

EIDA Availability Report

Created at 09-01-2026 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 09-10-2025 and 09-01-2026 00:32 using station metadata valid since 09-01-2025.

Counters:

- unrestricted stations offering channels HHZ,BHZ,EHZ,SHZ: 3290
- evaluated stations: 3185
- number of requests: 123178

Waveform availability plot

Color coded plot of evaluated EIDA stations. Shows results of 123178 random requests between 09-10-2025 and 09-01-2026. 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 (260109)

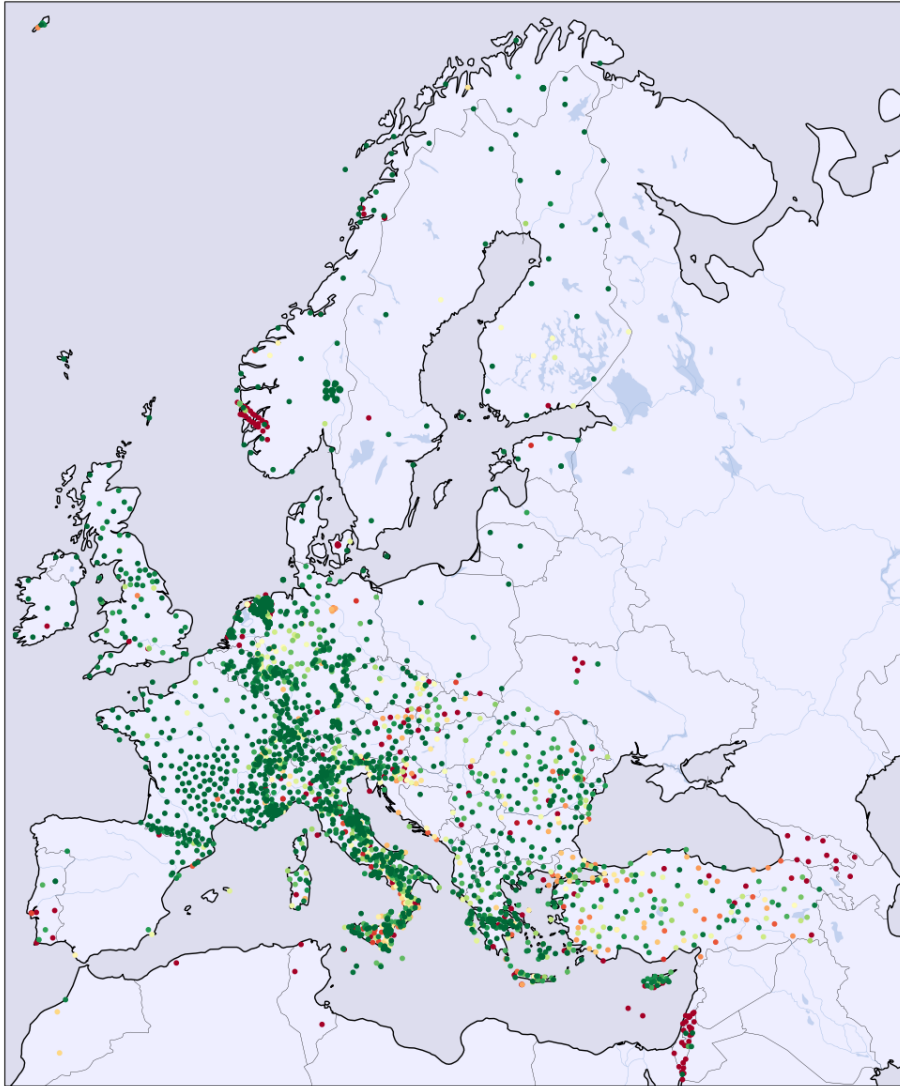


Figure 1: Availability of stations: green 100%, yellow 50%, red 0%

Request status statistics of networks:

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
1D	75	83	15	0	0	0	0	0
1I	67	61	42	0	0	0	0	0
2D	189	81	42	0	0	0	0	0
2E	1	100	0	0	0	0	0	0
2I	222	86	34	0	0	0	0	0
3D	77	34	146	0	0	0	0	0
4P	433	59	268	3	23	0	0	0
5A	5	62	0	3	0	0	0	0
5B	35	100	0	0	0	0	0	0
5R	105	60	68	0	0	0	0	0
7B	571	52	516	2	1	0	1	0
7C	0	0	136	0	0	0	1	0
7F	117	95	4	0	0	0	1	0
8D	41	97	0	1	0	0	0	0
8N	65	56	49	1	0	0	0	0
9L	32	66	16	0	0	0	0	0
9S	46	51	43	0	0	0	0	0
AB	0	0	134	0	0	0	0	0
AC	430	92	32	0	0	0	4	0
BE	1256	95	63	0	2	0	0	0
BN	222	64	114	7	0	0	0	0
BQ	401	88	38	0	1	0	15	0
BS	729	65	370	13	4	0	0	0
BW	1871	78	513	0	0	0	0	0
C4	86	67	42	0	0	0	0	0
CA	842	86	110	18	2	0	0	0
CH	3418	91	235	95	2	0	0	0
CL	574	89	65	0	1	0	0	0
CP	0	0	100	0	0	0	0	0
CQ	441	55	340	10	2	0	0	0
CR	524	39	810	0	6	0	0	0
CZ	655	83	129	1	2	0	0	0
DK	586	41	808	0	8	0	1	0
DY	47	31	102	0	0	0	0	0
DZ	0	0	49	0	0	0	0	0
EB	42	100	0	0	0	0	0	0
EE	197	84	35	1	0	0	0	0
EI	401	91	35	0	0	0	0	0
ES	162	80	36	4	0	0	0	0
FN	387	99	3	0	0	0	0	0
FO	118	87	17	0	0	0	0	0
FR	7603	96	266	8	4	0	3	0
GB	2175	94	103	19	3	0	8	0
GE	2550	72	959	3	8	0	2	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
GO	0	0	255	0	0	0	0	0
GQ	164	82	24	3	0	0	8	0
GR	3379	86	476	1	4	0	43	0
GU	1070	80	241	18	0	0	1	0
GX	88	85	12	2	1	0	0	0
HA	1189	92	100	0	1	0	0	0
HC	368	62	208	3	1	0	9	0
HE	684	78	185	0	0	0	0	0
HF	0	0	46	0	0	0	0	0
HL	1939	74	632	47	0	0	0	0
HP	811	93	40	19	0	0	0	0
HS	515	86	75	1	0	0	5	0
HT	1791	79	441	11	6	0	0	2
HU	540	85	93	0	1	0	0	0
IP	0	0	90	0	0	0	0	0
IS	0	0	1606	0	0	0	1	0
IV	14537	79	3536	203	28	0	3	45
IX	407	66	189	11	3	0	0	0
IY	437	60	276	7	1	0	6	0
JS	0	0	210	0	0	0	0	0
K3	21	80	5	0	0	0	0	0
KO	4426	62	776	1698	59	0	91	0
LC	0	0	40	0	0	0	0	0
LE	1403	90	108	0	0	0	33	0
LU	461	96	16	0	0	0	0	0
LX	77	65	40	0	1	0	0	0
M1	280	66	139	0	0	0	1	0
MD	116	87	17	0	0	0	0	0
ME	27	56	21	0	0	0	0	0
MK	370	99	1	0	0	0	0	0
ML	65	80	16	0	0	0	0	0
MN	752	65	368	18	1	0	1	0
MT	353	84	66	1	0	0	0	0
NH	272	54	209	2	0	0	14	0
NI	152	70	63	1	0	0	0	0
NL	9691	87	1252	109	23	0	2	0
NO	3401	87	196	10	7	0	252	0
NR	28	10	236	0	0	0	0	0
NS	1643	42	1958	1	0	0	266	0
OE	874	78	213	0	22	0	0	0
OT	530	79	87	7	2	0	0	37
OX	498	69	210	2	2	0	2	0
PL	354	99	2	0	0	0	0	0
PM	30	12	205	0	0	0	0	0

Request status statistics of networks (continued):

net	OK	OK in %	NODATA	FRAGMENT	INCOMPL	METAFAIL	NOSERV	RESTFAIL
QE	230	58	141	1	0	0	22	0
QM	254	72	97	0	0	0	0	0
RD	514	99	3	0	1	0	0	0
RF	39	100	0	0	0	0	0	0
RO	4062	81	901	7	10	0	3	0
SI	138	54	115	0	0	0	0	0
SJ	450	75	138	5	3	0	0	0
SK	244	51	233	0	0	0	1	0
SL	1063	82	198	6	18	0	0	0
SS	29	82	6	0	0	0	0	0
ST	351	99	1	0	0	0	0	0
TH	1390	90	125	3	2	0	20	0
TQ	199	51	180	9	1	0	0	0
TT	0	0	134	0	0	0	0	0
TU	101	21	363	0	1	0	0	0
TV	25	54	21	0	0	0	0	0
UD	83	31	177	3	0	0	0	0
UP	422	94	23	0	2	0	0	0
UR	258	70	102	4	0	0	4	0
UT	202	93	13	0	0	0	0	0
VI	246	80	55	3	1	0	0	0
VM	48	100	0	0	0	0	0	0
WE	0	0	38	0	0	0	0	0
WM	99	46	113	0	0	0	0	0
XE	223	58	160	0	0	0	1	0
XP	1446	99	4	0	0	0	0	0
Y8	168	80	42	0	0	0	0	0
YV	103	56	80	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.

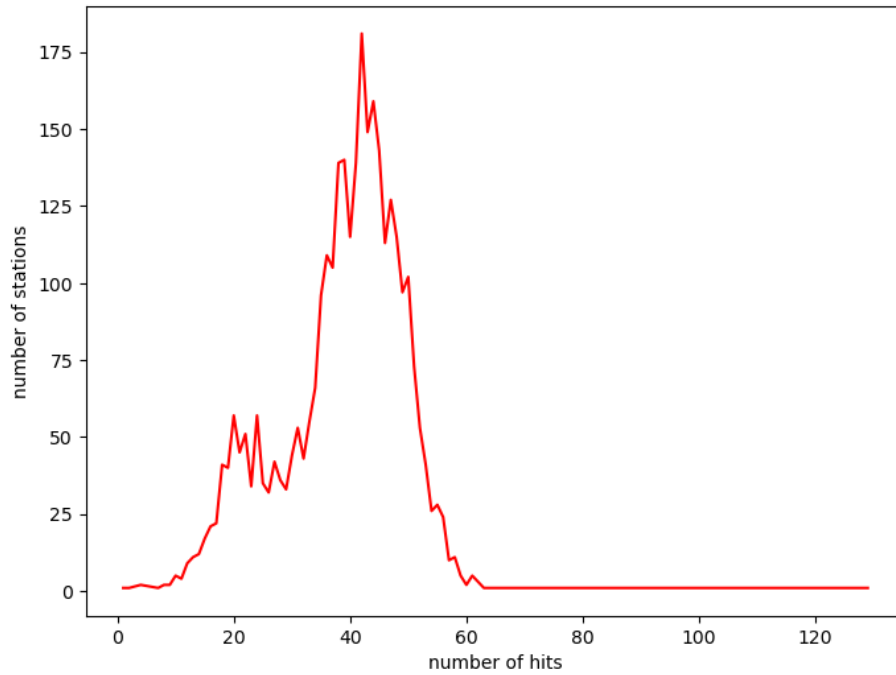


Figure 2: Request hit statistics showing the distribution of the 123178 requests on the 3185 evaluated stations

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 12-12-2025 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%)	1983 (100.0%)
BGR	3 (0.1%)	6 (0.3%)	40 (2.0%)
BGS	1 (0.0%)	1 (0.0%)	7 (0.4%)
ETH	0 (0.0%)	0 (0.0%)	3 (0.2%)
GFZ	0 (0.0%)	0 (0.0%)	218 (11.0%)
ICGC	6 (0.3%)	1 (0.0%)	25 (1.3%)
INGV	1 (0.0%)	0 (0.0%)	19 (1.0%)
KOERI	25 (1.2%)	87 (4.3%)	10 (0.5%)
LMU	1 (0.0%)	1 (0.0%)	6 (0.3%)
NIEP	9 (0.4%)	11 (0.5%)	18 (0.9%)
NOA	18 (0.9%)	15 (0.7%)	12 (0.6%)
ODC	0 (0.0%)	0 (0.0%)	69 (3.5%)
RESIF	3 (0.1%)	2 (0.1%)	19 (1.0%)
UIB/NORSAR	2 (0.1%)	3 (0.1%)	11 (0.6%)

failures of routing client: 0

failures of federator: 32

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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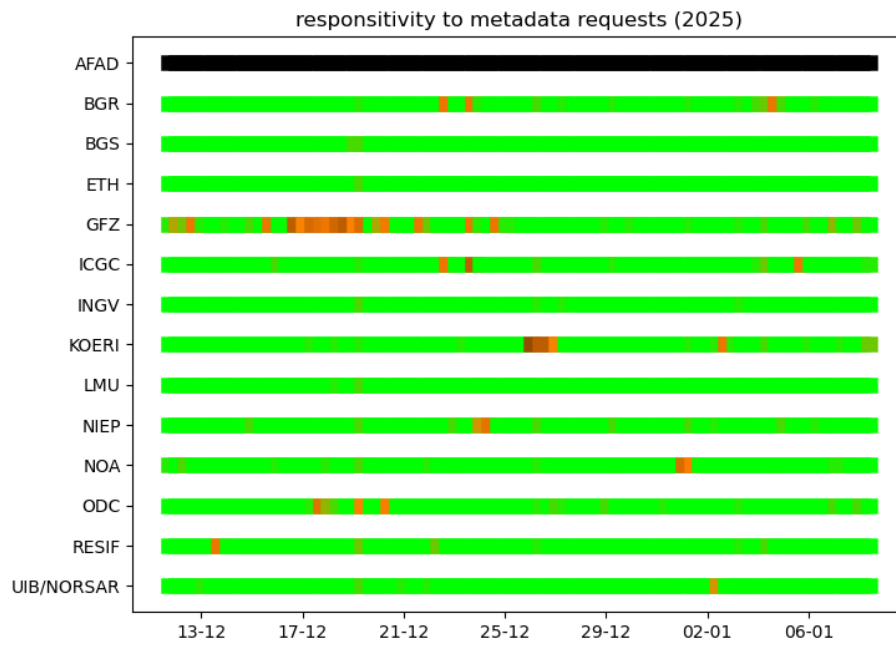


Figure 3: Responsiveness of all servers plotted with a granularity of 8h; green = 0% errors, orange = 10%, brown = 50%, black = 100%