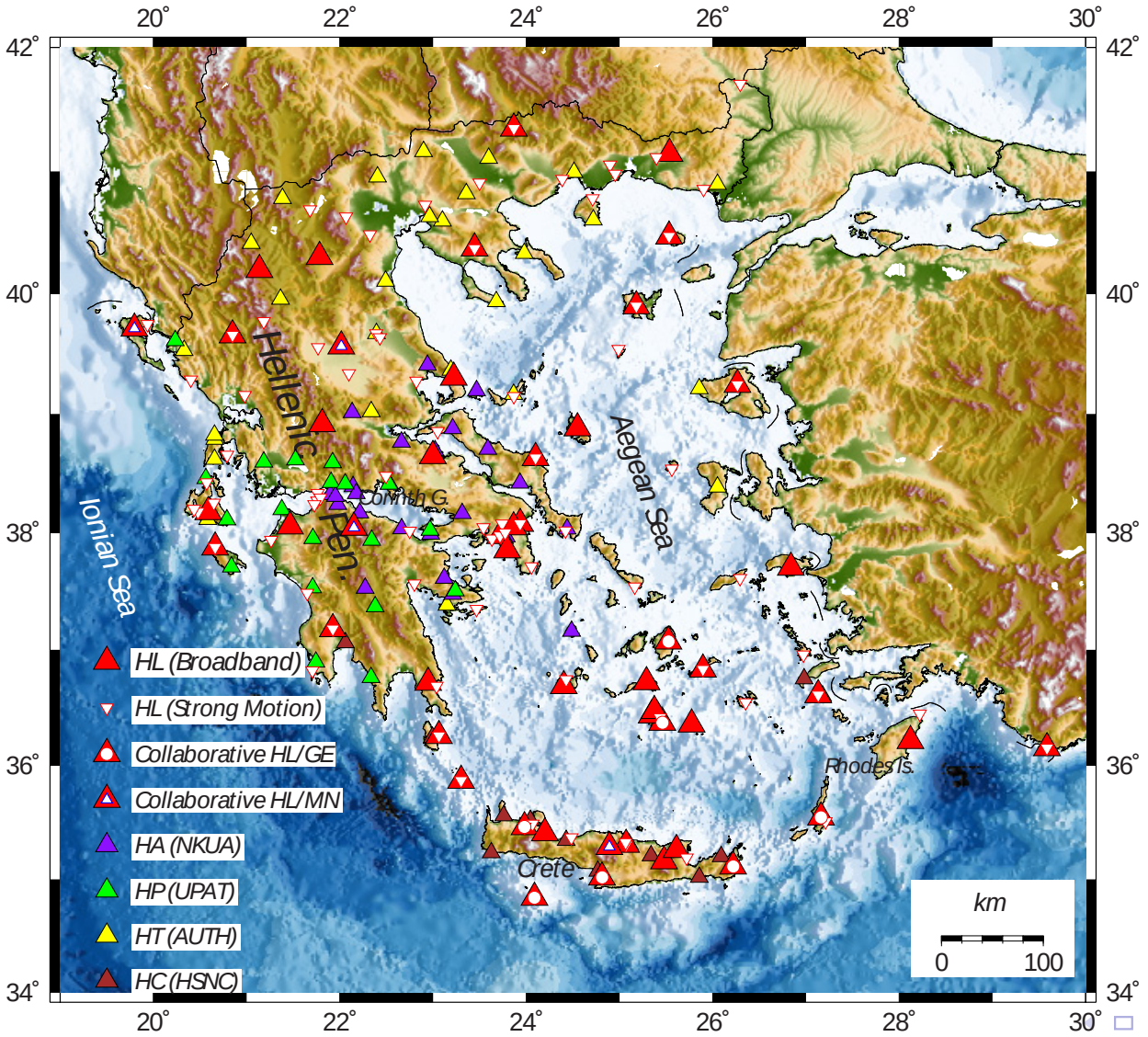
EIDA@NOA
National and Regional data node implementation

National Observatory of Athens (NOA)
C.P. Evangelidis

Iberian Coordination meeting, Madrid, 8 March, 2018

Hellenic Seismic Network (HL)

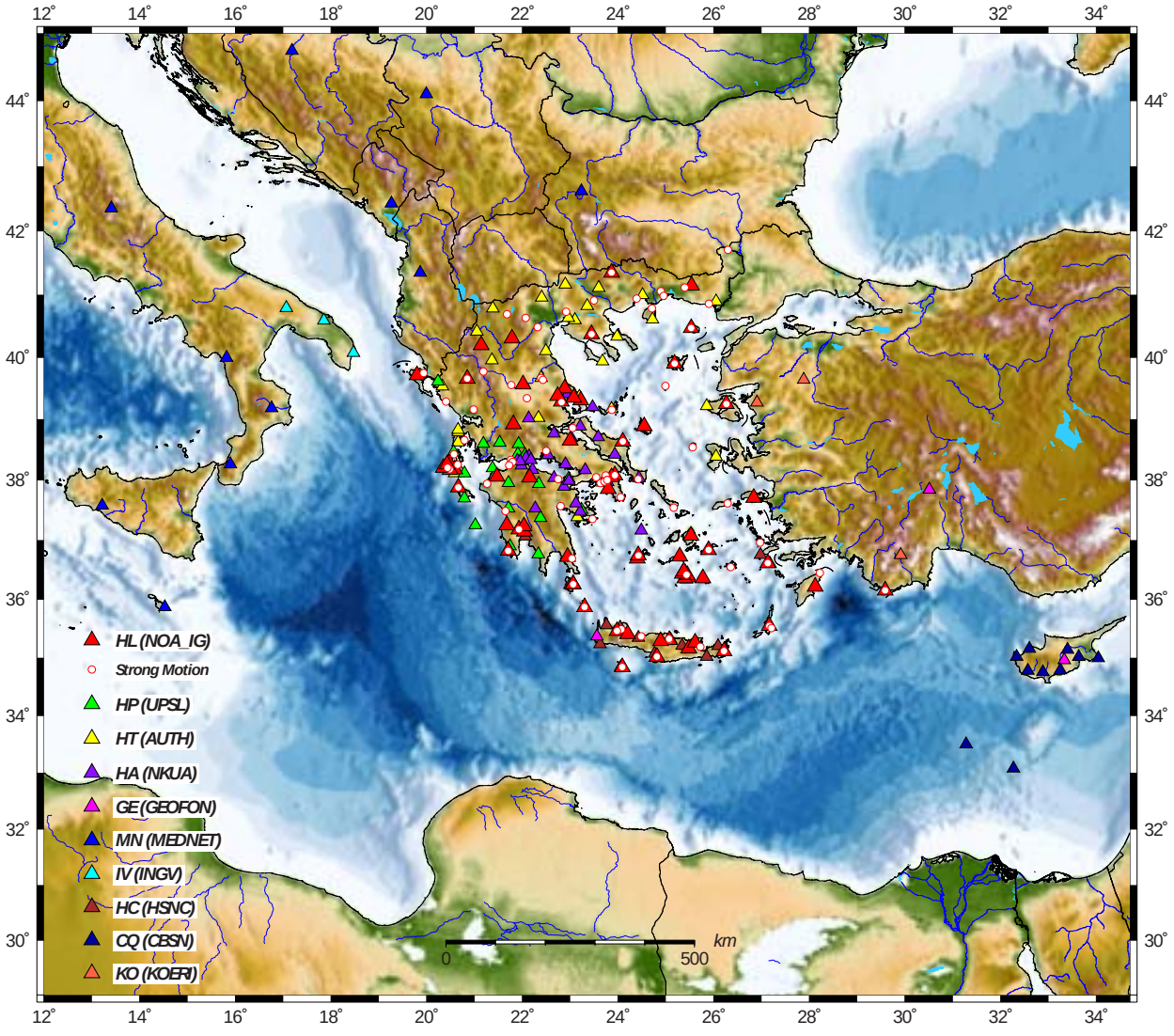
Hellenic Unified Seismic Network (HUSN)



HELPOS
2017-2020
HL BB : 51(22)
HL SM: 69
HP: 19(+3SP)
HT: 32 (+12SP)
HA: 15
HC: 14

Monitoring the Southeastern Mediterranean

Realtime acquisition at NOA



EIDA Regional and National nodes

1. KNMI/ODC: European-Mediterranean, Netherlands
2. GFZ: European,Global,temporary deployments
3. RESIF: France,Global temporary deployments
4. INGV: Italy,European-Mediterranean (MedNet)
5. ETH: Switzerland
6. BGR: Germany
7. NIEP: Romania
8. KOERI: Turkey
9. **NOA: Greece**

NOA EIDA node
History

- *05-06-2015* NOA Official Proposal after an **unofficial consensus** with some key networks
- *27-08-2015* **Letters of support** from UPSL(HP), NKUA(HA), TEICrete(HC), AUTH(EG).
- *25-02-2016* Unanimously Approved by the ORFEUS Board of Directors
- *29-02-2016* NOA becomes one of the official federated FDSN data centers
- 01-03-2016 MoU between ORFEUS and NOA signed
- *12-05-2016* Operational and Syncronized with all other EIDA nodes

NOA EIDA Networks

Stations served now

Current Networks:

- **HL** *(N.O.A., Hellenic Seismic Network)* -60 stations
  doi:10.7914/SN/HL
- **HP** *(University of Patras, Seismological Laboratory)* -9 stations
  doi:10.7914/SN/HP
- **HC** *(T.E.I. of Crete, Seismological Network of Crete)* -14 stations
  doi:10.7914/SN/HC
- **HA** *(National and Kapodistrian University of Athens, Seismological Laboratory)* -2 stations
  doi:10.7914/SN/HA
- **CQ** *(GSD of Cyprus, Cyprus Broadband Seismological Network)* -10 stations
  doi:10.7914/SN/CQ
- **EG** *(SDGEE AUTH, EUROSEISTEST Strong Motion Network)* -4 stations
- **ME** *(Montenegro Seismological Observatory, Montenegrian Seismic Network)*
  doi:10.7914/SN/ME

HH* and HN* channels from 2010 onwards. Data availability delayed by 15min to 24 hours.

NOA EIDA Services

EIDA@NOA node address

`eida.gein.noa.gr`

- FDSN (dataselect + station)
  `http://eida.gein.noa.gr/fdsnws/`
- ArcLink
  `eida.gein.noa.gr:18001`
- WebDC3 (+ NOA catalog service via CSV event file)
  `http://eida.gein.noa.gr/webdc3/`
- Routing
  `http://eida.gein.noa.gr/eidaws/routing/1/`
- WGCatalog
  `http://eida.gein.noa.gr/eidaws/wfcatalog/1`

eida.gein.noa.gr

Data Storage and Backup

- node is running on Virtual Machines (with backup of the VM images)
- Main data center (Athens-Thissio campus):
  - NOA Network Attached Storage (NAS) - main storage of data acquisition (SDS archive) in NOA
  - EIDA-NAS - copy of NOA-NAS *(at least all data concerning EIDA)*
  - EIDA-NOA VM Server “watches” the EIDA NAS
- Backup data center (Athens-Penteli campus):
  - EIDA NAS2 - copy of the entire NOA NAS
  - EIDA-NOA2 VM Server “watches” the EIDA-NAS2

⋆ *NAS have high availability storage with RAID 6, 70 TB, 2 Power supplies, 4 Gigabit LANs, etc*

⋆ Operated and maintained by NOA IT personnel

HELPOS

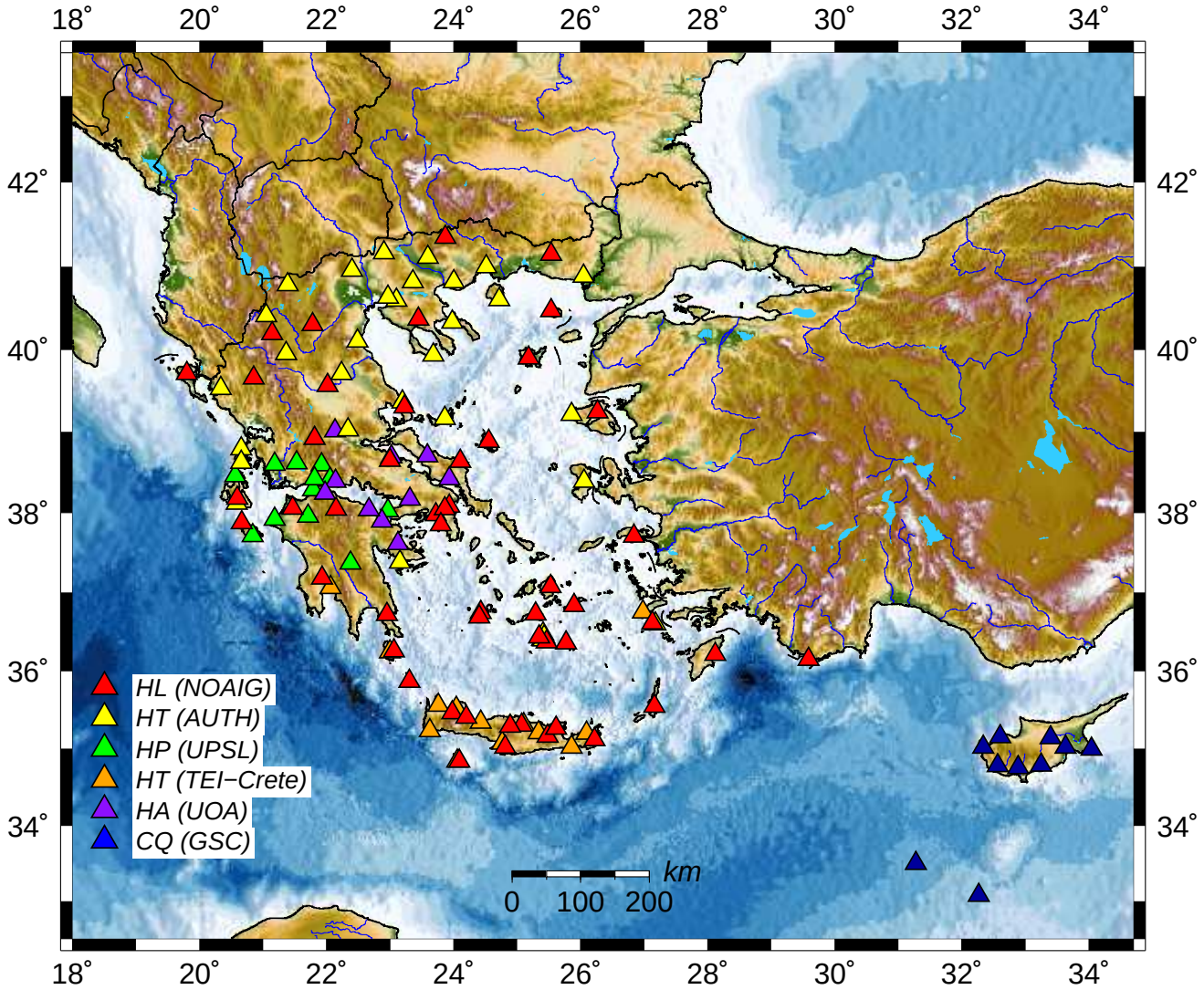
National consensus on a single National node on 2016

Based on:

- Realization for the LONG TERM COMMITMENT of the node operator
- Allocation of HELPOS NOA budget on HELPOS share towards the EIDA national node
- Critical data mass already loaded. Users experience so far good
- Realization that EPOS-ERIC will NOT assign much (if any) funds on EIDA nodes
- Strong EIDA EMB preference on single national nodes
- National EIDA node coordination from people with neutral point of view accepted by the others
- Ability to run and operate the node from THIRD physical location in Northern Greece
- Establishment of a National management-technical committee for coordination

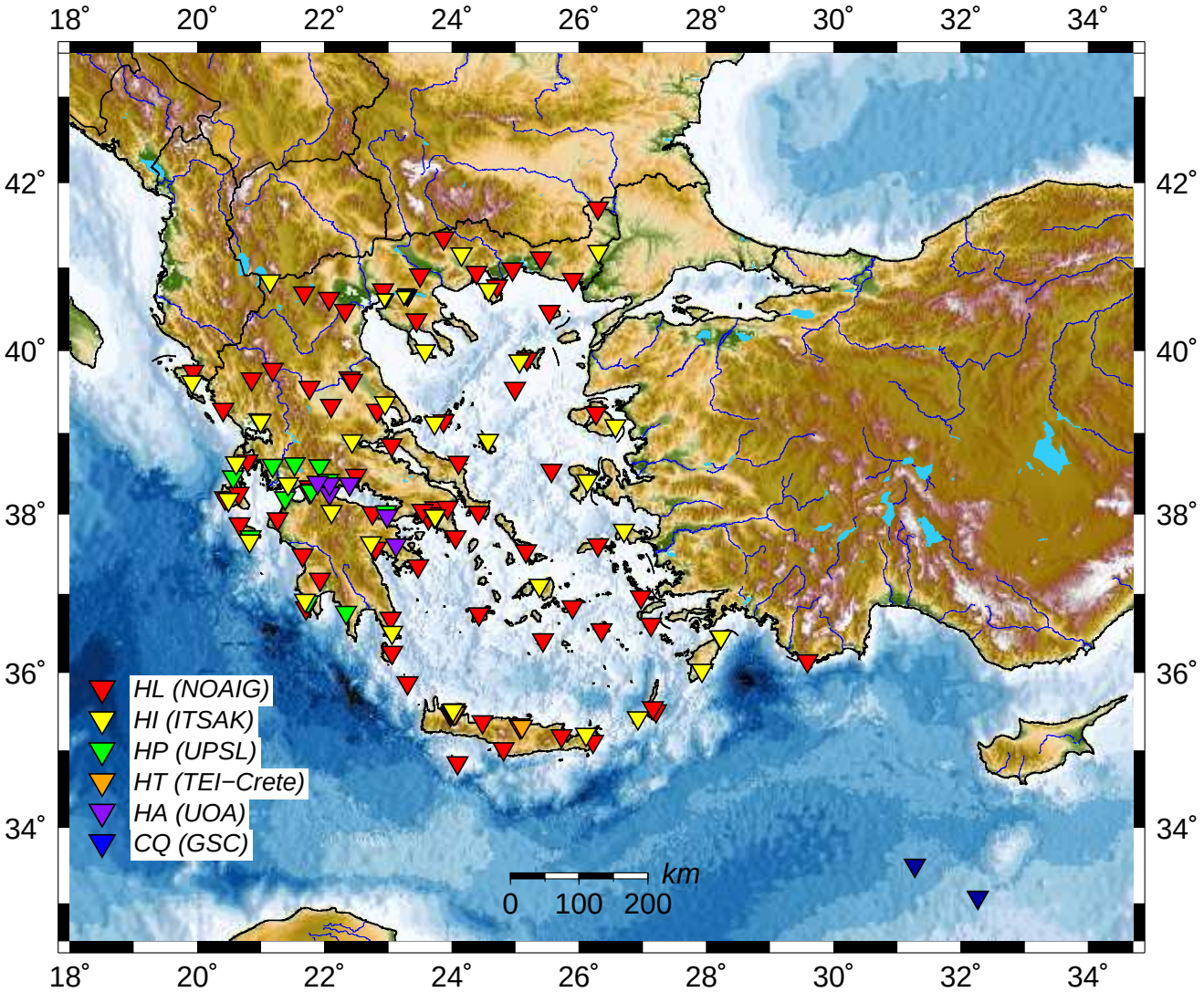
NOA EIDA node

HELPOS implementation (Broadband Stations)



NOA EIDA node

HELPOS implementation (Strong Motion Stations)



EIDA@NOA To-do List

Networks to be added soon:

- **HT** *(Aristotle University of Thessaloniki Seismological Network)*
- **HI** *(ITSAK Strong Motion Network)*
- **Temporary deployments** *(As many as possible national and international deployments in the area concerning aftershock studies or passive experiments)*

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Under implementation or testing:

- Third EIDA@NOA deployment in GRNET Cloud (Virtual storage + server) EOSC-hub EC-H2020 project
- Proxy server implementation for load balancing and fail-over handling (between the 2-3 physical locations)
- Introductory Webpage with Instructions
- HELPOS Ticket-Forum web based for better coordination
- fdsnws-event Service with NOA(or HUSN) catalogue

To conclude

At NOA:

- Support a considerable national infrastructure (BB and SM networks, Data and Operational Center)
- Unlimited (but registered) access to seismic waveform data from networks in Greece and the Southeastern Mediterranean
- Securely archive seismic waveform data AND their related metadata
- Provide the appropriate credit and citations to the network operators

To conclude

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Personal Piece of advice:

1. Cooperate
2. Identify/acknowledge each institute/network/operator mission
3. Appoint people in management as much neutral as possible
4. A single national/regional node is much stronger and viable in the long term

Thank you!