Technical documentation
stations names and network codes

This document was compiled by Petr Kolínský with the help of Christos Evangelidis, Antje Schlömer, Thomas Meier, Cristian Neagoe and Damiano Pesaresi, and it is based on a discussion which started in May 2022 at the WG2 – "Technical Advice" online meeting. The document has been complemented with some details throughout the years. It reflects both the recommendations given, as well as the reality how the station naming was actually handled. In the following, rules for the naming of AdriaArray stations, their location and network codes are explained.

AdriaArray station names in general
The station names are shown in the map 01AdriaTotal.* (see https://github.com/PetrColinSky/AdriaArray). Names of existing permanent stations are not changed if this station becomes an AdriaArray station. In case of the deployment of a mobile station at the location of a permanent station, the name of the permanent station is shown. If a mobile station is operated at the location of a former site of a temporary network like AlpArray or PACASE, the station name from the previous experiment is shown. This means, in case of a PACASE spot, the given PACASE temporary name is used. If it is a former AlpArray spot, the given temporary AlpArray name is used. This holds also, if the location remained unequipped in a previous experiment and if the station name was known (e.g. CASE stations). We gathered information about and show also the "unequipped spots" (a place, where there was a station before but it is currently unoccupied) because these could be used for deployment of AdriaArray stations. In Romania, the "unequipped spots" are named as ZROxy, where xy is a number. When the mobile station is suggested at a new place, which needs to be scouted for, the name is created using two characters showing the country of deployment plus two digits with a numbering in the respective country. In reality, sometimes, a new name was given to a temporary station placed at a spot of a former permanent or temporary station. In these cases, both names are shown in the map to indicate, that these two stations are in fact located at the same site.

Rules for AdriaArray station names
Case 1: **temporary deployments in new sites**
Stations names of new temporary stations should read country + number + version (A/B/..). "A" stands for the first location of the station. If the station is moved later, "A" changes to "B", see below. Example: BHxyA is a first location of "xy"-th station in Bosnia and Herzegovina. These stations names will have 5 characters. In Greece, the "A" was omitted and names only have 4 characters. In case of moving the stations in Greece, the "B" will be added (GR19 changed to GR19B). Codes for countries follows a mixture of IBAN codes, country Internet domains, international license plate abbreviations, all shrunk to 2 characters. Below is the list of the codes. "(covered)" means that the country is already covered with either permanent stations or stations from previous experiments and hence the code is not needed. In some cases, the country code had already been used for the PACASE experiment and hence was inherited for AdriaArray.

country	country code
Albania	AL
Austria	(covered with AlpArray stations, names remains)
BiH	BH
Bulgaria	BG
Croatia	HR
Czech Rep.	(covered with AlpArray stations, names remains)
France	FR
Germany	(covered with AlpArray stations, names remains)
Greece	GR
Hungary	HU (code used for PACASE, new stations for AdA, some inherited the AlpArray names)
Italy	IT
Kosovo	KS (in fact, all temporary stations are at permanent sites, so code not used)
N. Macedonia	MK
Malta	(covered)
Moldova	MD
Montenegro	ME

Poland	PL (covered, code used already for PACASE)
Romania	RO
Serbia	RS
Slovakia	SK (covered, code used for PACASE, older stations inherited the AlpArray names)
Slovenia	(covered)
Switzerland	(covered)
Ukraine	UA (temporary stations planned in existing permanent sites, so code not used)

Case 2:   temporary upgrades of existing stations

Station names of the "upgraded" SP/SM permanent stations should keep the permanent station name. This recommendation is sometimes followed (Albania, Bulgaria, Romania, ...), and sometimes not (Bosnia and Herzegovina).

Case 3:   station names of the currently non-equipped sites

- former AlpArray sites: keep the AlpArray names; sometimes followed (OGS deployment), sometimes – for a good reason – not (North Italy, France). UniTwente stations deployed by INGV in Italy are "almost" occupying the former AlpArray sites and are named ITxyA; the places are in fact different, sometimes however very close and hence for many methods these could be used as the same station; this is the reason, why the 01AdriaTotal.* map keeps both names
- former PACASE: keep the name of PACASE; this is followed as the PACASE stations continued to AdriaArray without re-deployment and hence keeping their names was obvious
- some PACASE stations inherited their names from AlpArray, and hence these are further inherited to AdriaArray
- if the name of the spot was not known from older experiments (pre-AlpArray), a new name should follow the country+number+version as above

Case 4:   other stations

There are also stations deployed before this agreement in the framework of another experiments, like those by the Croatian Seismological Survey in Croatia, having hence different names and being later incorporated into AdriaArray. These stations will keep the names already given.

Rules for the location code (default): 00

Minor site changes (<10m) => 01, 02, etc.
Major site changes (>10m) => last character of station name (default A) changed to B, C, etc.
After minor and major site changes, the metadata have to be updated.

Rules for network codes

Case 1:   new temporary stations

New temporary stations will get new temporary FDSN network codes registered for AdriaArray. Older temporary stations inherited from PACASE and AlpArray will change their network codes from Z3 and ZJ to the new AdriaArray network codes. We follow the rule that one network code goes to one EIDA node. More network codes can also go to one node (e.g. INGV), but no network code should go to more than one node. Each network has all its stations either open, or embargoed. Hence, each network code already uniquely shows, in which EIDA node the data from all the stations of this network are stored, and if all these stations are open or embargoed.

Case 2:   temporary upgrades of existing permanent stations, which are already in EIDA

option 1 (highly recommended):
The same FDSN code as the permanent station, difference only by channel.
Data management rules:
1.   Stations from this network must be distributed from the same EIDA node as before (e.g. AC in Albania from EIDA@INGV
2.   All channels from this station are fully open without restrictions

option 2
A new FDSN code as for other temporary stations in the given region/EIDA node.

Case 3:   temporary upgrades of existing stations, which are not in EIDA yet

option 1
The same code as other permanent stations from the same FDSN network

Data management rules:
1.   Stations from this network must be distributed from the same EIDA node as possibly other stations already distributed from the same network. E.g., if there is a permanent station operated by the operator of the BS network in Bulgaria, this "new" permanent station, which has not been in EIDA before, will get the BS network code and will be distributed by EIDA@NIEP as the BS network is already distributed by EIDA@NIEP).

option 2
A new FDSN code as for other temporary stations in the given region/EIDA node.

The choices following the rules above should be made among mobile pool operators, local network operators and EIDA nodes. Network codes for the newly installed stations were set up independently for each EIDA node. The following table gives the temporary network codes, hosting EIDA nodes, the involved mobile pools, the applied access rule (rolling embargo/open immediately) and countries of deployment:

	EIDA node	network code	mobile pool	open / embargo	country of deployment
	NOA	1Y	Uni Bochum	Embargo	Greece
					North Macedonia
			Uni Bochum / Uni Frankfurt	Embargo	North Macedonia
	INGV	2Y	OGS	Embargo	Italy
	INGV	4P	INGV Bologna	Open	Italy
			Uni Twente	Open	Italy
			Barcelona	Open	Italy
			GIPP GFZ / Uni Kiel	Open	Sardinia
	ODC	7B	UniWien	Open	Austria
					Slovakia
			Croatian Seism. Survey	open	Croatia
	UIB-NORSAR	9H	Uni Zagreb+Norwegian Pool	embargo	Croatia
					BiH
	ETHZ	Y5	ETH Zurich	open	BiH
	NIEP	Y8	MOBNET IG CAS CZ	embargo	Romania
					Bulgaria
			Uni Aarhus	embargo	Romania
					Bulgaria
			Uni Oulu	embargo	Romania
			Uni Oulu / Uni Wien	embargo	Romania
			Uni Helsinki	embargo	Romania
			Uni Helsinki / IRSM CAS CZ	embargo	Romania
			NIEP	embargo	Moldova
			Polish AdA Group	embargo	Poland
			GIPP GFZ / IRSM CAS CZ	embargo	Romania
	LMU	Z6	MOBNET IG CAS CZ	embargo	Slovakia
					Czech Republic
			Uni Kiel	embargo	Germany
					Austria
					Hungary
			EPSS Hungary	embargo	Hungary
			LMU	embargo	Albania
					Montenegro
					Kosovo
			Montenegro pool	embargo	Montenegro
			Kosovo pool	embargo	Kosovo
			Serbian pool	embargo	Serbia
			Uni Jena	embargo	Hungary
					Slovakia
			GIPP GFZ	embargo	Poland
					Slovakia
	RESIF	XP	Resif-Sismob	open	France
permanent	INGV	AC	KIT Karlsruhe	open	Albania

Temporary stations in the following map are colored by the temporary network codes:

AdriaArray – temporary networks

05 April 2024
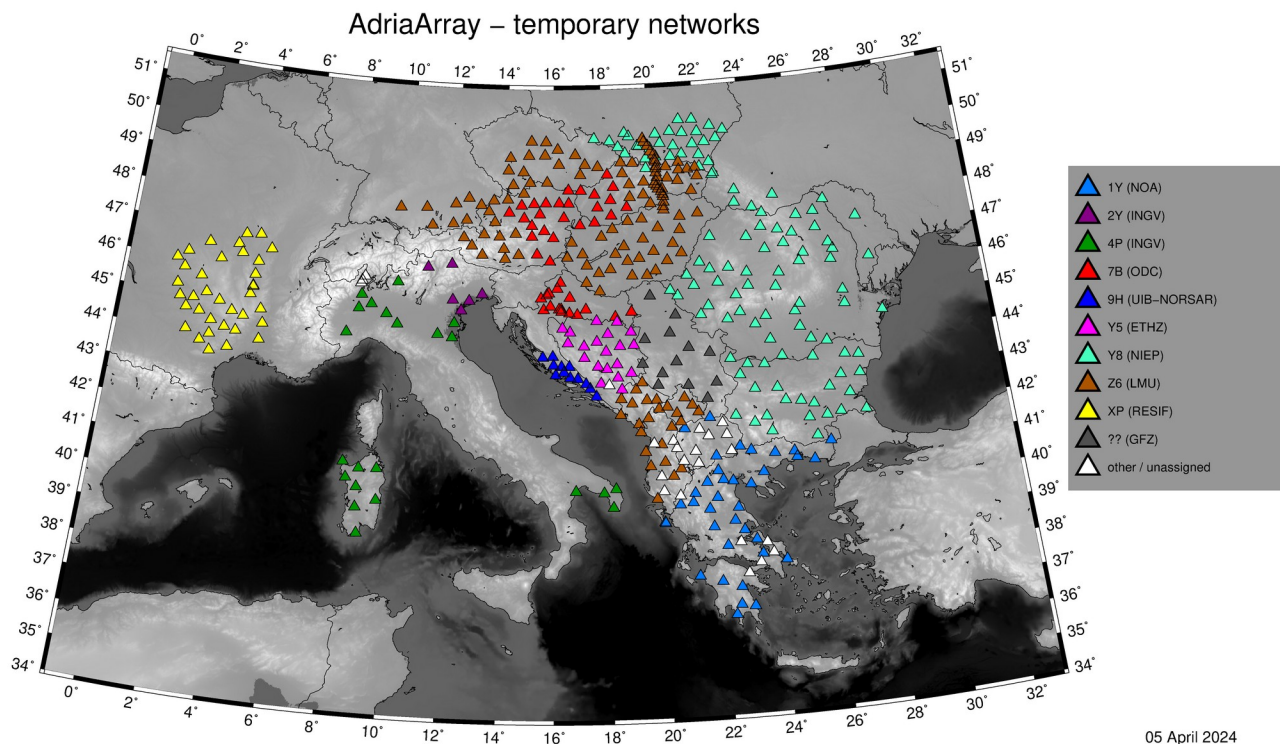
Updated version of this map can be found at
https://github.com/PetrColinSky/AdriaArray/blob/master/AdA/MAPS/16AdAnetwork.pdf
The current network codes, network names and all other network attributes can be found at
https://www.fdsn.org/networks/?search=adriaarray

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sampling rate
100 sps continuous stream with 3 components for all BB stations of the AdriaArray backbone.
200 sps for local experiments, if needed and if agreed by the mobile pool operator, local network operator and hosting EIDA node.

DOI
DOIs will be assigned to all temporary networks. DOIs should show the mobile pools included, the local network operators and the EIDA node involved. DOIs will be based on homogenized network names, description, deployment region and full list of both permanent and temporary network operators.

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virtual network
The AdriaArray backbone only includes permanent and temporary stations with sensors with a corner period of 30 s and longer. In addition to the backbone, there is a virtual network _ADARRAY. All broadband stations in the region, both permanent and temporary, with HH* and BH* channels are included in _ADARRAY. According to the SEED convention, H** and B** channels are assigned for sensors with corner period of ≥ 10 s. _ADARRAY virtual network hence includes more stations than the AdriaArray backbone network. The backbone is a subset of _ADARRAY.

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