



ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

il Direttore

**Istituto Nazionale di Geofisica
e Vulcanologia
AOO INGV**

Protocollo Generale - U

N. 0002738

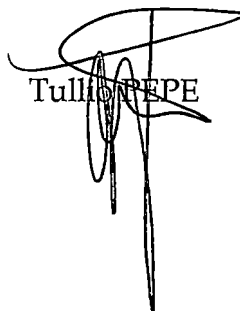
del 22/02/2019

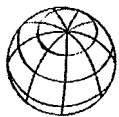


Al Dott. Lauro CHIARALUCE
Alla Segreteria del Presidente

Oggetto: Pubblicità atti

Si notifica in copia l'allegata Delibera n. 15/2019 del 31/01/2019 – Allegato J al Verbale n. 01/2019 concernente: Approvazione schema di Grant Agreement tra INGV e The German Research Centre for Geosciences (GFZ).


Tullio REPE



Delibera n. 15/2019

Allegato J al Verbale n. 01/2019

Oggetto: Approvazione schema di Grant Agreement tra INGV e The German Research Centre for Geosciences (GFZ).

IL CONSIGLIO DI AMMINISTRAZIONE

- **VISTO** il Decreto legislativo 29 settembre 1999, n. 381, concernente la costituzione dell'Istituto Nazionale di Geofisica e Vulcanologia (INGV);
- **VISTO** il Decreto legislativo 25 Novembre 2016, n. 218, recante *"Semplificazione delle attività degli Enti Pubblici di Ricerca ai sensi dell'art. 13 della Legge n. 124/2015"*;
- **VISTO** lo Statuto dell'INGV, approvato con Delibera del Consiglio di Amministrazione n. 372/2017 del 9 giugno 2017, come modificato con Delibere del Consiglio di Amministrazione n. 424/2017 del 15 settembre 2017 e n. 501/2017 del 21/12/2017, e pubblicato sul Sito WEB istituzionale (Avviso di emanazione pubblicato sulla Gazzetta Ufficiale della Repubblica Italiana - Serie generale - n. 27 del 2 febbraio 2018), in particolare, l'art. 8, comma 6, lettera f), il quale prevede che il CdA *"omissis....delibera la partecipazione a società, fondazione e consorzi, nonché la stipulazione di accordi con organismi nazionali, europei e internazionali"*;
- **VISTO** il Regolamento di Organizzazione e Funzionamento dell'Istituto Nazionale di Geofisica e Vulcanologia emanato con Decreto del Presidente n. 45 del 21/02/2018 e pubblicato sul sito istituzionale;
- **VISTO** il Regolamento di Amministrazione, Contabilità e Finanza pubblicato sulla Gazzetta Ufficiale della Repubblica Italiana - Serie Generale n. 119 del 14 maggio 2018 e pubblicato sul sito istituzionale;
- **CONSIDERATA** l'attività di implementazione tecnologica dell'infrastruttura di ricerca multidisciplinare denominata The Alto Tiberina Near Fault Observatory (TABOO);
- **VISTA** la nota del 7/01/2019, con la quale il Consorzio UNAVCO comunicava la donazione all'INGV di una strumentazione scientifica composta da 6 strain meters (GTSM Technologies) e 6 sensori sismici passivi (2Hz, 3 componenti);
- **CONSIDERATO** che tale donazione è il risultato del progetto MASS (Measuring aseismic fault slip during a normal faulting earthquake sequence in central Italy) redatto dal Dott. Lauro Chiaraluce, Ricercatore per conto dell'INGV;
- **VISTA** la nota INGV prot. 605 del 15/01/2019, con la quale si dava riscontro alla predetta donazione;
- **TENUTO CONTO** che l'International Continental Scientific Drilling Program (ICDP) è stato istituito come progetto di agenzia di finanziamento per fornire agli scienziati della Terra la capacità di affrontare questo ampio spettro di sfide che la società affronterà nel XXI secolo;



- **CONSIDERATO** che il German Research Center for Geosciences (GFZ) risulta essere il coordinatore del progetto ICDP che fornisce la leadership amministrativa e la direzione dell'ICDP;
- **VALUTATA** l'opportunità di sottoscrivere il Grant Agreement tra INGV e The German Research Centre for Geosciences (GFZ);
- Su proposta del presidente,

DELIBERA

L'approvazione dello schema di Grant Agreement tra l'Istituto Nazionale di Geofisica (INGV) e The German Research Centre for Geosciences (GFZ), allegato alla presente quale parte integrante e sostanziale (all. 1).

Viene dato mandato al Presidente dell'INGV alla sottoscrizione definitiva dell'atto in questione.

Letto, approvato e sottoscritto seduta stante.

Roma, 31/01/2019

La segretaria verbalizzante
(Sig.ra Silvana TUCCI)

Silvana Tucci

Il PRESIDENTE
(Prof. Carlo DOGLIONI)

[Signature of Prof. Carlo Doglioni]

GRANT AGREEMENT

- Joint Research Venture -

between

The German Research Centre for Geosciences (GFZ),
Telegrafenberg, 14473 Potsdam,
acting as the coordinator of the project
International Continental Scientific Drilling Program (ICDP),
hereinafter referred to as "agency"

and

**The National Institute of Geophysics and Volcanology, hereinafter
referred to as INGV, Tax Code - Part I.V.A. 06838821004 with registered
office in Rome, Via di Vigna Murata n. 605, represented by Prof. Carlo
Doglioni, as Legal Representative**
hereinafter referred to as "grantees"

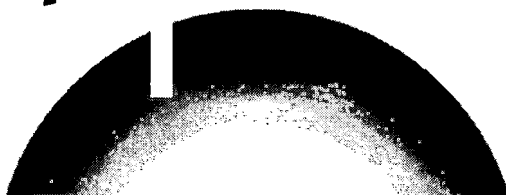
hereinafter, jointly or individually, referred to as "parties" or "party",

of the

Drilling Project STAR

(A Strainmeter Array along the Alto Tiberina Fault System, Central Italy
(hereinafter referred to as "action"))

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PREAMBLE

Scientific drilling has the capability to make a quantum leap in the scientific understanding of earthquakes, volcanic eruptions, the wise use of resources, climate and environmental changes, the biosphere-lithosphere interaction and the evolution and extinction of species. The International Continental Scientific Drilling Program (ICDP) was established as a project acting as a funding agency to provide Earth scientists the ability to address this broad spectrum of challenges society will face in the 21st century.

The GFZ German Research Centre for Geosciences has established Memorandums of Understanding with the Ministry of Geology and Mineral Resources of the People's Republic of China, the U.S. National Science Foundation, the British Geological Survey, the German Research Foundation, the Japan Agency for Marine Sciences and others that define the purpose, organization, and operation of the agency ICDP. Under said agreements, the GFZ is the ICDP-project coordinator providing the administrative leadership and direction of the ICDP, which is acting as a funding agency for scientific drilling projects and the related actions.

ARTICLE 1 – Subject of the agreement

This agreement sets out the rights and obligations and the terms and conditions applicable to the grant awarded to the grantees for implementing the action set out in Article 2.

ARTICLE 2 – Description of the action

The grant is awarded for the action entitled

Drilling Project

as described in detail in the full proposal to ICDP, see Attachment 1. A budget plan and a provisional time schedule for the execution of the action under the direction of the grantees are given in Attachment 2.

ARTICLE 3 – Estimated budget and budget transfer

With the granted budget of up to US\$ X,XXX,XXX the agency will support reasonable efforts of the grantees to fulfill the following responsibilities:

- 1) funding of drilling, logging or experiments or related operations via transfer of money to the grantees' institutions;
- 2) direct payment of on-site operations through the agency, with on-site supervision through and by order of the grantees.

Invoices and billing for the agency share of the action will be coordinated by the agencies OSG from an account administered by the GFZ

Name: Deutsche Bank Potsdam,
Address: Charlottenstr. 40, D-14467 Potsdam,
Account No.: 3181344,
Account Holder: Helmholtz Zentrum Potsdam
Deutsches GeoForschungsZentrum (ICDP)
Address of Holder: Telegrafenberg, D-14473 Potsdam
IBAN: DE76120700000318134400
Swift Code: DEUTDEBB 160

Upon approval of the grantees OSG will arrange for balancing of invoices of drilling and other operational contractors.

The agency will retain a minimum of 5% of approved funding until all reports as described in Article 5 and in Attachments have been delivered. All payments by the agency are depending on the timely project contributions (annual membership fees) of the ICDP project partners. Therefore, all funding duties by the agency are subject to availability of funds.

ARTICLE 4 - Responsibilities of the agency

The service and consultation provided through the Operational Support Group (OSG) of the agency is generally free of charge. Nevertheless, OSG's requested support (see proposal cover sheet page 2) must be born by the granted action. For the administrative implementation the agency will close a separate grant agreement with GFZ.

OSG's support includes

1) Data and information management:

OSG will provide an integrated ICDP Information Infrastructure which consists of the *On-site Drilling Information System DIS^{GFZ}* and which is an integral part of the ICDP Clearinghouse and the ICDP Data Warehouse.

Prior to drilling operations OSG and GFZ Data Center personnel will:

- in co-operation with the actions data manager (designated in time by grantees) configure an individual DIS for this action,
- perform a test installation of the individual DIS and will provide a training for the actions data manager at GFZ,
- support usually via phone or email the action data manager on installation and administration of the DIS at the site of this action.

During the implementation of the action OSG and GFZ Data Center personnel will support the action data manager on administration of the DIS.

2) Engineering support and consultation for:

- oversight and support during drilling operations
- and in cases of emergency during operations

in co-operation with grantees and the action's drill engineer or operations manager.

3) Consultation for:

- Consultation in cases of emergency

- 4) Support and consultation for:
 - planning of on-site science operations,
 - set up and operations of on-site field lab,
 - training of action's on-site personnel,
 - consultation in cases of emergency.
- 5) Geophysical downhole logging and field measurements in scientific cooperation including
- 6) Provision of instruments or devices of the GFZ-owned ICDP equipment pool according to ICDP tool operation plan.
- 7) Conduction of an action oriented ICDP training course for geoscientists, logging specialists, and drilling engineers and data manager.

ARTICLE 5 - Responsibilities of the grantees

The grantees have full responsibility for the direction of the action or activity supported under ICDP funds and for adherence to the conditions stipulated by the funding. Although the grantees are encouraged to seek the advice and the opinion of the ICDP-OSG on special problems that may arise, such advice does not diminish the grantees' responsibility for making sound scientific and administrative judgments and does not imply that the responsibility for operating decisions has shifted to the agency.

The grantees use reasonable efforts to fulfill the following responsibilities:

1) Participation of Scientists

Scientists and technicians from all ICDP partner countries and corporate affiliates, included in the Scientific Team (see appendix A of the proposal), shall have the opportunity to participate in this action. Additionally, the grantees advertise the action for participation of other interested scientists through timely announcements, as 'hole of opportunity'. All scientists are expected to provide their own support. The activities from the interested scientists will be coordinated through the grantees.

2) Authorization and Availability of Data and Samples, Rights and Commencement of Disposal

With OSG-support the grantees will enable the access to all drilling related data, including technical data, engineering plans, samples, cores and well logs. The grantees will therefore make these data available through the Drilling Information System (DIS) in co-operation with OSG (see Attachment 3). The timing within this schedule, authorization and appearance of presentations within electronic or other media will be managed through OSG in co-operation with the grantees and their data manager.

Data associated to surveys collected during the course of the action or to monitoring shall also become available, but availability may depend on the moratorium policy depending on the specific partners and teams which were collecting these data (see appendix D in the proposal).

3) Reports and Substantiation of Expenditures

The grantees and the site-teams have to describe the status of the action in scientific and financial Reports. Details of the reports are described in Attachment 3.

If reports are not submitted, processing of a planned funding installment will not be initiated by the agency.

All drilling operations and down-hole measurements or experiments will be reported on a daily basis in the DIS (report forms with minimum requirements provided by OSG). In the event that the DIS is temporarily not available or working, the grantees will provide reports to OSG on a weekly basis via electronic messages (e.g. email). In the case of events that endanger the budget plan or schedule of the action, the grantees will inform the agency as soon as possible.

4) Publication

The grantees and members of the scientific group are expected to publish or otherwise make publicly available the results of the work conducted with ICDP support. It is expected to publish a Science Report in the Scientific Drilling Journal shortly after the drilling operations including an Operational Report and the corresponding data sets as electronic supplements. The grantees shall require that all cooperating scientists inform them with citation information and copies in advance of all presentations and publications related to this action. The timing, authorization, and appearance of presentations within electronic or other media will be managed through the grantees.

All kinds of publications by the grantees and the Scientific Team related to the action should be reported to the OSG; two copies should be sent to OSG in order to allow recording and long-term availability of the publications.

On-site measurements (e.g., downhole and whole core physical properties) and initial core data shall be openly accessible to all cooperating scientists. Nevertheless, the results are owned by the responsible scientists and will only be published in accordance with the responsible scientists.

Results of scientific work, which were directly achieved with OSG service or consultation should not be published without notice to and if possible in co-operation with OSG.

5) Acknowledgement of Support

The grantees and all cooperating scientists are obligated to acknowledge the ICDP support on any publication of any material, whether copyrighted or not, based on or developed under this international action.

In addition, upon request grantees shall consult with the next generation of grantees to communicate experiences in managing ICDP actions (projects and workshops). They should also be available for ICDP training courses, for distinguished lecture programs and report to the ICDP panels upon request.

6) Long-term Curation and Sample Storage

Long-term curation and sample service will be handled by the site teams of specific boreholes. This includes proper protection, storage, organization, oversight and provisions for easy access and use for valid research purposes.

A three-year moratorium period following generation of samples or initial data will limit access and use exclusively to the action's scientific team. At the conclusion of the moratorium, access to the samples or data will be unrestricted.

If at any time in the future this core storage facility is to be closed or if the facility does not allow free access to the cores by the scientific community, ICDP will immediately be informed and seek for an alternative repository.

ARTICLE 6 - Intellectual Property Rights

With respect to copyrightable data produced under this grant agreement, each Party shall be entitled to at least a non-exclusive, irrevocable, royalty-free license in all countries to reproduce, publicly distribute and translate scientific and technical reports and information prepared under this agreement, provided that the Parties will not make public distribution of data to which the right of access has been delayed until such time as that period of delayed access has expired.

ARTICLE 7 - Confidence

The Parties will provide each other with any information which they can dispose of and which is useful for them to carry out their obligations under this agreement. The Parties take care that any confidential information or any information restricted to authorized persons will not be distributed to unauthorized persons or the public.

ARTICLE 8 - Liability

The agency cannot assume any liability for activities, data, results, computer programs or late performance of duties defined in this agreement.

The agency cannot assume any liability for accidents, illness, or claims arising out of any work performed under this agreement.

Each Party will attempt efforts to take such steps as may be deemed necessary to insure or protect itself, its employees and its property.

ARTICLE 9 - Entry into Force, Duration and Termination

This agreement will enter into force upon signature and remain in force during the action is in progress and all defined duties have been fulfilled or by written declaration of termination.

The agency's support may be suspended or terminated in whole or in part, when the agency has reason to assume that the grantees have failed to comply with the terms and conditions of this agreement or when the agency has other reasonable cause. The same is true for a mutual agreement between the agency and the grantees upon the request of either Party (if the parties cannot reach an agreement, agency reserves the right to unilaterally terminate the support). Normally, action by the agency to suspend or terminate a support will be taken only after the grantees have been informed by the agency, or informed of any deficiency on its part and given an opportunity to correct it.

No costs incurred during a suspension period or after the effective date of a termination will be allowable, except those costs for operations or material which were already

ordered and cannot be suspended, and those costs which, in the opinion of ICDP, the grantees could not reasonably avoid or eliminate, or which were otherwise authorized by the suspension or termination notice, provided such costs would otherwise be allowable under the terms of the grant.

ARTICLE 10 - Amendment

This agreement may be amended and extended by written agreement of the Parties. Neither the phenomenon nor the phenomena under study nor the objectives of the action stated in the proposal nor agreed modifications there nor shall the budget figured in the proposal be changed without any prior approval of the agency. Such changes should be proposed to the agency by the grantees in writing or in text form.

ARTICLE 11 - Applicable law and resolution of conflicts

This agreement shall be subject to the laws of the Federal Republic of Germany. The place of jurisdiction is Potsdam.

The Parties will attempt, in good faith to resolve any controversy or claim arising out of, or relating to, this agreement. In the case of non-resolved controversy the chairperson of the agency's Science Advisory Group (SAG) will be asked for arbitration.

ARTICLE 12 - Representatives

For the purpose of this agreement, the representatives of the Parties are:

Helmholtz-Centre Potsdam GFZ - German Research Centre for Geosciences:

- Dr. Ulrich Harms or a person duly authorized by him.

Grantees:

- Prof. Dr. Carlo Doglioni President and legal representative INGV;
- Dr. Lauro Chiaraluce Scientific manager INGV;

Signatures and Date

Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences

Prof. Dr. M. Bohnhoff
EC Chair (ICDP)

date

Prof. Dr. R. Hüttl
Executive Board

Dr. St. Schwartz

date

Grantee

Prof. Dr. Carlo Doglioni President and legal representative INGV date
Istituto Nazionale di Geofisica e Vulcanologia Via di
Vigna Murata, 605 00143 - Roma (IT)

Dr. Lauro Chiaraluce Scientific manager INGV
Istituto Nazionale di Geofisica e Vulcanologia Via di
Vigna Murata, 605 00143 - Roma (IT)

date

Prof. Dr. XYZ
Institution

date

Attachment 1: Summary of the approved **Proposal 05-2018 to ICDP**

The Alto Tiberina fault (ATF) in the Northern Apennines is a low-angle normal fault (mean dip 20°) that is the target of The Alto Tiberina Near Fault Observatory (TABOO), a multidisciplinary research infrastructure managed by INGV and part of the European Plate Observing System. We propose to deploy a STrainmeter ARray in shallow boreholes (STAR) to complement and enhance TABOO.

Existing seismic data from TABOO reveal microseismicity, at a consistently high rate on the ATF fault plane, including repeating earthquakes (RE). REs together with a steep gradient in crustal velocities measured by GPS and transient surface motion lasting for few months and coinciding with seismic swarms, show that portions of the ATF are creeping aseismically.

Recent studies document that any given patch of a fault can creep, nucleate slow earthquakes, and also host large earthquakes (e.g. Iquique earthquake, Tohoku earthquake). Why a fault patch would switch from one mode of slip to another runs contrary to standard theory. Thus, these observations are forcing a revolution in our way of thinking about how faults accommodate slip. STAR will collect Open Access data needed to address questions about the relationship between creep, slow slip, dynamic earthquake rupture and tectonic faulting. Understanding the physics allowing for both seismic and aseismic slip on a single fault patch, has implications for seismic hazard and risk assessment globally.

STAR will consist of six 80-160 m deep vertical boreholes covering the portion of the ATF that exhibits REs at shallow depth (~4 km), instrumented with strainmeters, downhole seismometers and pressure transducers. Each site will be also equipped with surface GPS and a meteorological instrument allowing correlation between seismicity, degassing (CO₂, Rn) measurements and subsurface strain. STAR will provide the international community an opportunity to study creep at local scale and over periods of minutes to months poorly constrained by other geophysical instruments.

US National Science Foundation has already contributed with equipment and salary support toward the deployment of STAR (including Gladwin Tensor Borehole Strainmeters, seismometers, GPS instruments, data loggers, pressure transducers and met-packs). STAR is also supported by existing TABOO power and communications infrastructure, managed by INGV. A number of international collaborators working on the physics of fault slip and earthquakes are also committed to explore STAR data. Here, we seek funds to cover the costs of drilling of the shallow boreholes permitting deployment of the STAR array.

Attachment 3: Specific Reports to ICDP

1. While Drilling

a) Daily Drilling Reports of Operator

(for internal use, partly sharing among the Science Team and archiving)

(per shift and/or day)

b) Data Updates

(for sharing among the Science Team and archiving)

(incremental Updates of the basic data sets per day)

c) Message of the Day a short simple message per for action specific webpage in the ICDP portal that may include but is not limited to

- An "Image of the Day"
- Plus a number of selected images (optional)
- Both including short captions with creator and copyright
- Message of the Day: informative text describing the progress and highlights of the day including creator and copyright

2. After Drilling

A peer reviewed open access Science Report in the journal "Scientific Drilling" shortly after the completion of the drilling operations, but not later than the first sampling party six months after the completion of the drilling operations. This Science Report includes a detailed Operational Report, and the Basic Data Sets as digital DOI-referenced published supplements.

a) Scientific Report (to be published in the journal "Scientific Drilling")

The Scientific Reports shall include:

- A summary of overall progress, including major results obtained to date,
- A comparison of actual accomplishments with proposed goals for the period,
- An indication of any current problems or favorable or unusual developments,
- A summary of work to be performed during the succeeding period,
- Other information pertinent to the action and
- A list of Publications resulting from the action.

b) Operational Report (to be published as digital supplement to the Science Report in the Scientific Drilling Journal)

- Personnel
- The action targets
- Scientific objectives
- Preparations / Mobilizations/ Demobilizations
- Technical Operations description including e.g.
 - Infrastructure at the location and drill site set up,
 - Rig type and specifications of installed components (e.g. hook load capacity, drawworks, pumps, rotary table, power swivel, handling equipment),

- A summary of drilling and coring operations (incl. BHA's, bits, core bits, core recovery, used mud systems, mud pressure, mud density and mud flow, ROP, WOB, RPM etc),
 - A casing scheme and description of cementing operations,
 - Description of problems encountered e.g. fishing operations, mud loss, breakouts and a
 - Summary of progress and costs including a drill-time log and a depth vs. cost breakdown.
- Scientific Operations
 - Inventory of Sample Material
 - The Basic Data Sets
 - Storage of Sample Material / Sampling Party
 - Preliminary Scientific Assessment
 - Conclusions
 - Acknowledgements
 - Glossary

See example: The COSC-1 Operational Report (doi: 10.2312/ICDP.2015.002)

c) The Basic Data Sets

Example: The COSC-1 Operational Data Sets (doi: 10.1594/GFZ.SDDB.ICDP.5054.2015)
and: Explanatory remarks on the operational data sets (doi: 10.2312/ICDP.2015.001)

3. Financial reports

The grantees or the action manager in charge of finances and budget have to provide at least monthly oversight of income (ICDP and other funding sources covering operational costs) and payments in oversight form to ICDP-OSG; these reports shall show differences to Budget and Cost plans as planned and detailed in Attachment 2 and 3.

A full financial report is due three months after the action's operational phase (drilling and completion) ended.