Memorandum of Collaboration for the AlpArray Scientific Program

Version of 18.05.2015

AlpArray is a large collaborative project with the aim of carrying out cutting edge research using seismological as well as associated Earth sciences data and geodynamic synthesis and modelling in order to better understand the geodynamics of the greater Alpine area and its seismic hazard. The main actions to realise this goal are:

1) collecting top-quality seismological data from a dense network of temporary seismic stations that complements the permanent stations to ensure homogeneous coverage of the greater Alpine area ("**AlpArray Seismic Network**");
2) deploying specifically designed temporary geophysical arrays ("**AlpArray Complementary Experiments**") along profiles, swaths or networks that are devoted to the resolution of specific structures and targeted questions;
3) acquiring associated Earth sciences data (such as gravity, electro-magnetics, geology, GPS, etc.);
4) analyzing and interpreting the collected dataset in multidisciplinary ways and developing new quantitative geodynamic models of the Alpine area in order to further our understanding of mountain building processes.

Research on the acquired data will be organised in specifically targeted "**AlpArray Collaborative Projects**" or as coordinated studies by smaller groups of researchers or individual researchers. All participating institutions will be expected to contribute within their abilities to establishing and maintaining the long-term AlpArray Seismic Network. They may also contribute to research in AlpArray Complementary Experiments and/or AlpArray Collaborative Projects.

Organization (see Figure below)

The **AlpArray Working Group** (**AAWG**) comprises the registered member researchers of all participating institutions. Scientific leadership of the AAWG is provided by the **Science Council**, consisting of one representative per participating institutions. The Science Council elects the **Steering Committee** with the **Project Coordinator (PC)** as its head, who is also a member of the Science Council.

The Steering Committee is responsible for the coordination of all research activities of the AAWG, in particular of the PhD and post-doc research projects, and of the Science Plan. Decisions regarding the AlpArray Seismic Network, AlpArray Complementary Experiments and AlpArray Collaborative Projects are prepared by the Steering Committee and decided upon by the Science Council by a 2/3 majority vote of all members (no response = approval), either at meetings or by electronic vote. New institutions wanting to join the AlpArray Working Group after the official start date (see below) must apply to the Steering Committee, which will evaluate the request and prepare the proposal for decision by the Science Council.

The Science Council meets in person or electronically at least once a year. The Science Council holds an election or an approval vote on the composition of the Steering Committee once a year.

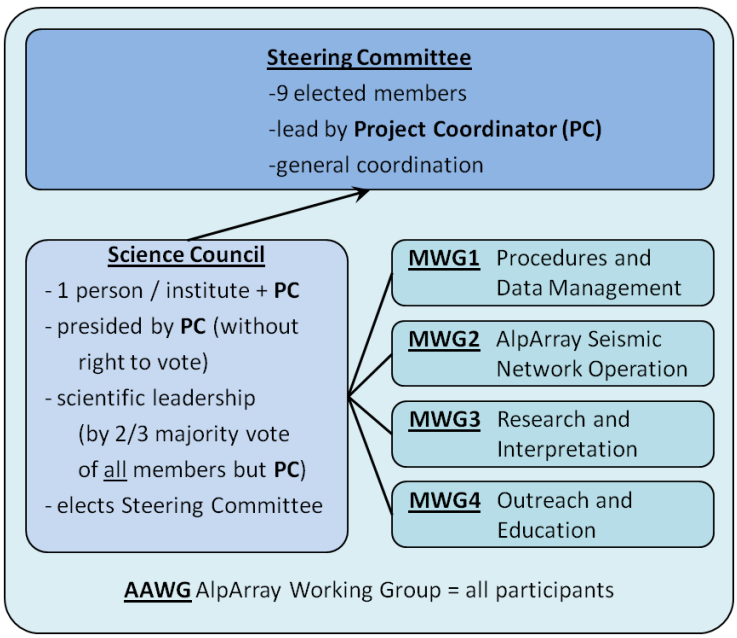
To support the Steering Committee and the PC, four managing working groups (**MWG**) are formed:

- **MWG1: Procedures and Data Management**: Definition and realization of best practices for operation procedures, data handling, storage and sharing;
- **MWG2: AlpArray Seismic Network Operation**: Detailed planning and supervision of field deployment and data acquisition;
- **MWG3: Research and Interpretation**: Scientific analysis, interpretation, modelling and synthesis, cooperation in AlpArray Collaborative Projects;
- **MWG4: Outreach and Education**: Communication, dissemination, website, meetings and education activities.

The Project Coordinator must be able to commit up to 20% of her/his time to closely follow and overview the collaborative experiments and projects. AlpArray will include several Collaborative Projects and Complementary Experiments (see above). AAWG member researchers are encouraged to form special research groups within the AAWG dedicated to cooperating in Collaborative Projects and/or Complementary Experiments and to submitting ideas for such projects and experiments to the Steering Committee. The Steering Committee will co-ordinate the submitted projects and experiments transparently by sharing them with all participants (by e-mail or secured webpage) and by providing regular updates of these activities as they become available. Research groups in the AlpArray Complementary Experiment and AlpArray Collaborative Projects organize themselves and appoint a leader (who is also a member of the Science Council) to act as a representative in AAWG and to report to the Steering Committee. AlpArray Collaborative Projects and Complementary Experiments that acquire data beyond the AlpArray Seismic Network are encouraged to define a data dissemination policy analogous to that of the AlpArray Seismic Network.

The PC and MWG2 are responsible for timely coordination of operations regarding the AlpArray Seismic Network. Data quality control, archiving and distribution of AlpArray Seismic Network data will be performed as outlined in the document entitled "Technical strategy for the mobile seismological components of AlpArray".

Participation in AlpArray requires (1) acceptance of the final version of this Memorandum by the AlpArray partner institutions by their signature (of a scientist in charge, representing all researchers of the institution working in AlpArray), and (2) naming the representative of the institution to the Science Council (see below for the initiation phase schedule).



Data management

All seismic waveform data (AlpArray Seismic Network and AlpArray Complementary Experiments) will be archived and disseminated through EIDA (European Integrated Data Archive) to the respective experiment's working groups and – at latest 1 year after the official end of the observation period of the respective network – to the AAWG. Three years after the official dismantling of the AlpArray Seismic Network or of an AlpArray Complementary Experiment the respective waveform data will be made publicly available. Access to freely available waveform data from permanent stations remains unchanged. Analogue availability rules apply to all other geophysical and geodetic data collected and compiled within the frame of AlpArray. The collected data shall not be used for commercial use. During the above-specified times of restricted access, no data shall be transferred or made available to any third party without the written authorization of the Steering Committee.

Research

Research in AlpArray is encouraged to be collaborative among participants and institutions. Each group of scientists from one or more participating institutions defines its preferred research themes and must bring this proposal to the attention of the Steering Committee in the form of a maximum two-page summary. The responsible representative of each partner institution provides (in a written form) this list of intended research, in particular PhD theses and post-docs, together with a list of colleagues working on the proposed topic. The proposed research topics are discussed and decided upon by the Steering Committee how to best integrate and collaboratively execute the research. The list of research projects can be updated during the AlpArray Scientific Program in accordance with the modality specified above. No researcher is allowed to undertake research on AlpArray data without first informing her/his institutional representative, who must in turn obtain approval from the Steering Committee.

Update and discussion of the research list by the Steering Committee is mandatory when new institutions shall become members of the AAWG. In case of persistent disagreement within the Steering Committee on such occasions, the Science Council will decide for or against acceptance of the proposed research in conjunction with the decision about new membership for the proposing institution by a 2/3 majority vote.

Geophysical (in particular, seismic) and geodetic data acquired by AlpArray Seismic Network and AlpArray Complementary Experiments belongs to the respective experiment's working groups and correct reference to contributors is to be provided in all publications. In accordance with the above-mentioned general rules (specific additional rules are possible for individual experiments while respecting the rules agreed upon in this Memorandum) the data is open to the above mentioned and approved research plan and to the AAWG member researchers involved.

Authorship

Publications will include as authors the **active participants** (see below) followed by "**and the AlpArray Working Group**" and a link to the AlpArray website where the full list of registered researcher members is maintained. This website will be independent of the affiliated institutions and managed by MWG4. Active participants are those who contributed substantially to the research. If the use of a "Working Group" as an author is not possible in a given media (e.g., AGU journals), then the AlpArray Working Group (information about member institutions and names of persons will be available on the AlpArray website) must be mentioned elsewhere, at least in the "Acknowledgments" section of the paper.

Initiation

This memorandum was approved by the participants of the May 18, 2015 AlpArray meeting in Zürich and sent to all interested institutions on May 20, 2015. Institutions substantially contributing to the AlpArray Scientific Program (see also preamble of this document and the AlpArray Science Plan of 2013) wishing to participate are requested – by June 20, 2015 – to (1) sign this Memorandum of Collaboration, to (2) name their institutional representative to the Science Council, and to (3) indicate this person's interest to serve on the Steering Committee as well as her/his willingness to candidacy as PC. Elections of the Steering Committee and the PC will be held electronically within 20 days thereafter. The AlpArray Working Group will be officially established and begin operation by July 10, 2015.

Nomination of MWG1-4 members will be compiled by August 31, 2015.

After the initiation phase the Steering Committee will review all incoming institution membership applications and initial science plans, and verify them according to the approved participation conditions. Then the proposals will be submitted to the Science Council to confirm all membership applications by 2/3 majority vote.

Duration

This memorandum has an initial validity of 5 years. Renewals are possible upon approval by the Science Council.

Signatures

Institution	Representative	Date, Place, Signature