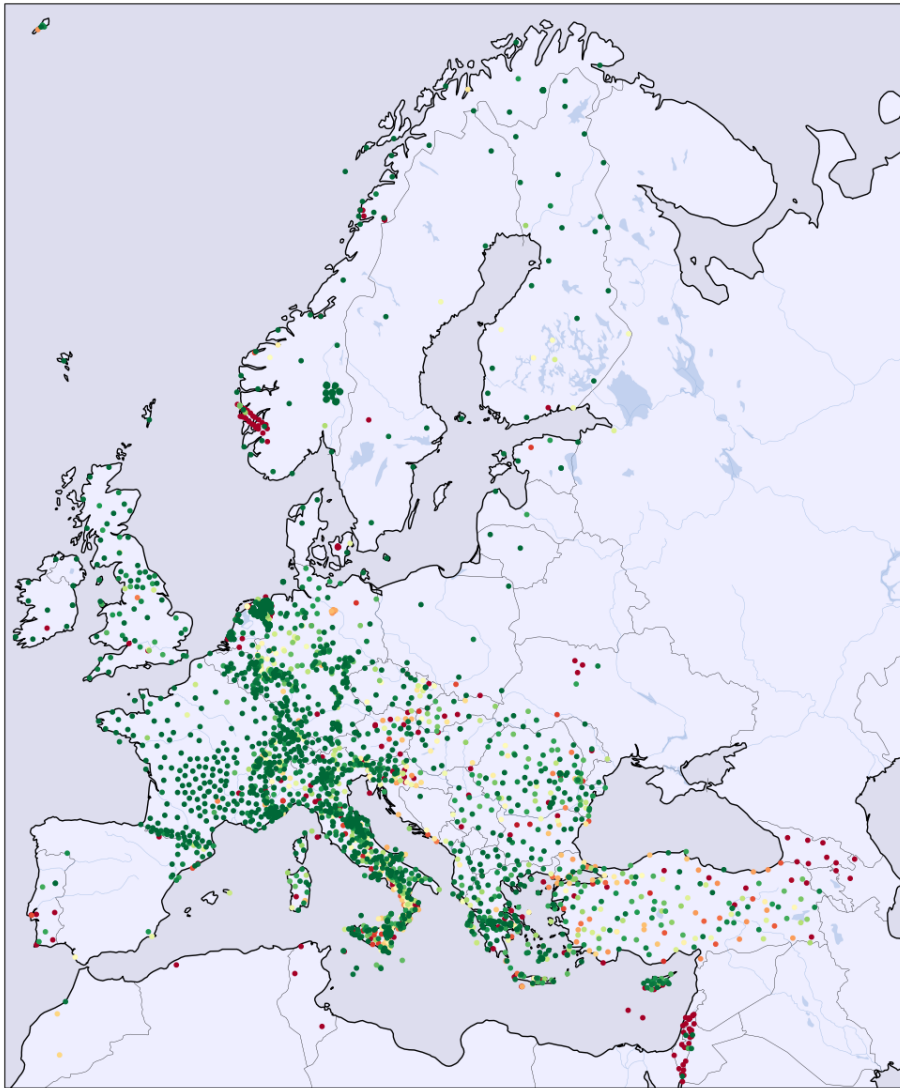


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

Request status statistics of networks:

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
1D	74	83	15	0	0	0	0	0
1I	67	61	42	0	0	0	0	0
2D	193	82	42	0	0	0	0	0
2I	225	86	35	0	0	0	0	0
3D	77	34	148	0	0	0	0	0
4P	438	60	266	3	22	0	0	0
5A	3	60	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	583	52	517	2	2	0	1	0
7C	0	0	136	0	0	0	1	0
7F	118	95	4	0	0	0	1	0
8D	41	97	0	1	0	0	0	0
8N	68	56	52	1	0	0	0	0
9L	33	64	18	0	0	0	0	0
9S	50	53	43	0	0	0	0	0
AB	0	0	132	0	0	0	0	0
AC	432	92	32	0	0	0	4	0
BE	1262	94	65	0	2	0	0	0
BN	219	64	112	7	0	0	2	0
BQ	399	88	37	0	1	0	15	0
BS	722	65	364	13	4	0	0	0
BW	1861	78	514	0	0	0	0	0
C4	81	65	42	0	0	0	0	0
CA	837	86	110	17	2	0	0	0
CH	3396	91	236	93	2	0	0	0
CL	571	90	61	0	0	0	0	0
CP	0	0	97	0	0	0	0	0
CQ	438	56	330	9	2	0	0	0
CR	512	38	795	0	6	0	0	0
CZ	646	83	127	1	2	0	0	0
DK	572	41	798	0	8	0	1	0
DY	49	32	104	0	0	0	0	0
DZ	0	0	47	0	0	0	0	0
EB	43	100	0	0	0	0	0	0
EE	198	84	35	1	0	0	0	0
EI	392	91	35	0	0	0	0	0
ES	163	79	39	3	0	0	0	0
FN	396	98	5	0	0	0	0	0
FO	123	86	19	0	0	0	0	0
FR	7610	96	266	8	4	0	3	0
GB	2166	93	106	20	3	0	15	0
GE	2532	72	948	3	8	0	2	0
GO	0	0	259	0	0	0	0	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
GQ	167	82	24	3	0	0	8	0
GR	3355	86	483	1	4	0	43	0
GU	1070	80	240	19	0	0	1	0
GX	84	84	12	2	1	0	0	0
HA	1197	92	101	0	1	0	0	0
HC	360	61	213	3	1	0	9	0
HE	689	79	183	0	0	0	0	0
HF	0	0	47	0	0	0	0	0
HL	1949	74	622	48	0	0	0	0
HP	807	93	41	19	0	0	0	0
HS	518	87	68	2	0	0	3	0
HT	1771	79	445	12	5	0	0	2
HU	549	85	91	0	1	0	0	0
IP	0	0	86	0	0	0	0	0
IS	0	0	1609	0	0	0	1	0
IV	14472	79	3512	200	29	0	3	45
IX	398	65	195	11	3	0	0	0
IY	440	60	279	6	1	0	6	0
JS	0	0	208	0	0	0	0	0
K3	21	80	5	0	0	0	0	0
KO	4383	62	774	1718	56	0	91	0
LC	0	0	40	0	0	0	0	0
LE	1413	90	107	0	0	0	33	0
LU	453	96	15	0	0	0	0	0
LX	76	63	42	0	2	0	0	0
M1	284	67	138	0	0	0	1	0
MD	115	87	17	0	0	0	0	0
ME	27	56	21	0	0	0	0	0
MK	368	99	1	0	0	0	0	0
ML	67	81	15	0	0	0	0	0
MN	747	66	358	16	1	0	1	0
MT	349	83	68	1	0	0	0	0
NH	263	53	215	2	0	0	14	0
NI	150	69	63	2	0	0	0	0
NL	9728	87	1237	111	22	0	2	0
NO	3412	88	194	9	7	0	252	0
NR	28	10	241	0	0	0	0	0
NS	1638	42	1953	1	0	0	266	0
OE	865	78	212	0	22	0	0	0
OT	536	79	91	7	2	0	0	36
OX	495	69	207	3	2	0	2	0
PL	352	99	2	0	0	0	0	0
PM	35	14	202	0	0	0	0	0
QE	230	58	143	1	0	0	22	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
QM	256	72	97	0	0	0	0	0
RD	511	99	2	0	1	0	0	0
RF	38	100	0	0	0	0	0	0
RO	4060	81	903	6	10	0	3	0
SI	132	53	113	0	0	0	0	0
SJ	449	75	139	4	3	0	0	0
SK	241	50	237	0	0	0	1	0
SL	1071	83	195	6	18	0	0	0
SS	28	84	5	0	0	0	0	0
ST	350	99	1	0	0	0	0	0
TH	1389	90	128	3	2	0	20	0
TQ	198	50	182	9	1	0	0	0
TT	0	0	134	0	0	0	0	0
TU	98	20	370	0	1	0	0	0
TV	25	54	21	0	0	0	0	0
UD	82	30	181	3	0	0	0	0
UP	424	94	23	0	2	0	0	0
UR	253	70	100	4	0	0	4	0
UT	200	93	13	0	0	0	0	0
VI	237	80	55	3	1	0	0	0
VM	51	100	0	0	0	0	0	0
WE	0	0	37	0	0	0	0	0
WM	98	47	107	0	0	0	0	0
XE	226	59	156	0	0	0	1	0
XP	1462	99	4	0	0	0	0	0
Y8	162	80	40	0	0	0	0	0
YV	103	56	79	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.

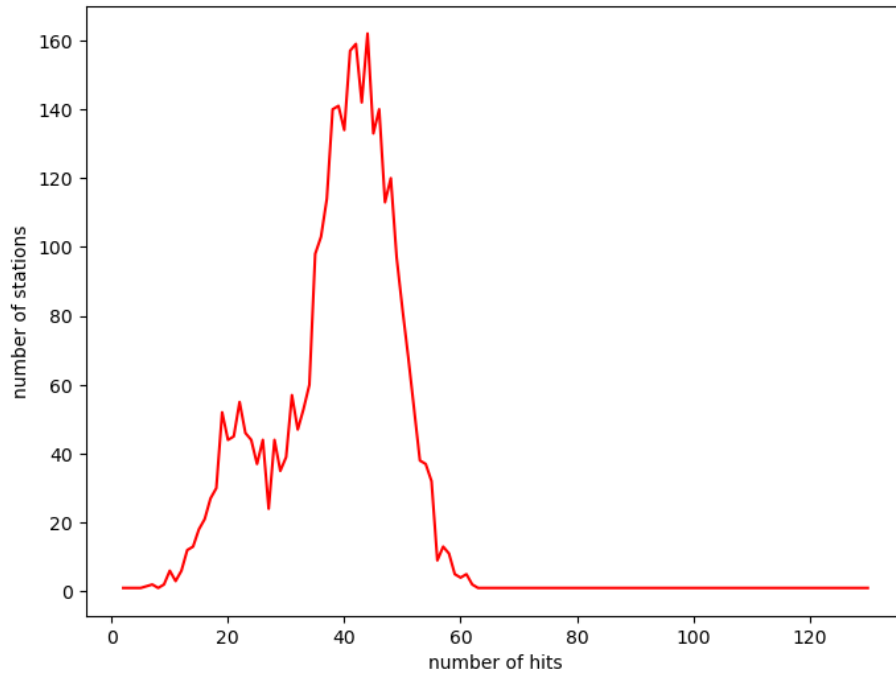


Figure 2: Request hit statistics showing the distribution of the 122915 requests on the 3177 evaluated stations

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 09-12-2025 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%)	1977 (100.0%)
BGR	3 (0.1%)	6 (0.3%)	32 (1.6%)
BGS	1 (0.0%)	1 (0.0%)	6 (0.3%)
ETH	0 (0.0%)	1 (0.0%)	3 (0.2%)
GFZ	0 (0.0%)	0 (0.0%)	246 (12.4%)
ICGC	4 (0.2%)	1 (0.0%)	21 (1.1%)
INGV	1 (0.0%)	0 (0.0%)	18 (0.9%)
KOERI	21 (1.0%)	85 (4.2%)	9 (0.5%)
LMU	3 (0.1%)	3 (0.1%)	7 (0.4%)
NIEP	10 (0.5%)	10 (0.5%)	18 (0.9%)
NOA	17 (0.8%)	15 (0.7%)	15 (0.8%)
ODC	0 (0.0%)	0 (0.0%)	72 (3.6%)
RESIF	3 (0.1%)	2 (0.1%)	15 (0.8%)
UIB/NORSAR	37 (1.8%)	87 (4.3%)	30 (1.5%)

failures of routing client: 0

failures of federator: 38

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%