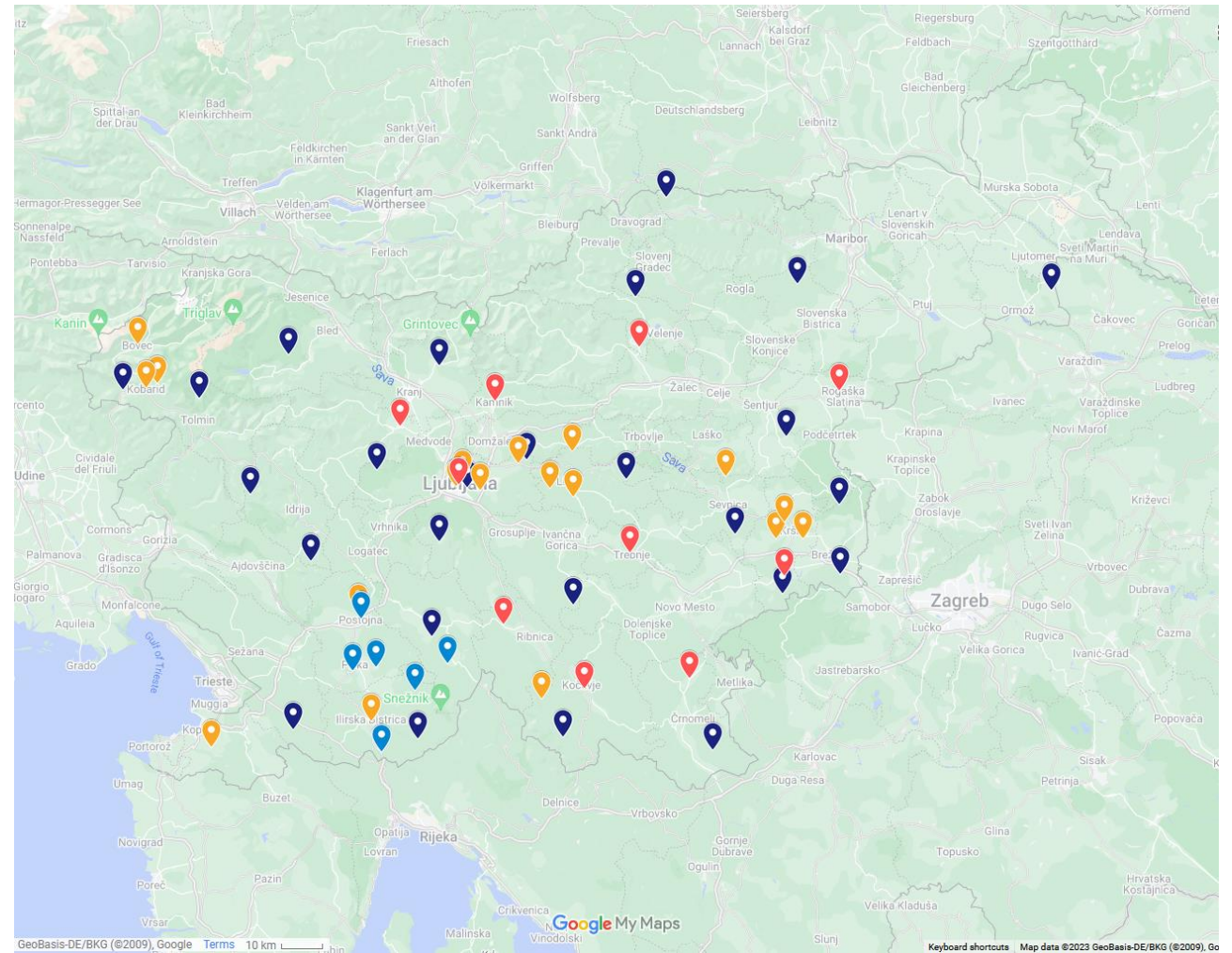# SLOVENIAN SEISMIC NETWORK

Activities report AUG 2024

Jurij Pahor, ARSO

Seismic stations

- Permanent network (26 6-channel BB)
- Supplementary network (18 misc)
- EPOS NFO network (6 Etna2)
- RaspberryShake shool netvork (10 RS)

Seismic stations

- Permanent network (26 6-channel BB)
- Supplementary network (18 misc)
- EPOS NFO network (6 Etna2)
- RaspberryShake shool netvork (10 RS)
- Import in real-time (>100)
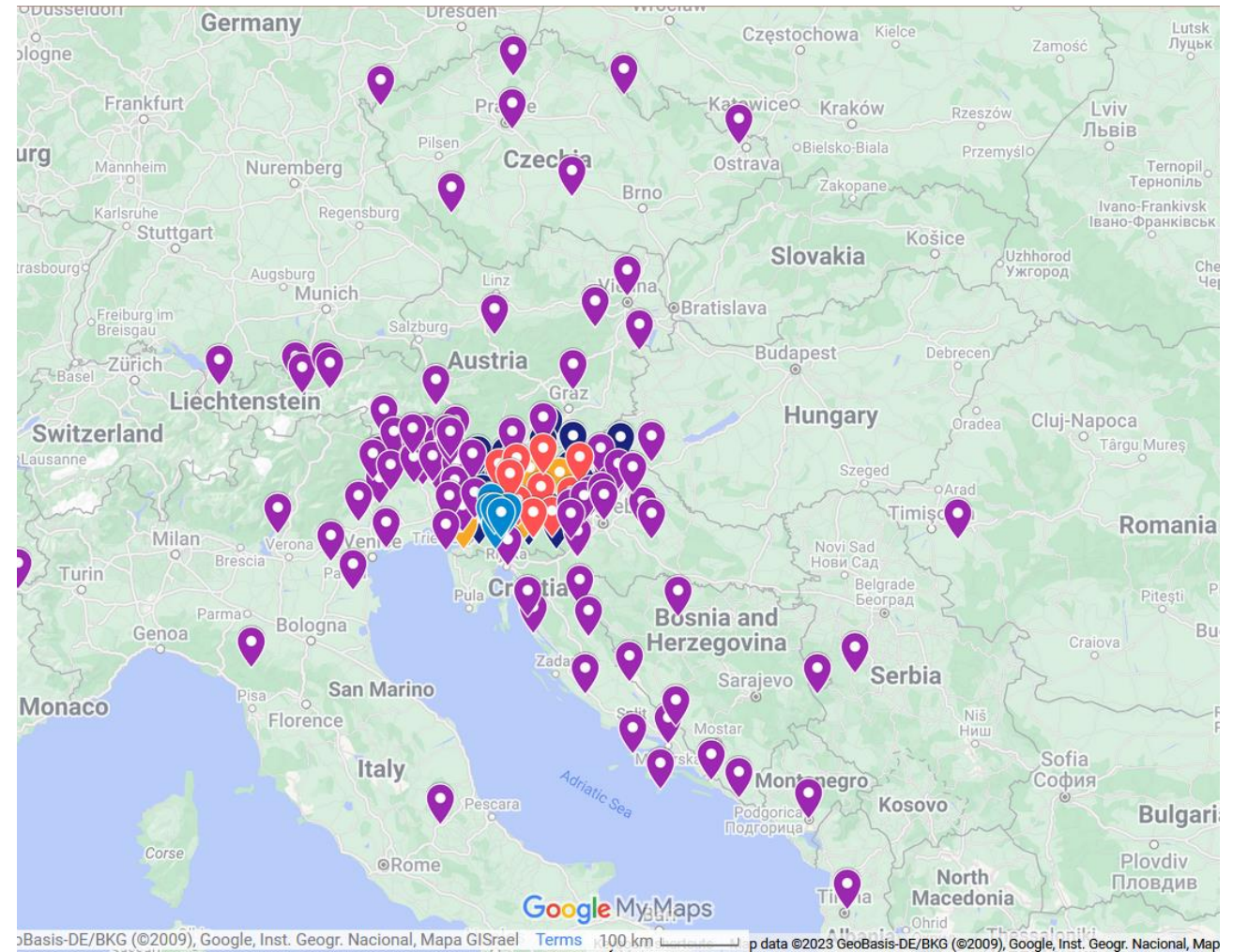
Seismicity in Slovenia

2000 – 2023 catalog

>2000 eq/year

>200 felt/year

2000–2023

A R S O, Urad za seizmologijo

Magnituda MLV · Globina
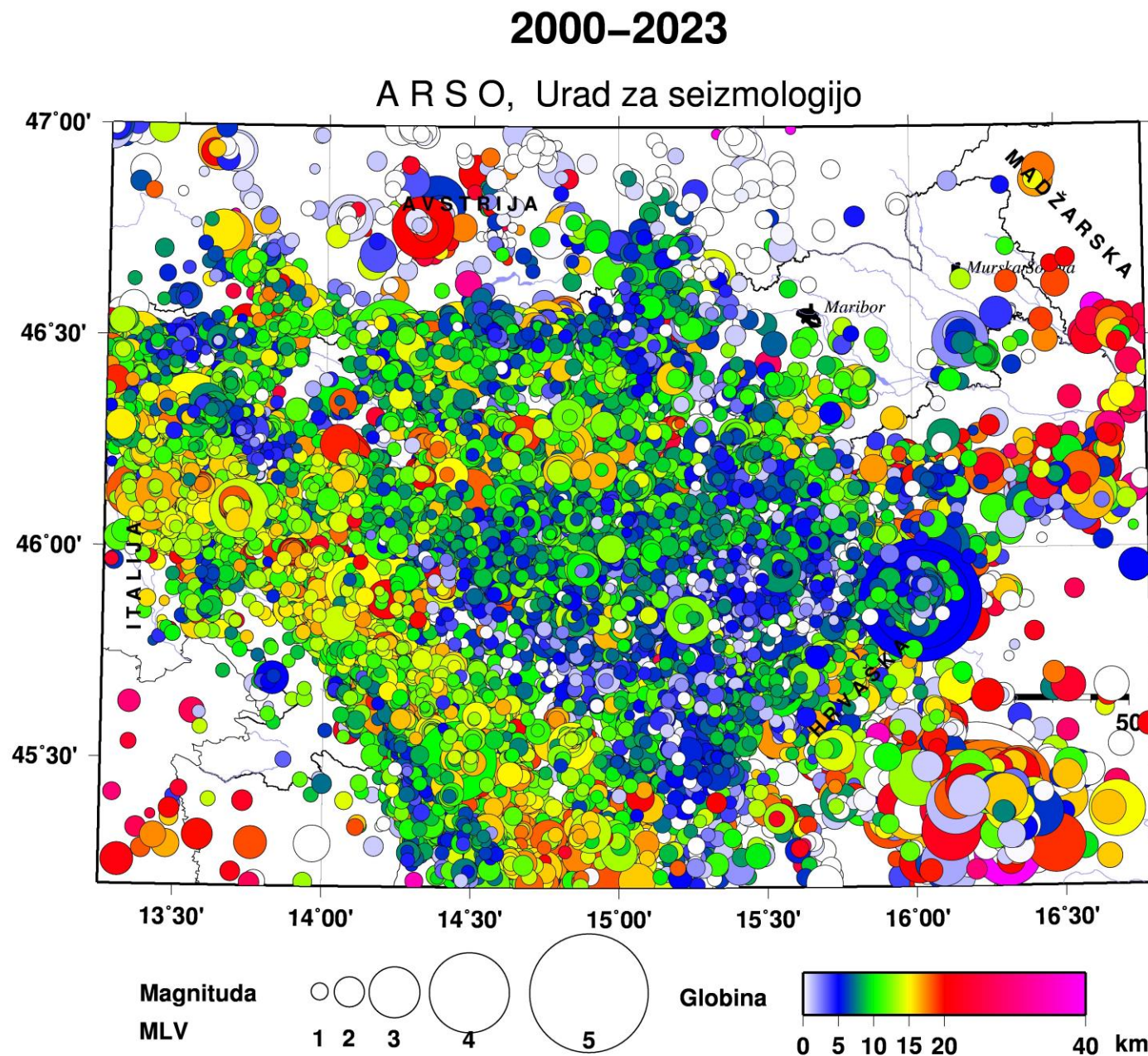
Seismicity in Slovenia

Larger events

- max Mw 6.7

- max Io IX

Potresi v Sloveniji (od leta 1511 do januarja 2021)

Potresi v Sloveniji (od leta 1511 do januarja 2021)
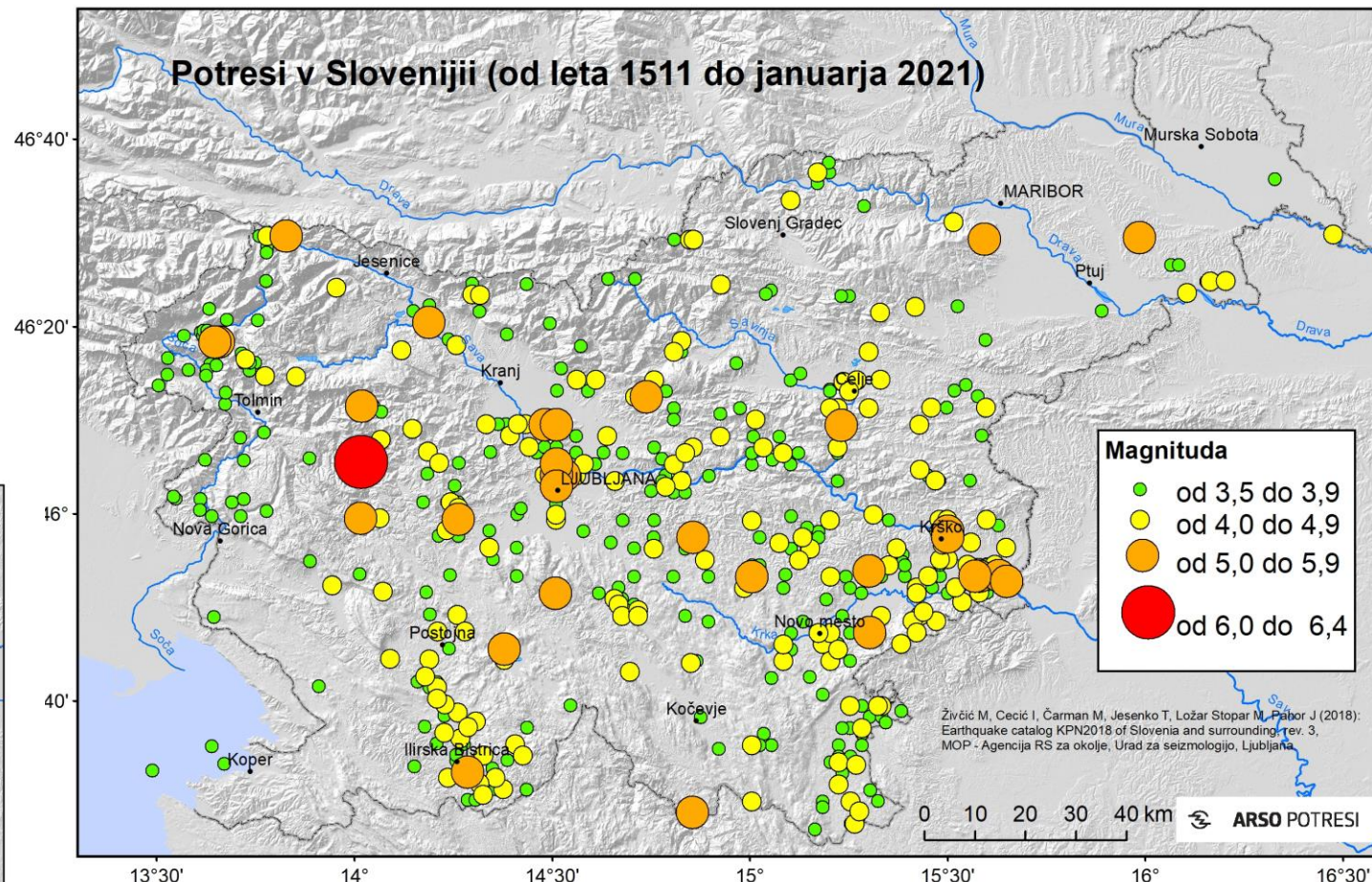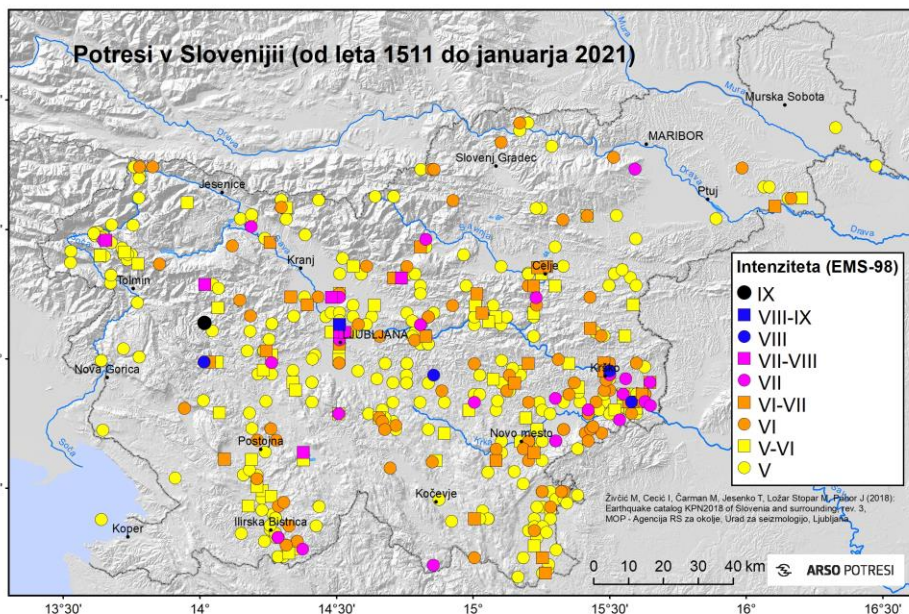
Retune RT system

Last tuned >15yrs ago

Include more distant stations → better regional solutions

Trying to get less origins ☺

Antelope rt solutions with ndef>=5
counted in Ml bins of 0.1
for the period 2018 – 2024 (~13500 events)

AHEAD

European Archive of Historical EArthquake Data

https://www.emidius.eu/AHEAD/

local MIDOP db @ ARSO

731 entries at this time

https://nhess.copernicus.org/articles/24/651/2024/nhess-24-651-2024.html
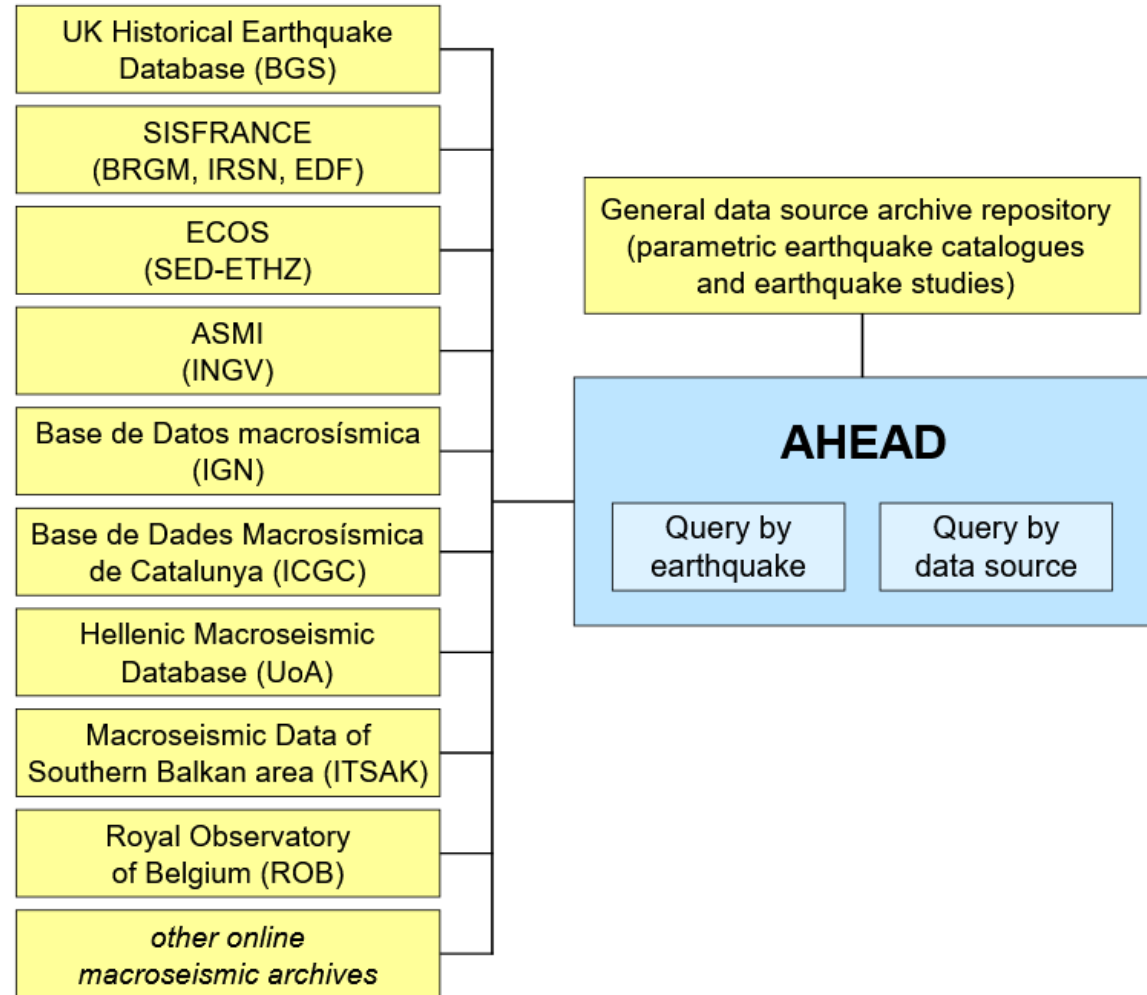
Natural Hazards and Earth System Sciences

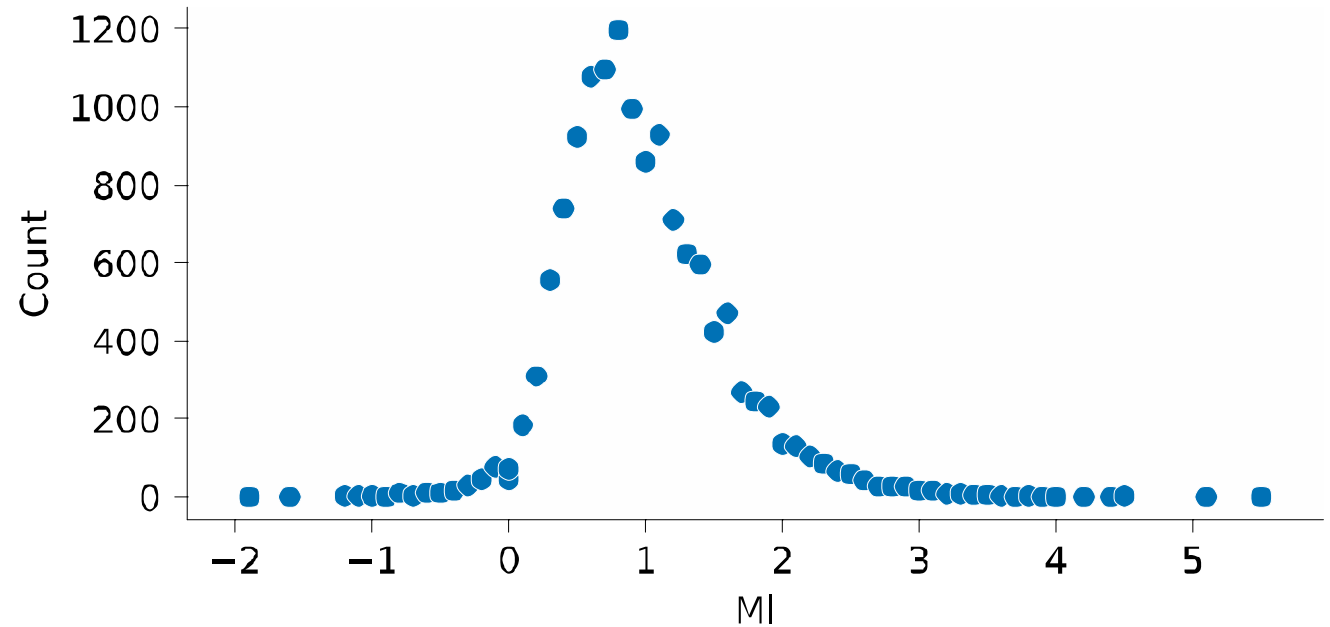**Seismogenic depth and seismic coupling estimation in the transition zone between Alps, Dinarides and Pannonian Basin for the new Slovenian seismic hazard model**

- assessment of the thickness of the lithosphere's section where earthquakes are generated

- assessment of the activity of each fault, expressed by its average displacement per year (slip rate)

Seismic coupling
- ≤ 40 %
- ≤ 50 %
- ≤ 60 %
- ≤ 70 %
- ≤ 80 %
- - - 100 %

0   50   100 km
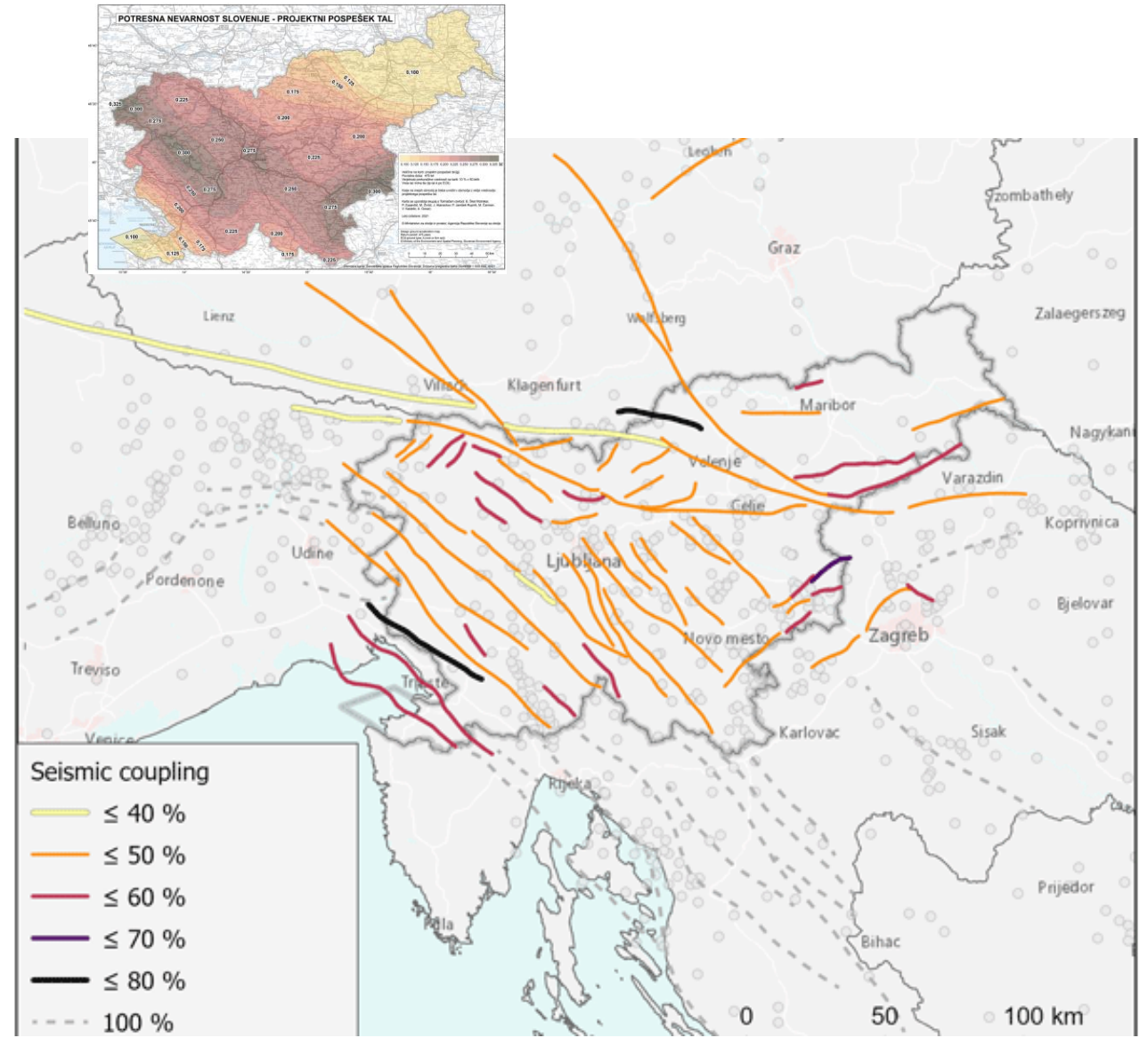
AGU Journal of Geophysical Research: Solid Earth

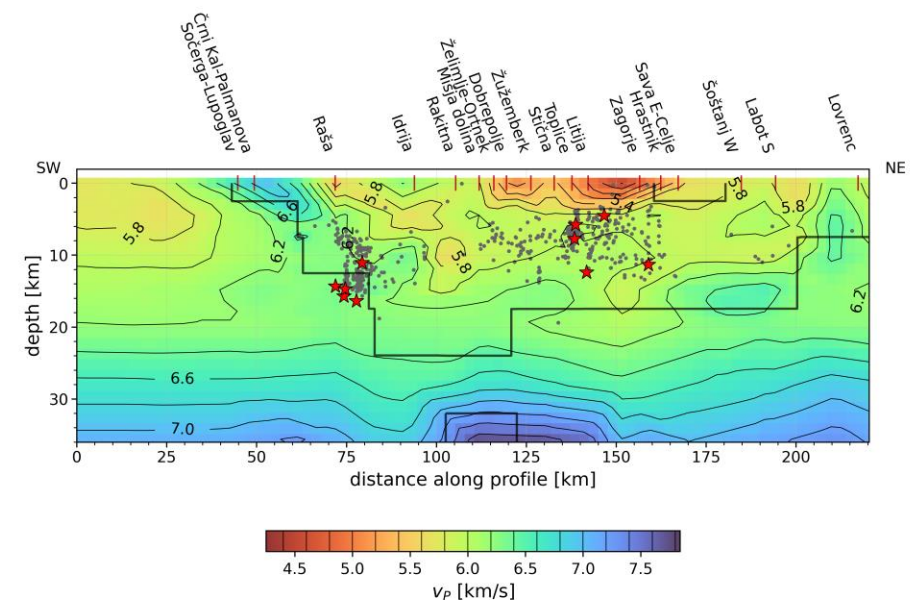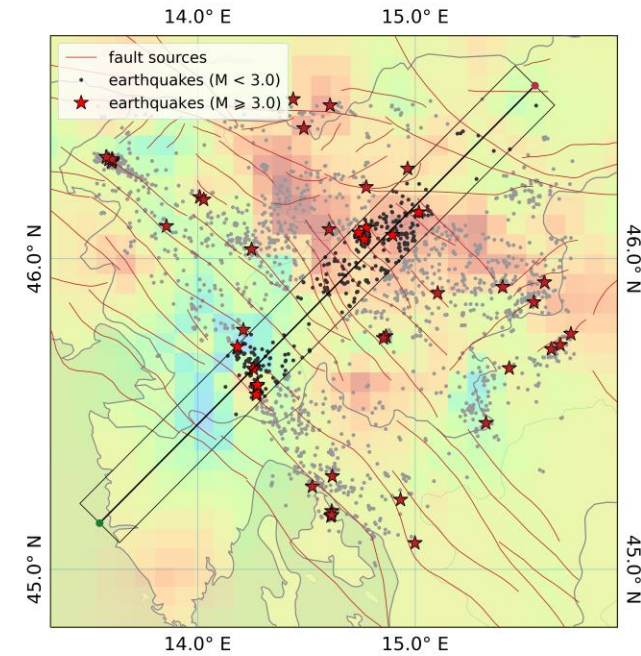**Investigations of the structure in the NW Dinarides using local earthquake tomography**

Gregor Rajh, Josip Stipčević et al

- 3-D simultaneous hypocenter–velocity inversions with routinely picked arrival times of P- and S-waves

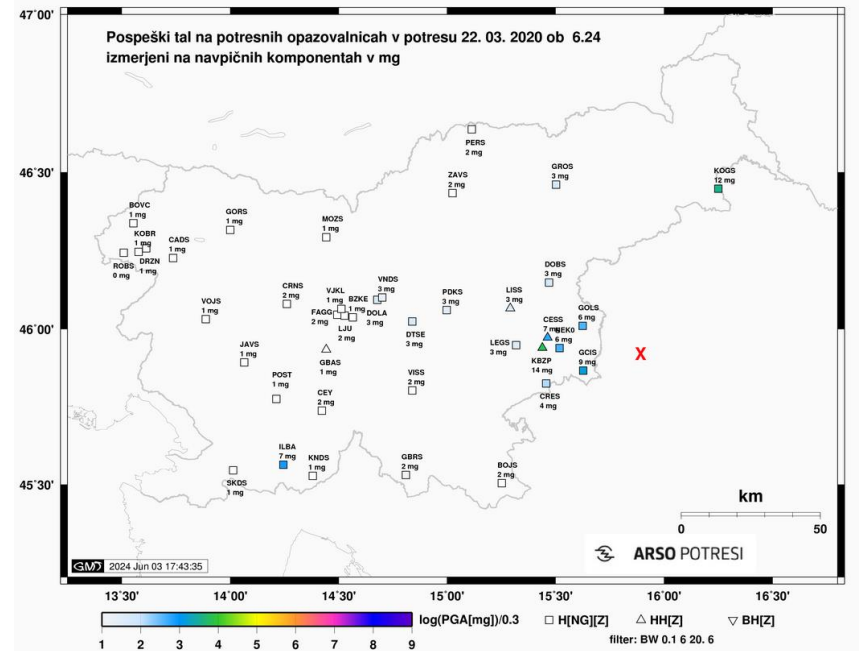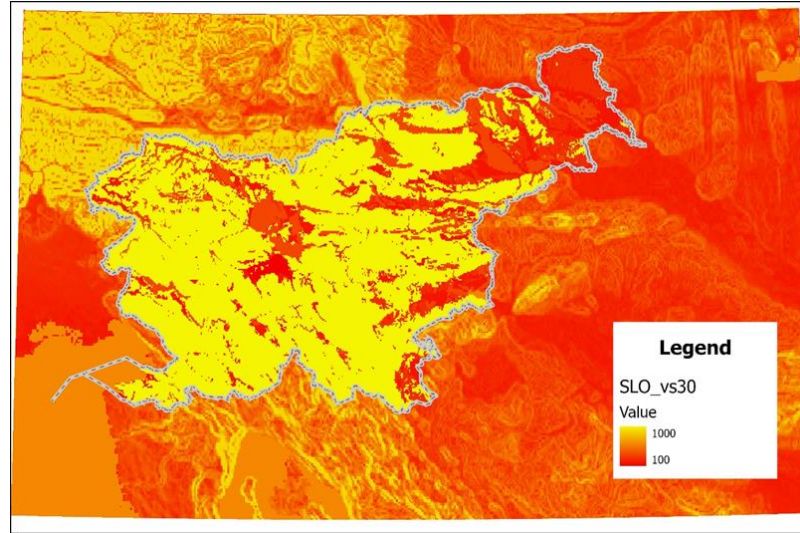- 3-D P-velocity and v_P/v_S model successfully recovered at least up to a depth of 15 km

ShakeMap v4

Installation, learning, testing, data flow

Preparation of parameters, relations, grids...
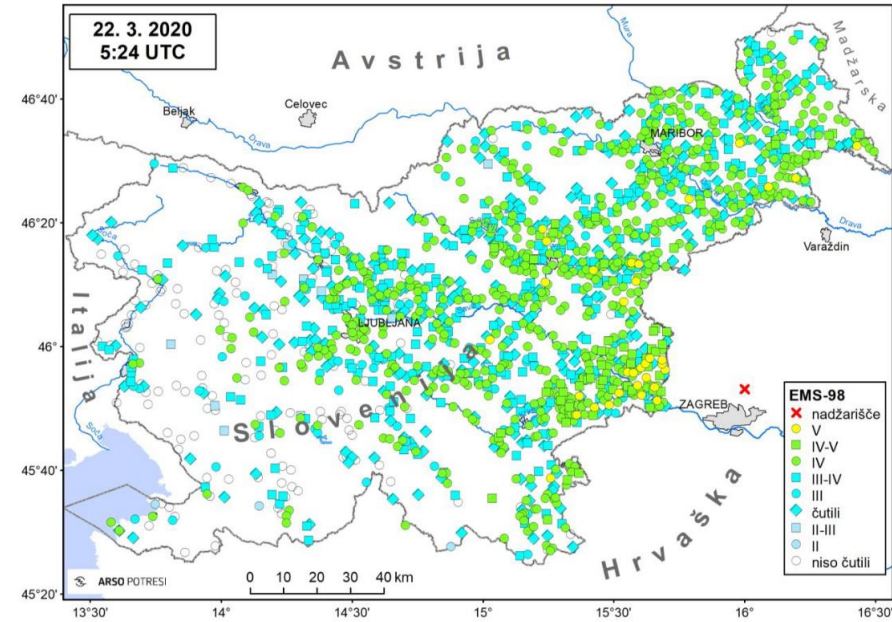
GOAT-CASE

GA-OGS-ARSO Transfrontier CE3RN AdriaArray Seismicity Experiment

3-year project

Relocation of past events within large virtual network

Relocation of past events using AI tools

Sharing experience in RT system management

Establish a joint RT system

AdriaArray Network 2023-07-01

- AdriaArray site
- selected site
- OGS,OE,SL site

Wishlist

orbxchange
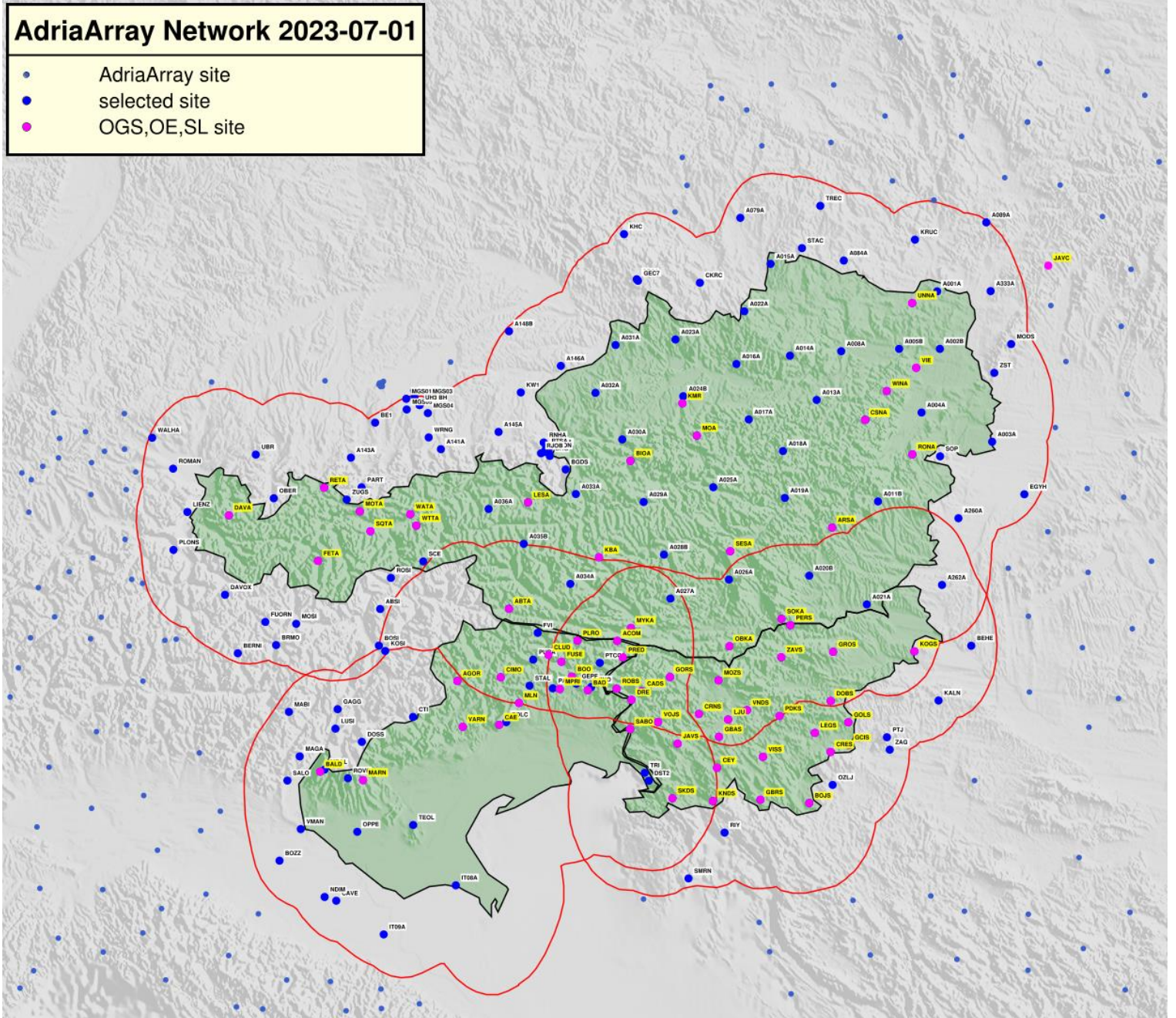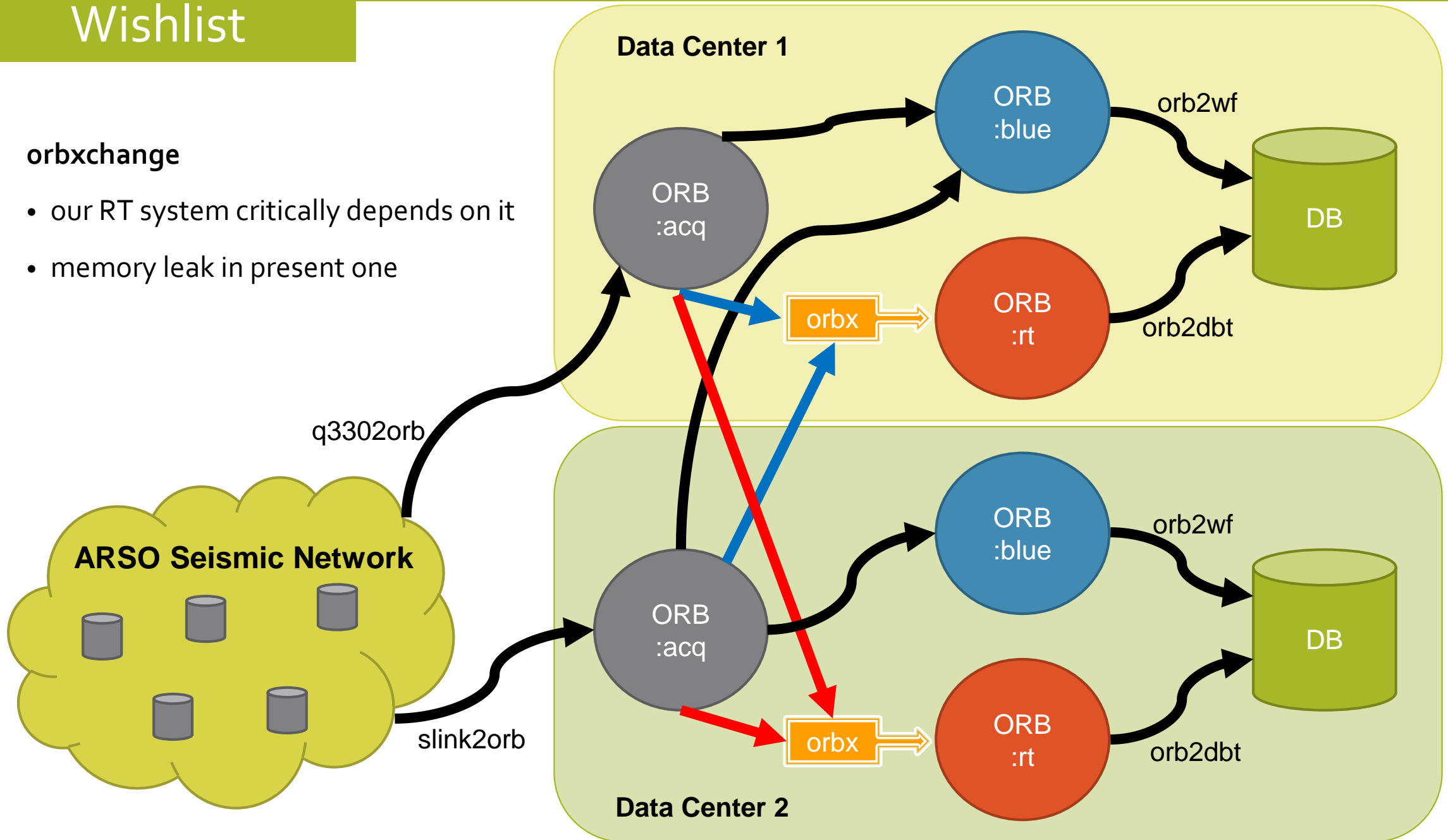
- our RT system critically depends on it

- memory leak in present one

Wishlist

db2stationxml   (metadata exchange with ORFEUS, FDSN, …)
→ has issues?!

stationxml2db

present procedure:
stationXML → stationxml-seed-converter-2.1.0.jar → seed2db → dbset … → dbmaster

Future development → support for stationXML use in Antelope SW ?

Wishlist

AI tools for RT system and postprocessing
- learning procedures

rtexec capability for automatically killing/restarting processes that use excessive resources

Native Antelope **seedlink tools** / mantain compatibility with contrib SW
- We exchange more data with seedlink than with orb2orb
- Present solution: IRIS ringserver - orb2ringserver - slink2orb

Seizmovitez Jurij Pahor, član Abrahamovega reda, jezdec antilope.