

**KOERI-1868**

**Seismic Monitoring in Turkey:  
Weak and Strong Motion Network [KOERI]**

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# Mission of seismic monitoring

- Near-real time source parameter estimations (location and size)
- RT ELER (damage and loss estimation)  
<http://kandilli.info>
- Earthquake and Tsunami early warning

# Seismic Monitoring in KOERI

## Regional Earthquake & Tsunami Monitoring Center

- weak motion stations (bb)
- strong motion stations(sm)
- obs (bb+sm)
- sea level observations
- OBJECTIVES:
- observing seismic activity at 7/24 basis
- provide earthquake information, parametric and waveform data
- earthquake & tsunami early warning

## Earthquake Engineering Department

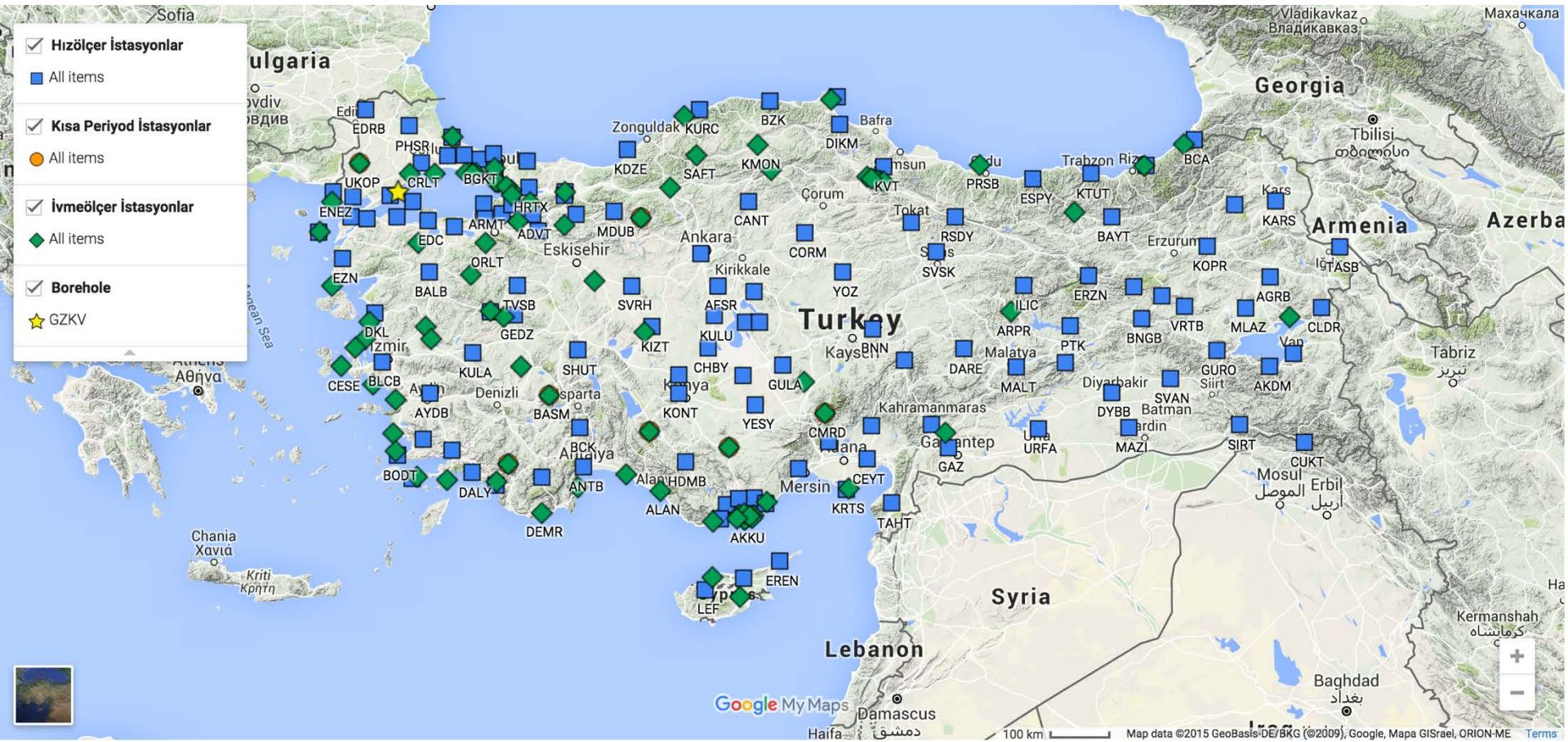
- strong motion stations
- OBJECTIVES:
- earthquake early warning
- rapid damage assessment
- estimation of intensity map
- Structural health monitoring in Istanbul
- 

## Belbaşı Nuclear Test Monitoring Center (1951)

Belbaşı and Keskin seismic arrays (bb+sp stations)  
Sending data to IDC (Vienna) and NDC (KOERI)

# Description of the seismic network (BB/SM)

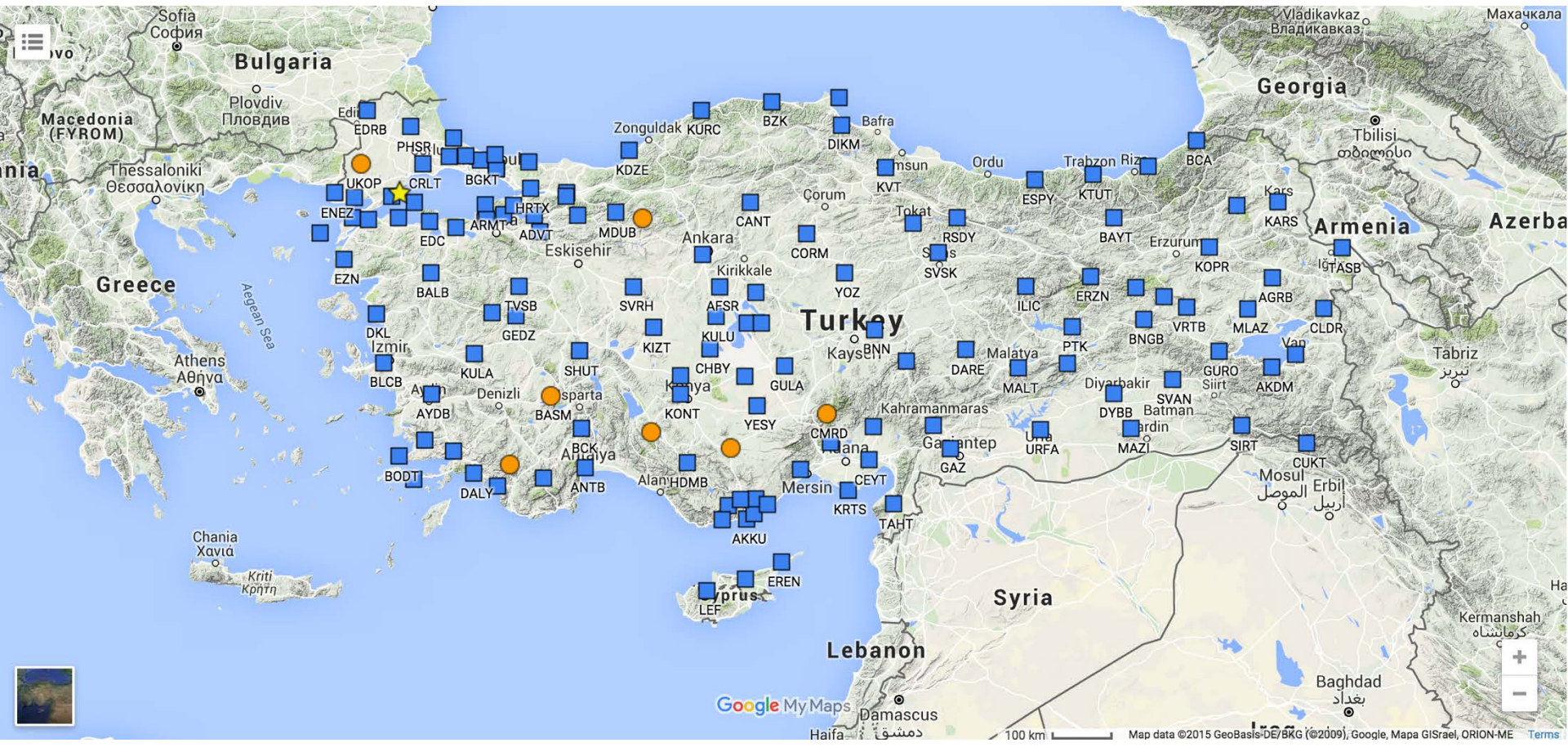
BB: 127 blue, SM:88 green, SP: 8 orange





# Description of the seismic network (BB/SP)

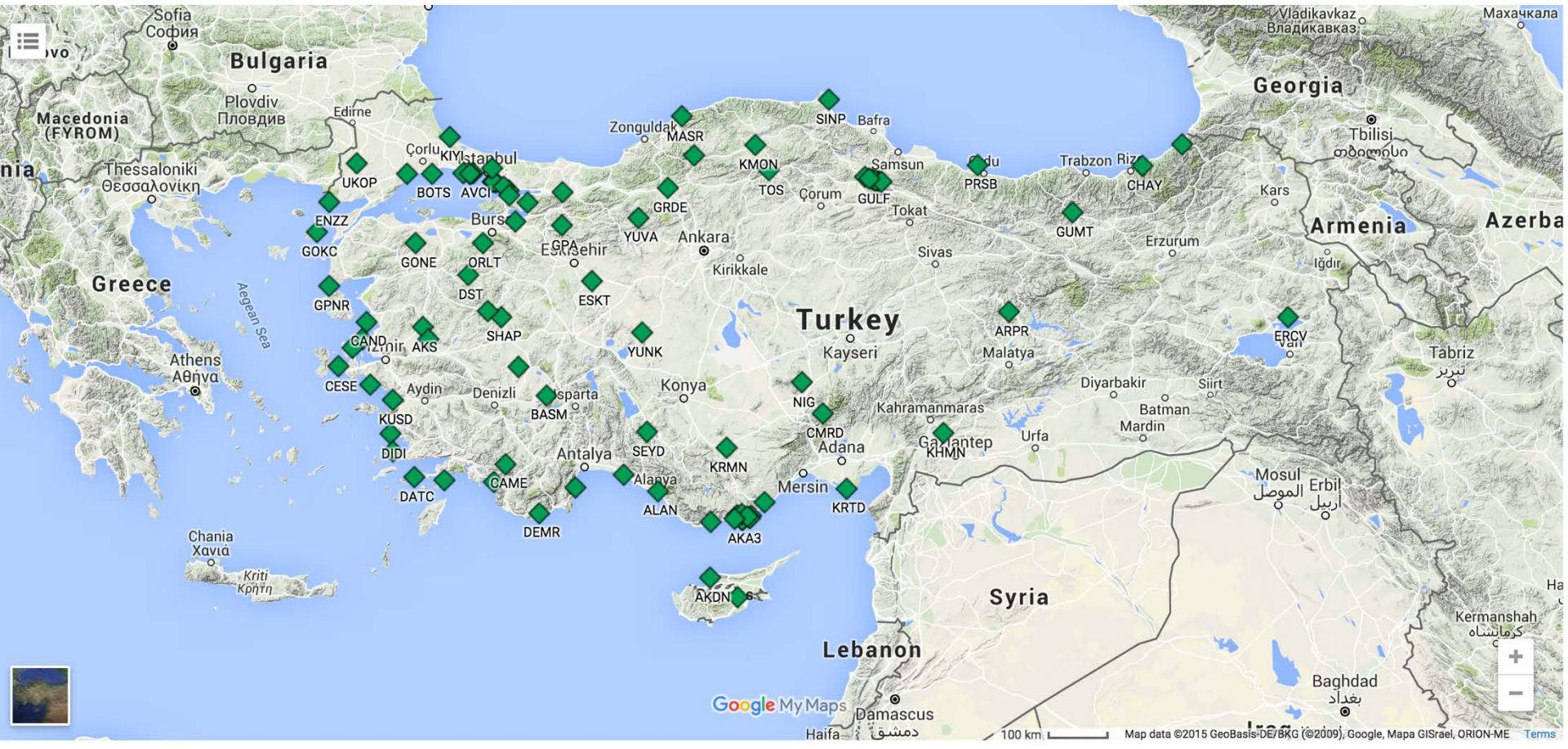
BB: 127 blue, SP: 8 orange





# Description of the seismic network (SM)

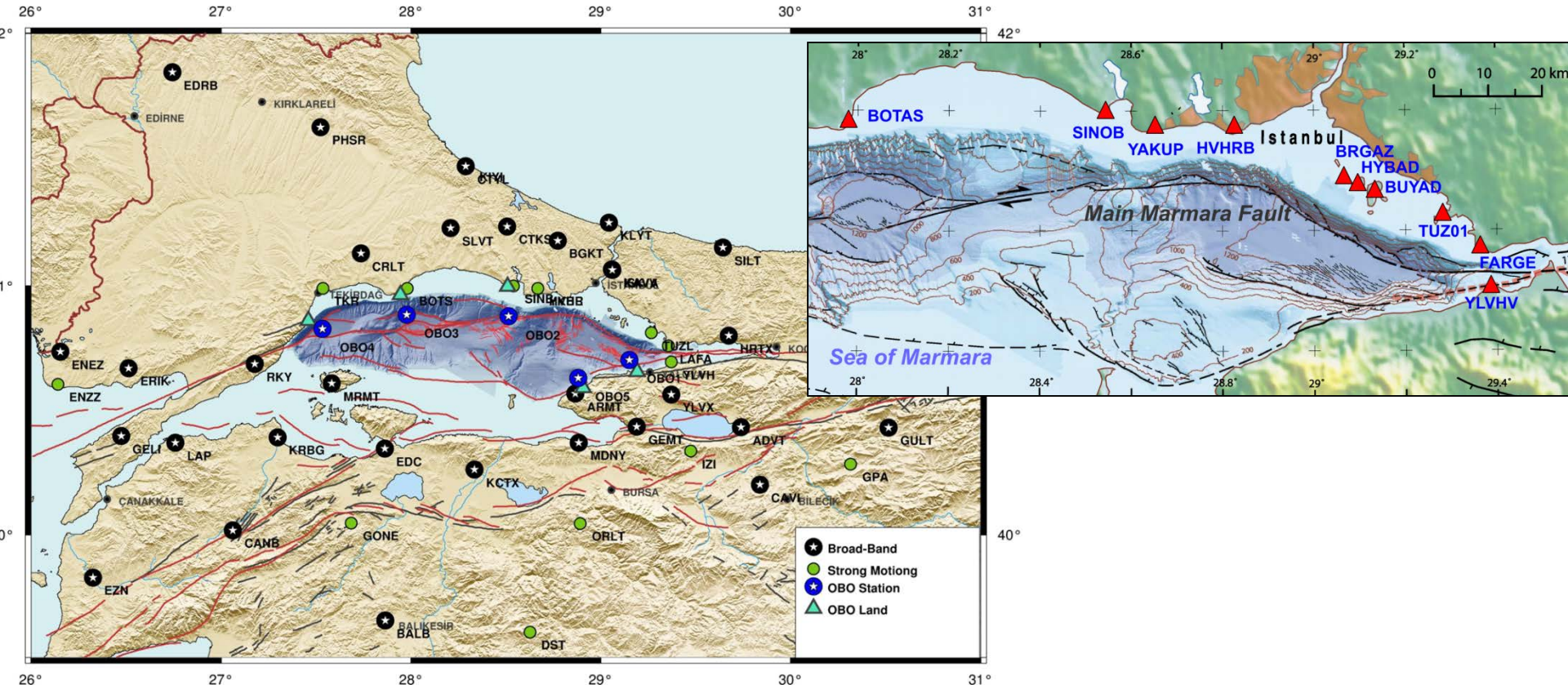
SM:88 green





# Description of the seismic network

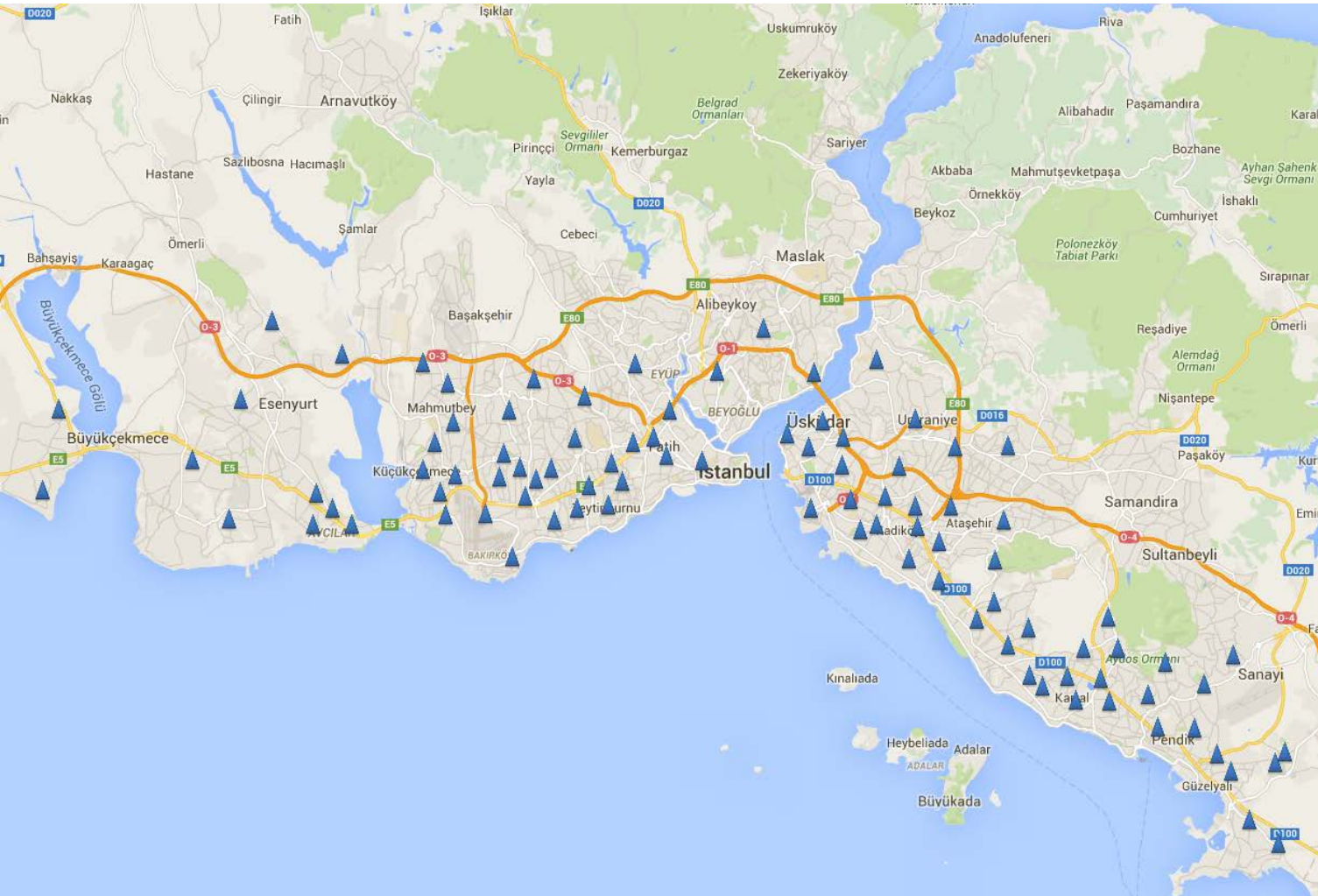
## Marmara region





# Description of the seismic network

Seismic network within the city of Istanbul : 110 SM



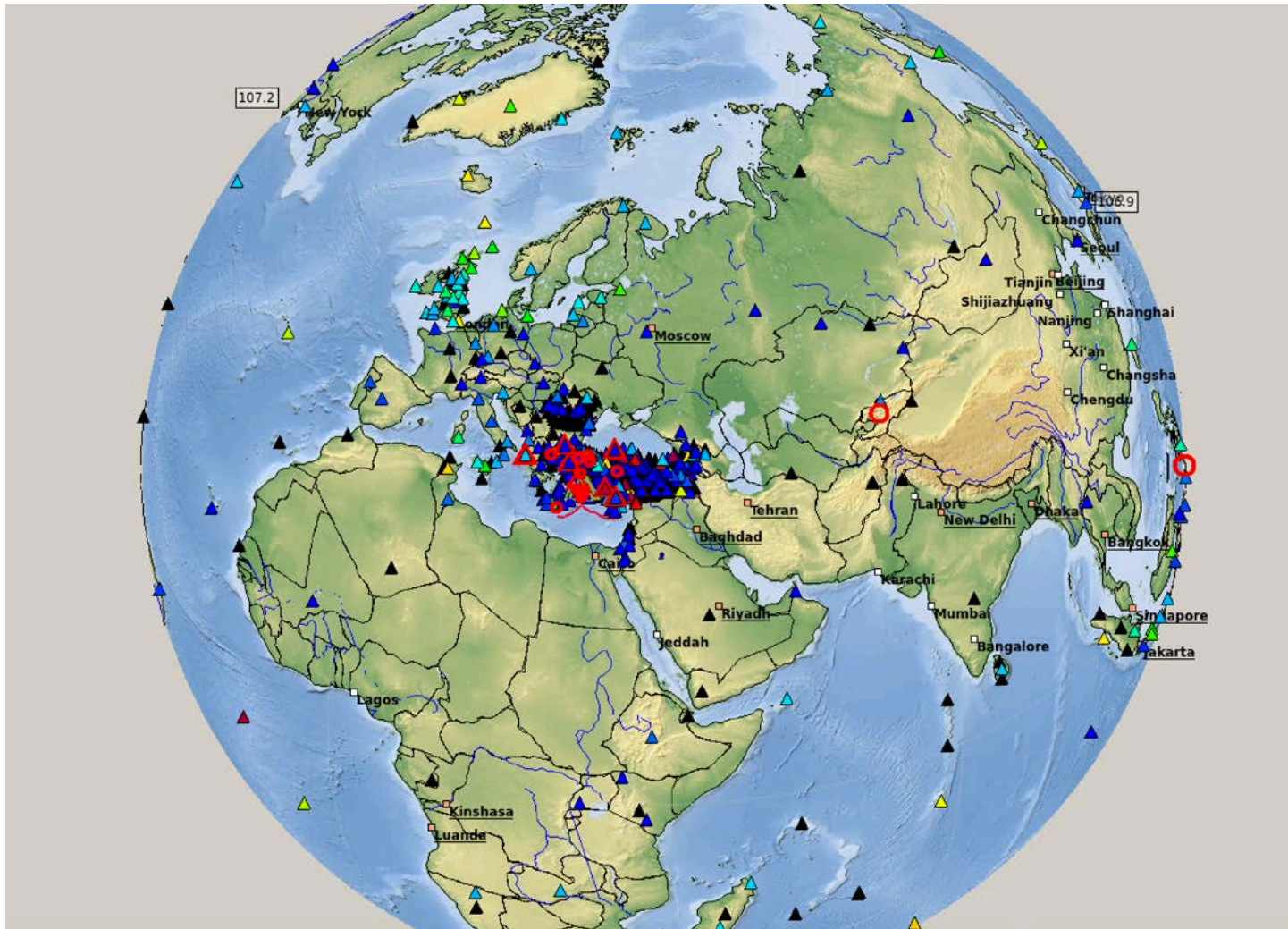
# Description of the seismic network

## Seismic monitoring in buildings: Istanbul



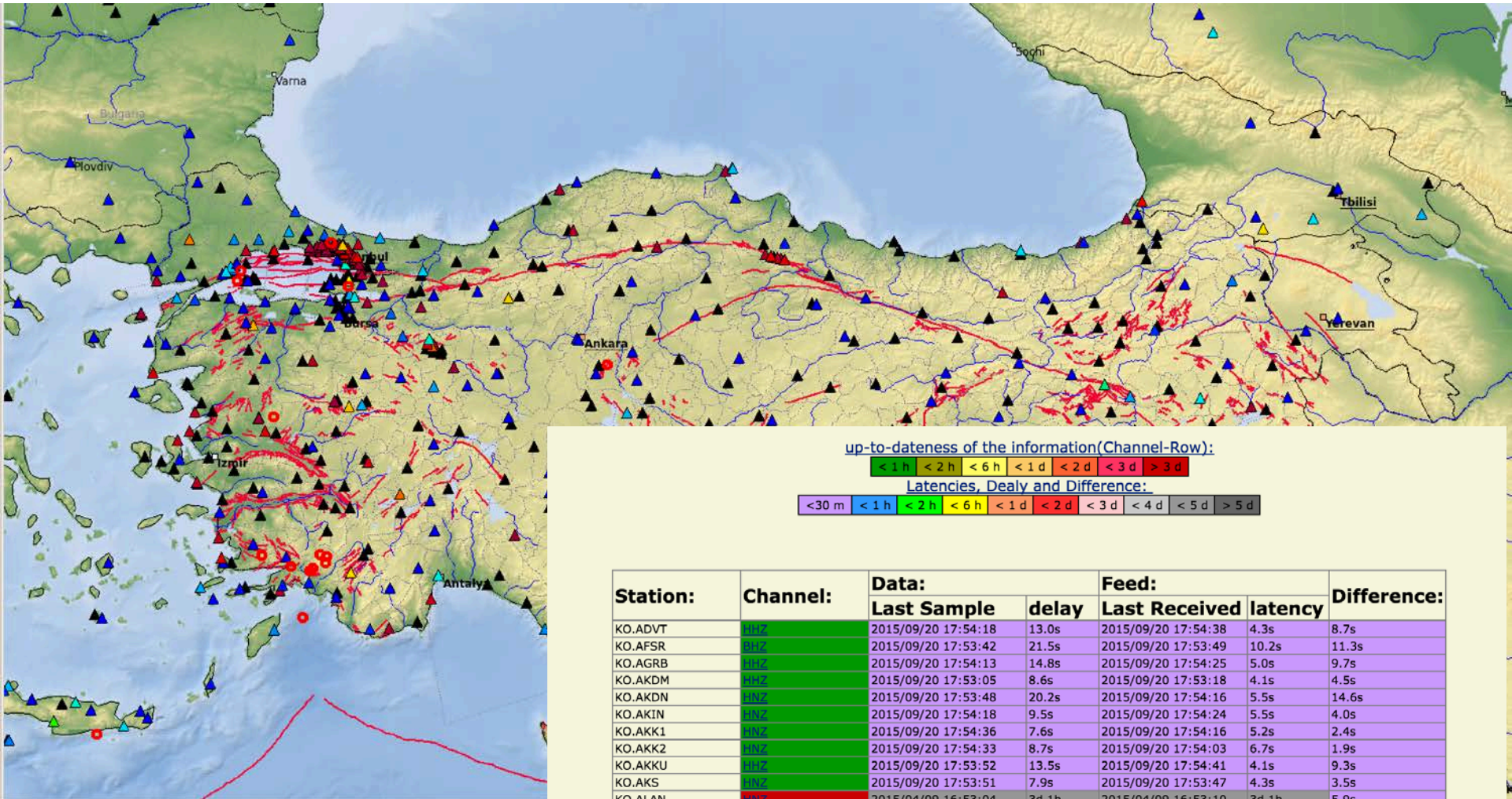


# Data acquisition/quality control





# Data acquisition/quality control



Station:	Channel:	Data:		Feed:		Difference:
		Last Sample	delay	Last Received	latency	
KO.ADVT	HNZ	2015/09/20 17:54:18	13.0s	2015/09/20 17:54:38	4.3s	8.7s
KO.AFSR	HNZ	2015/09/20 17:53:42	21.5s	2015/09/20 17:53:49	10.2s	11.3s
KO.AGRB	HNZ	2015/09/20 17:54:13	14.8s	2015/09/20 17:54:25	5.0s	9.7s
KO.AKDM	HNZ	2015/09/20 17:53:05	8.6s	2015/09/20 17:53:18	4.1s	4.5s
KO.AKDN	HNZ	2015/09/20 17:53:48	20.2s	2015/09/20 17:54:16	5.5s	14.6s
KO.AKIN	HNZ	2015/09/20 17:54:18	9.5s	2015/09/20 17:54:24	5.5s	4.0s
KO.AKK1	HNZ	2015/09/20 17:54:36	7.6s	2015/09/20 17:54:16	5.2s	2.4s
KO.AKK2	HNZ	2015/09/20 17:54:33	8.7s	2015/09/20 17:54:03	6.7s	1.9s
KO.AKKU	HNZ	2015/09/20 17:53:52	13.5s	2015/09/20 17:54:41	4.1s	9.3s
KO.AKS	HNZ	2015/09/20 17:53:51	7.9s	2015/09/20 17:53:47	4.3s	3.5s
KO.ALAN	HNZ	2015/04/09 16:53:04	3d 1h	2015/04/09 16:53:10	3d 1h	5.9s
KO.ANTB	HNZ	2015/09/20 17:53:54	10.7s	2015/09/20 17:54:39	4.0s	6.6s
KO.ARMT	HNZ	2015/09/20 17:53:46	9.2s	2015/09/20 17:54:19	5.0s	4.1s

# Data archival:

- Seedlink & Arclink modules of SC3 for short and long term archives: continuous waveforms in mseed
- Data archival in GCF format since 1997
- Event based archives: SAC format, zip files since 2002
- Backup of all the archives at ULAKBIM computer center with huge storage capacity

# Data distribution/policy

<http://www.koeri.boun.edu.tr/sismo/2/en/>



BOĞAZIÇI UNIVERSITY  
KANDILLI OBSERVATORY AND EARTHQUAKE RESEARCH INSTITUTE  
REGIONAL EARTHQUAKE-TSUNAMI MONITORING CENTER



- Home
- Latest Earthquakes
- Seismic Network
- Earthquake Catalog
- Data Request
- Tsunami
- Personnel
- Sitemap
- YouTube

SON 5 DEPREM-DUYURULAR | 5.09.20 16:37:01 | ~6 saat önce 2.1 (ML) UCEM-BALA (ANKARA) 2015.09.20 13:53:53 | HABER: 13 Eylül 2015 Otmanlar-Köyceğiz (Muğla) Dr

[BOUN KOERI Regional Earthquake-Tsunami Monitoring Center](#) » [Data Request](#)

## [Events](#)

Since: [01.2004 M> 3.5](#)  
Waveform Format: SAC  
Connection: FTP

Since : [05.2002 \(All events\)](#)  
user name : waveform  
Waveform Format : SAC  
Connection : FTP

## [Continuous Waveforms](#)

Since : [April 2005 to Mayıs 2013](#)  
Waveform Format : SAC  
Connection : FTP

Since : [01.2006](#)  
Waveform Format : miniSEED  
Connection : FDSNWS

\* It is possible to download the data via [EIDA](#) and [webdc.eu](#) interfaces.

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## Tags



# Data distribution/policy :

## KOERI as an EIDA node and shares 183 BB and SM stations



Access to GEOFON and EIDA Data Archives



HELMHOLTZ-ZENTRUM POTSDAM  
DEUTSCHES  
GEFORSCHUNGSZENTRUM

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[OLD webdc.eu.portal](http://OLD.webdc.eu.portal) [PDF Help](#)

www.orfeus-eu.org/eida/



This map shows EIDA stations with unrestricted data access (total number: **5042**). Green triangles represent stations that are in operation (open; **1853**) according to the current metadata, while the orange triangles indicate stations that have stopped operation (closed: **3189**). ORFEUS Data Center updates this map daily (last update: **2015-09-20 12:18:02**).

operational station
  closed station
  EIDA node
  show station name labels

Map: operational versus closed stations

### EIDA nodes and additional services/data:

Currently 10 nodes are contributing their data to EIDA. Eight of them, called "primary nodes", have committed resources to ensure the EIDA operations and to support further developments. The region indicates the focus of operation for each node. Identical requests for open data to each EIDA nodes provide identical data. Each node may also provide unique, restricted data and additional services. Click on a node for detailed information on specific datasets and/or access tools.

<b>KNMI / ODC</b>	European-Mediterranean, Netherlands
<b>GFZ</b>	European, Global, temporary deployments
<b>RESIF</b>	France + Global temporary deployments
<b>INGV</b>	Italy, European-Mediterranean (MedNet)
<b>ETH</b>	Switzerland
<b>BGR</b>	Germany
<b>NIEP</b>	Romania
<b>KOERI</b>	Turkey
<b>IPGP</b>	France (volcanological observatories) + Global (GEOSCOPE)
<b>LMU</b>	Germany (BayernNetz)



Koninkrijk Nederland  
Ministerie van Infrastructuur en Water  
Ministerie van Infrastructuur en Water



# Data distribution/policy :

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### Stations Controls

**Station Information**

**Networks**

Year from 1980 to 2015:

Network Type:

Network Code:  
  
\* = temporary network; + = restricted access

**Stations**

Filter stations by station code:

**Streams**

Choose the desired set of channels:  
Use SHIFT and CTRL to extend the set.

HH  
BH  
LH  
HN

### Event and Station Map

4.35, 38.13

Harita verileri ©2015 Google, INEGI, ORION-ME  
Use left SHIFT + drag mouse to select regions. [Legend Help](#)

#### Legend for Map icons

**Stations**

- ▲ Open and permanent
- ▲ Restricted and permanent
- ▲ Open and temporary
- ▲ Restricted and temporary
- △ Uncategorized Station

**Events**

- Magnitude < 6.0
- Magnitude ≥ 6.0

### Event and Station List

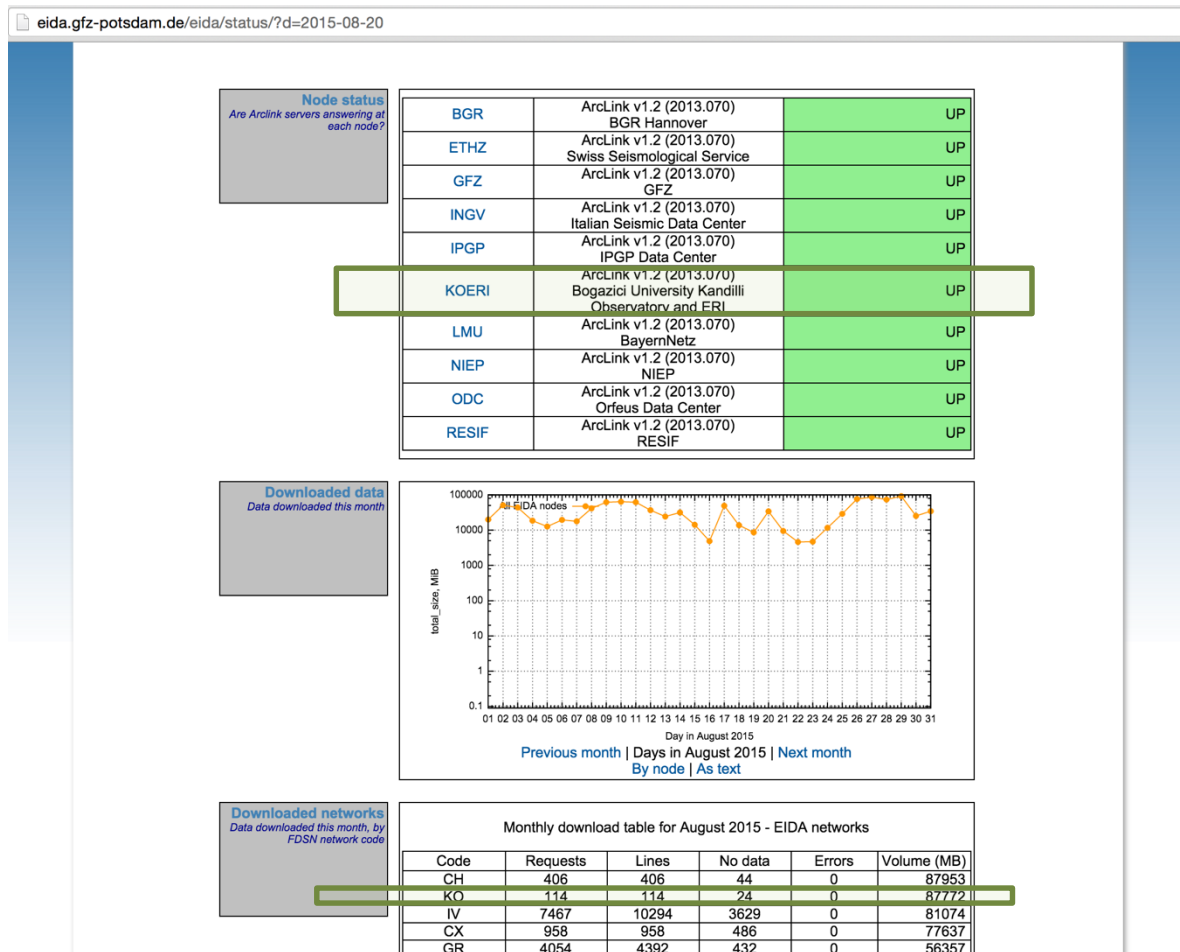
**Events**

No Events

**Stations**

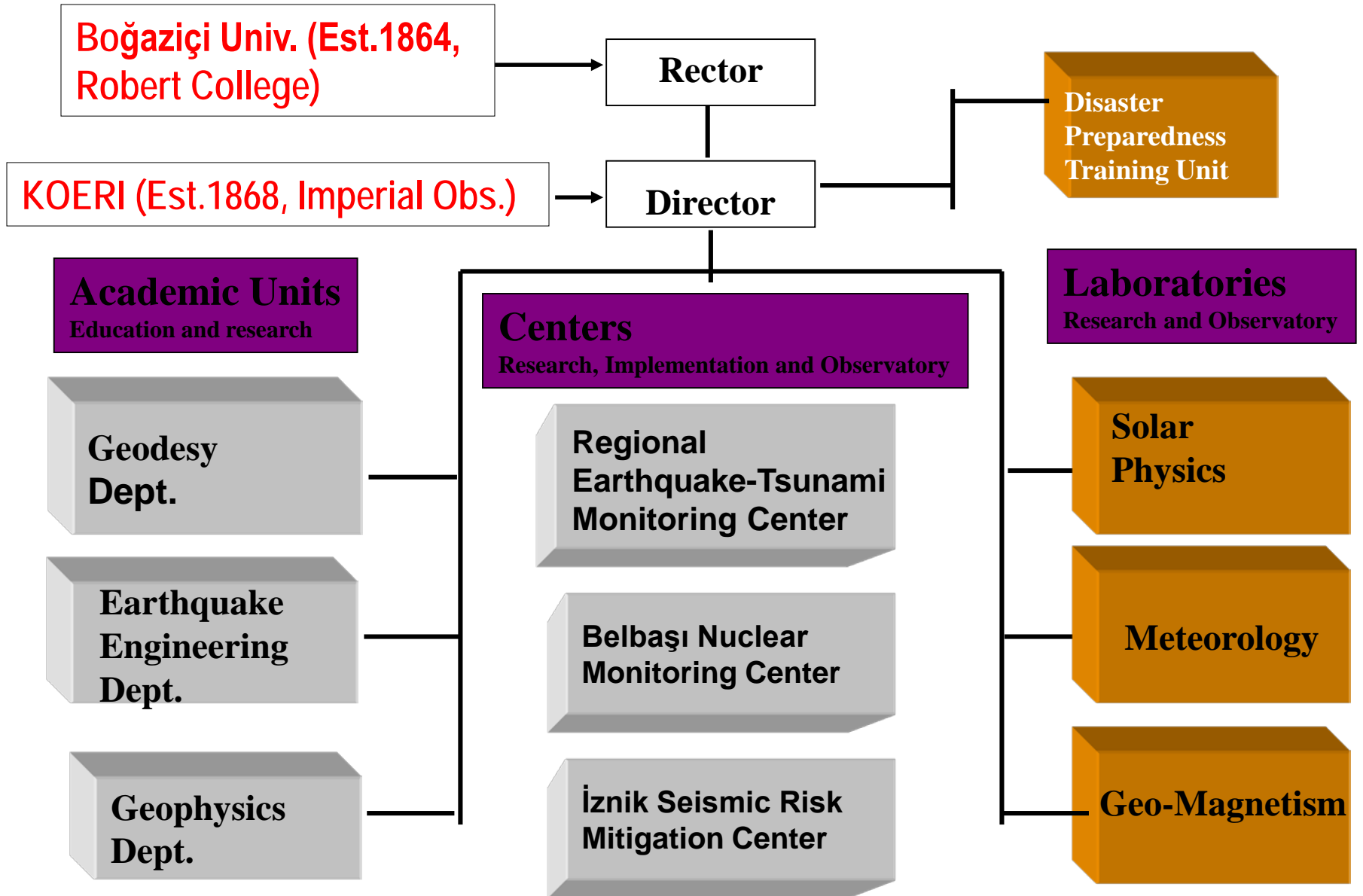
Net	Code	Lat	Lon	Depth	Mag	Mag	Mag	Mag
<input checked="" type="checkbox"/>	1B	ITOJ	0.84	30.23	O	.HHE,.HHN,.HHZ		
<input checked="" type="checkbox"/>	1B	1ACA	-0.28	20.04	O	.HHE,.HHN,.HHZ		

# eida status and usage (August, 2015)





# KOERI Organization



## Relation with ORFEUS and regional cooperations

- KOERI is represented at ORFEUS by the Director of the Institute; member of ORFEUS Board of Directors
- Takes part in Acceleration and Strong Motion Data (WG5)
- Real-time data exchange with AFAD, Thessaloniki Aristoteles University (Greece), Crete, Bulgaria, Romania, Georgia

# Current and future funding/projects

- Ministry of development
- EU projects
- EPOS-IP (EPOS-Seismology, EPOS-NFO, EPOS-GNSS)
- MARsite
- Turkey-Japan SATREPS Project; Mardim
- CTBTO
- Part of ICG/NEAMTWS tsunami coordination group



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