



ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

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

Protocollo Generale - U

N. 0009384

del 19/06/2018



Gestione WEB

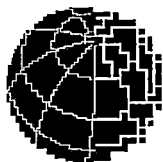
il Direttore

Ai Direttori di Dipartimento
Ai Direttori di Sezione
Al Direttore della Direzione Centrale Ragioneria e Bilancio
Alla Dott.ssa Francesca PACOR
Al Dott. Giovanni LANZANO
Alla Dott.ssa Chiara FELICETTA
Al Responsabile Centro Servizi – Ufficio per il Coordinamento
delle attività a Supporto della Ricerca
Alla Segreteria della Presidenza

Oggetto: Pubblicità atti

Si notifica in copia l'allegata Delibera n. 620/2018 del 08/06/2018 – Allegato R al Verbale n. 04/2018 concernente: Standard Accademic Cooperation Contract by Electricite De France and Istituto Nazionale di Geofisica e Vulcanologia (INGV).

Tullio PEPE



Istituto Nazionale di Geofisica e Vulcanologia

Delibera n. 620/2018

Allegato R al Verbale n. 04/2018

Oggetto: Standard Accademic Cooperation Contract by Electricite De France (EDF) and by Istituto Nazionale di Geofisica e Vulcanologia (INGV).

IL CONSIGLIO DI AMMINISTRAZIONE

VISTO il Decreto legislativo 29 settembre 1999, n. 381, concernente la costituzione dell'Istituto Nazionale di Geofisica e Vulcanologia (INGV);

VISTA la Legge 27 settembre 2007, n. 165, concernente la "Delega al Governo in materia di riordino degli Enti di Ricerca";

VISTO il Decreto legislativo 31 dicembre 2009, n. 213, concernente il "Riordino degli Enti di Ricerca in attuazione dell'art. 1 della Legge 27 settembre 2007, n. 165";

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'Istituto Nazionale di Geofisica e Vulcanologia approvato con delibera n. 424/2017 del Consiglio di Amministrazione, in data 15 settembre 2017 - pubblicato sulla Gazzetta Ufficiale della Repubblica Italiana – Serie Generale n. 27 del 02 febbraio 2018 in particolare l'art. 8 comma 6 lettera f) il quale prevede che il CdA "*...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;

VALUTATA l'opportunità di sottoscrivere lo Standard Accademic Cooperation Contract by Electricite De France (EDF) and by Istituto Nazionale di Geofisica e Vulcanologia (INGV);

CONSIDERATO che l'attività da espletare rientra tra i compiti scientifici e istituzionali dell'INGV;

VISTI i pareri favorevoli dei Direttori di Sezione e di Dipartimento;

DELIBERA

di autorizzare il Presidente, alla definizione nonché alla sottoscrizione dello Standard Accademic Cooperation Contract by Electricite De France (EDF) and by Istituto Nazionale di Geofisica e Vulcanologia (INGV) (all.1).

Letto, approvato e sottoscritto seduta stante.

Roma, 08/06/2018

La segretaria verbalizzante
(Avv. Maria Valeria INTINI)

IL PRESIDENTE
(Prof. Carlo DOGLIONI)



STANDARD "ACADEMIC" CO-OPERATION CONTRACT

For a research programme carried out jointly by EDF and by INGV

A handwritten signature in black ink, located in the bottom right corner of the page.

CO-OPERATION CONTRACT NO.

To be mentioned in any correspondence

Between

ELECTRICITE DE FRANCE, a "*Société anonyme*" (stock company) with a registered capital of 924.433.311 euros, whose registered office is located at 22-30, avenue de Wagram, 75382 Paris Cedex 08, entered in the RCS (trade and company register) of Paris under the number B 552 081 317, represented by the duly authorised signatory for this purpose, referred to in the present document as "**EDF**",

On the one hand,

And

Istituto Nazionale di Geofisica e Vulcanologia, (*legal status*), whose registered office is located at via di Vigna Murata 605 00143 Roma (Italy), entered in the Italian trade and company register under the number C.F. VAT n.06838821004, represented by Professor Carlo Doglioni (President) who is duly authorised for this purpose, referred to in the present document as "**INGV**",

The Parties are referred to hereafter either jointly or separately by the words "Party" or "Parties".

on the other hand,



FOREWORD

EDF, with the international research and development programme SIGMA-2 (2017-2021), aims at improving both, seismic hazard and ground motion assessment methods. Major goals of SIGMA-2 project include the improvement of seismic hazard input data, the assessment of realistic ground motion and associated uncertainties, as well as their exploitation in both, site-specific and generic PSHA studies. Integrated objectives regard the optimization of ground motion assessment methods, leading to improved hazard estimates.

Considering that EDF possesses considerable know-how in the field of seismic hazard and more particularly in that of ground motion characterization,

Considering that the INGV possesses worldwide recognised know-how in the field of engineering seismology and seismic hazard and more particularly in that of seismic ground motion characterization,

In view of the fact that EDF and INGV consider that EDF's and INGV's skills may profitably be pooled for the purpose of identifying reference sites for seismic motion

The following is hereby agreed

ARTICLE 0 - DEFINITIONS

"EDF's Own Requirements": refers to the use of the Results by EDF or by any subsidiary or any legal entity controlled by EDF in the terms of article L 233-3 of the Commercial Code, for the purpose of research, production, transport, distribution or energy supplies, or more generally for any other internal requirement conforming to the corporate purpose of EDF, whether this use is carried out by EDF directly or via any supplier or subcontractor of its choice.

"INGV's Own Requirements": refers to the use of the Results by INGV, for the purpose of research, training and education, whether this use is carried out by INGV directly or via any supplier or subcontractor of its choice.

"Technical Committee": please see article 6

"Prior Knowledge": refers to all knowledge held by one of the Parties, including among other things patents, patents currently the process of being lodged, know-how, brands, Prior Software, and data of which it is the owner on the date on which the Contract is signed, or that one of the Parties develops or acquires concomitantly and independently of the performance of the said Contract.

"Contract": refers to the present Contract

"Divulge": to make known to third parties or to allow them to have knowledge of the Results, or of any other Confidential Information.

"Confidential Information": refers to all technical, commercial or other information of any nature communicated by one Party to the other Party during the performance of the Contract, in any form whatsoever, either directly or indirectly, through the submission of documents or by supplying products, samples, equipment, materials, or verbally, in particular during meetings or conversations with employees of the Parties or made known to them during demonstrations or visits to EDF's or INGV's facilities.

"Software":



- Prior Software: software constituting Prior Knowledge vis-à-vis the Contract.
- Contractual Software: software developed within the scope of the Contract. The Contractual Software is considered to be a Result of the Contract.

"Research Programme": please see article 1

"Results": refers to all knowledge, whether patentable or otherwise, including patents, know-how, Contractual Software, data, drawings, models and prototypes, regardless of the media involved, generated within the scope of the Contract.

"End of Contract Meeting": please see article 6

ARTICLE 1 - PURPOSE OF THE CONTRACT AND CONSTITUENT ITEMS

EDF and INGV have decided to combine their efforts in order to carry out a Research Programme aimed at improving *ground motion predictions for rock sites* hereafter referred to as the "Research Programme".

This research will be carried out both by the teams from TEGG (Department of EDF - DI located at 905 av. du Camp de Menthe 13090 AIX EN PROVENCE) and by the teams of the INGV, Sezione di Milano, located at Via Alfonso Corti 12, 20133 Milano (Italy).

The constituent items of the Contract are as follows:

- The present Contract;
- The attached technical and financial appendices;
- The list of Prior Knowledge;
- The Safety Plan in the event of staff being seconded, in accordance with article 11

These items are considered to be contractual in nature.

ARTICLE 2 - THE TECHNICAL CONTRIBUTIONS OF THE PARTIES

The technical contributions of each of the Parties are those defined in the technical appendix.

Each Party will provide the other with the documents detailed in the technical appendix which will form the basis for the performance of the Research Programme

- EDF: *During the last 6 years, EDF has led research and development programmes and actions whose main scientific topic is related to seismic hazard. The scientific results obtained in the framework of the SIGMA, SIGMA-2 and SINAPS@ programmes will be shared with the other Party. The other Party is invited to participate to the SIGMA-2 programme meetings and to the scientific debates related to the topic of the Research Programme.*

Through the SIGMA-2 research programme results, EDF will provide as well: Generalized Inversion Techniques results in France.

INGV: - *Research work by INGV, as described in the technical appendix, will be carried out by a post-doctoral researcher (Chiara Felicetta) within the Milan section team, under the*



supervision of Dr. Francesca Pacor and Dr. Giovanni Lanzano. The duration planned for this work is 30 months.

This Research Programme is carried out as per the conditions detailed in the following articles.

ARTICLE 3 - MODIFICATIONS TO THE RESEARCH PROGRAMME

If it becomes necessary to carry out modifications to the Research Programme in order to adapt it to new requirements which emerge during the lifetime of the Contract, these modifications will be decided on subject to joint agreement between the Parties, and will be implemented via an amendment to the present Contract.

ARTICLE 4 - COST OF THE RESEARCH PROGRAMME - REMUNERATION OF THE PARTIES

The total cost of the Research Programme totals 118 680 euros ex VAT. The breakdown of this sum is shown in the attached financial appendix.

EDF will pay INGV a fixed financial contribution of 75 000 euros ex VAT.

EDF will also bear the cost of its own expenses under the programme, these expenses being estimated at 18 680 euros ex VAT.

EDF's total contribution is 93 680 euros ex VAT, this being 79 % of the total cost of the Research Programme.

INGV will also bear the cost of its own expenses under the programme, these expenses being estimated at 25 000 euros ex VAT.

INGV's total contribution is 25 000 euros ex VAT, this being 21 % of the total cost of the Research Programme.

The prices shown above, (drawn up based on the economic conditions prevailing at the time the Contract was signed), are firm.

ARTICLE 5 - REMUNERATION TERMS

The payment of EDF's financial contribution will be made in 6 (six) instalments based on the following schedule:

20 000 euros, on June, 2018 (*after the start meeting*)

10 000 euros, on December, 2018 (*after the progress meeting*)

10 000 euros, on June 2019 (*after the receipt by EDF of Deliverable D1, as defined in the technical appendix*)

10 000 euros, on December, 2019 (*after the progress meeting*).

10 000 euros, on June, 2020 (after the receipt by EDF of Deliverable D2, as defined in the technical appendix).

15 000 euros, on December, 2020 (after the receipt by EDF of Deliverable D3, as defined in the technical appendix).

The report must be approved by the technical representative of EDF within a period of two weeks following receipt.

The invoices, (which must be drawn up in duplicate), should be sent to:

EDF S.A. Scan Fournisseurs BP 306 92141 Clamart cedex
--

Payments are made by bank transfer 60 days after issue of the invoice.

Upon signature of the present Contract by the Parties, INGV will send its bank account and bank sort code details to: EDF - Direction des Achats, à l'attention de l'administrateur référentiel, ANAPRI, 44 boulevard Albert 1er – 54000 Nancy

ARTICLE 6 - CONTACTS BETWEEN EDF AND INGV

A Technical Committee is being created to handle the running and monitoring of this Contract. This committee comprises:

- A total of 1 (one) EDF representative:
 - TRAVERSA Paola, EDF-DI-TEGG, 905 av. du Camp de Menthe, 13090 Aix-en-Provence (France), +33 (0)4 42 95 95 35, paola.traversa@edf.fr
- A total of 3 (three) INGV representatives:
 - Pacor Francesca, 0039 02 23699279, francesca.pacor@ingv.it
 - Lanzano Giovanni, 0039 02 23699279, giovanni.lanzano@ingv.it

Either Party may change its representatives on the Technical Committee, but agrees to inform the other Party of this as soon as this change is made.

All communication or notifications concerning the present Contract must be sent via these representatives.

These representatives may, where necessary, be accompanied by other experts as desired (including among others experts in industrial property rights, result exploitation, and marketing or purchasing) on condition that these experts have agreed in advance to observe the confidentiality requirements concerning any information which they may receive during their involvement. The experts may not vote.

The Technical Committee meets periodically every 6 months, or following an express request by one of the Parties, as well as at the end of the Contract.

Among other things, the role of the Technical Committee is to:

- Monitor progress with the work. This includes ensuring that deadlines are being met and granting formal acceptance (with or without reservations) for the deliverables detailed in the technical appendix.
- Draw up a periodical written report explaining the state of progress with the Contract.
- Put forward proposals to the signatories of the Contract concerning any possible reorientation, extension or cancellation of all or part of the work covered by the Contract, and to ensure that the Contract takes account of these modifications.
- Choose any possible Prior Software, following a proposal from one of the Parties, when this Prior Software is not explained in the technical appendix. The Party proposing it then guarantees that this Prior Software is free of any limitations which may restrict the application of any clause of the Contract.
- Verify the effective application of the requirements with regard to intellectual property rights and exploitation rights for the Results, during the Contract, at the end of the Contract and even (where necessary) following the end of the Contract. In order to examine these aspects, the Parties will ensure that experts in these fields are present. In particular, the Technical Committee will meet whenever it appears that the Results are likely to involve protection via a lodgement of title(s) (patents).
- Organise the End of Contract Meeting at the end of the Contract, and drawing up the meeting minutes.

The End of Contract Meeting comprises a meeting which is open to other members of the Parties' staff and not only the representatives of the Technical Committee, during which the Parties:

- Provide a complete and reciprocal presentation of the new knowledge generated via the Contract. This presentation is handled by the teams which carried out the Research Programme
- Supply one another with the deliverables planned for this stage, in addition to any other documents formally detailing the Results and/or necessary to their use, if these have not already been provided.

The Technical Committee draws up minutes from each of its meetings and from the End of Contract Meeting, which must always include a precise and exhaustive recap of the Results and of all documents supplied.

All of the reports, propositions and minutes from the Technical Committee must be approved unanimously by the Parties. To carry out such approval, each Party has one vote, regardless of the number of representatives appointed. If this approval is not forthcoming, the dispute is referred to the signatories of the Contract.

ARTICLE 7 – CONFIDENTIALITY

7.1 - The Parties will periodically and exhaustively supply one another with the information concerning developments with the studies and research covered by the Contract, and the Results obtained from each of these. The Technical Committee will be kept informed on a permanent basis.



7.2 - Each Party agrees that it will not Divulge the information mentioned in 7.1, in addition to any Confidential Information and Results, and will take all measures to avoid such Divulgence occurring.

Each Party agrees that during the performance of the Contract it will not seek to gain knowledge of any other Confidential Information concerning the other Party, by any means whatsoever.

In the event of infractions vis-à-vis these commitments, the Party considering itself the victim of the infraction is entitled to demand that the penalty clauses concerning secrecy should be applied.

The provisions of the present article 7.2 do not apply to Confidential Information which :

- Was in the public domain on the date on which it was communicated by one of the Parties, or which later enters the public domain without this being due to the Party having received it;
- Was in the possession of one of the Parties prior to the start date of the agreement, on condition that the Party concerned is able to provide proof of this;
- Was transmitted to one of the Parties by a third party who held this information legitimately, and which was not bound by an obligation to prevent divulgence of the said information.

ARTICLE 8 - PUBLICATIONS

8.1 - During the lifetime of the present Contract and during the five (5) years following its expiry, any publication or announcements by either of the Parties concerning the Research Programme must be subject to the written agreement of the other Party being obtained, with the other Party concerned having a maximum period of one (1) month to make known its decision, as from the date of receipt of the written request submitted by registered letter with proof of receipt. Should no reply have been received during this period, then agreement is considered to have been granted.

8.2 - Accordingly, the other Party may delete or modify certain details whose divulgence would be likely to damage the industrial and commercial use of the Results of the Study. Nevertheless, such deletions or modifications should not affect the scientific value of the publication.

8.3 - The other Party may also ask to delay publication or communication, for a period of not more than eighteen (18) months, if certain information requires protection, such as intellectual property.

8.4 - When the request detailed in 8.1 is made, the Party wishing to publish or communicate the information must request the prior written agreement of the other Party in order to mention the support provided by the other Party in the performance of the Research Programme.

ARTICLE 9 - INTELLECTUAL AND INDUSTRIAL PROPERTY RIGHTS

9.1 General points

9.1.1 The Parties' staff

Each Party will make it its own personal business to deal with the rights and duties of its own staff.



In particular, each Party agrees that in its dealings with its staff it will acquire the proprietary intellectual property rights that they may possess or subsequently possess under the Contract, in as far as it is bound vis-à-vis the other Party to make these available to it under the Contract.

Each Party will ensure that its employees' moral and proprietary rights are respected concerning inventions, software and intellectual products and in particular right to names.

9.1.2 Transfer/disposal of patents and Results

If one of the Parties transfers or disposes of all or part of its patents and/or Results arising from the Contract, it agrees to ensure that the assignee observes all of the obligations that it has entered into. It remains personally liable vis-à-vis the other Party for the performance of these Contractual commitments by its assignee.

9.1.3 Judicial settlement/compulsory liquidation

In the event of business failure, including among other things in the event of the Party holding the patents and/or Results derived from the Contract being subject to judicial settlement or the compulsory liquidation of its assets, the other Party has a right of first preference if the receiver does not wish to continue with the performance of the Contract. In the event of the disposal of the goodwill belonging to the Party which is subject to the said judicial settlement/compulsory liquidation with the patents and/or Results derived from the Contract, the other Party has a period of three (3) months to exercise its right of first preference vis-à-vis the official receiver, this request being sent by registered letter with proof of receipt.

9.2 Prior Knowledge - Patents, know-how and software belonging to third parties

Each Party remains the owner of its Prior Knowledge. However, in as far as this is strictly necessary to allow for the exploitation as provided for in 9.4, each Party grants the other Party a simple licence at no additional cost, for the said Prior Knowledge. This license is strictly limited to this exploitation.

The list of Prior Knowledge is attached as an appendix to the Contract. Each Party will update this list of Prior Knowledge and will inform the other whenever an update is carried out.

If one of the Parties considers it necessary to make use of a patent, of know-how or of Prior Software belonging to a third party, it will inform the Technical Committee of this and will handle all dealings with the third party to which such assets belong. It will ensure beforehand that the use of this patent, of this know-how or of this Prior Software in no way restricts the rights conferred upon the other Party under the Contract.

Any possible Prior Software supplied is subject to the technical and financial appendices. Except in the event of clauses existing to the contrary, the Prior Software is accessible by the Parties by machine and/or in the form of lists, manuals, notices or usage instructions, for the purpose of understanding or assessing the Results of the Research Programme.

9.3. - Results

The Results are jointly owned by both Parties.

The documents to be supplied under the Contract are shown in the technical appendix. Except in the event of clauses to the contrary existing, all of the Results from each Party which are not specified in the purpose of the Contract as needing to be physically supplied (for example original measurement records, preliminary notes, etc) may be accessed by the other Party for consultation, upon request.

9.3.1 Patents arising from the Contract

Each Party will promptly inform the Technical Committee in writing of inventions discovered under the Contract, and will stipulate if it intends to have these protected by a patent. The Technical Committee will assess the appropriateness and the timescale for applying the patents to protect these inventions. These patents will be lodged in the name of, and at the cost of one or other of the Parties, with the Party lodging the patents agreeing to immediately grant the necessary licences to the other Party in order to enable it to carry out the exploitation as detailed in article 9.4.

In the event that the Technical Committee is unable to reach an agreement at the latest fifteen (15) days as from the date on which the above-mentioned notification is received, the following rules will then apply:

- If a Party recommends that a patent should not be launched, or at least should not be lodged immediately in order to maintain secrecy concerning the invention, this argument will be seriously considered;
- If a Party justifies its position by citing the lack of value of any possible patent as a protective measure to safeguard the results of the Research Programme or as part of any licensing policy, the other Party is free to have this lodged in its name and at its cost, on condition that it protects the interests of the Parties as detailed below in 9.4;
- If the Parties are unable to agree on who should lodge a patent application, the patent is taken out jointly, with co-ownership rules then being drawn up to define the practical terms concerning its administration, with it being clearly understood that the stipulations of article 9.4 of the Contract remain valid, unless a unanimous decision to the contrary is taken by the Parties.

The recommendations or renunciations detailed above must be confirmed in writing to the other Party within the fifteen (15) days following the announcement of the invention to the Technical Committee.

Each Party will keep the other informed of the key facts concerning the patents thus lodged and their extensions. If a Party decides not to continue with the acquisition process or not to have one of these patents kept in force, it will inform the other Party of this in advance in order to enable it to do so in its place, (solely at the other Party's cost) and, at its request, will transfer ownership to it in accordance with financial terms to be negotiated.

The provisions of this article apply to French patents and their extensions internationally.

9.3.2 Results covered by copyright

In order to arrive at a situation in which they have joint ownership of the Results covered by copyright, the Parties will transfer to one another as needed (as per the conditions detailed hereafter) the users' rights, reproduction rights, adaptation rights, representation rights and exploitation rights for any original design in the terms of the Intellectual Property Code, carried out under the Contract, including reports, software and documentation, and more generally all Results or similar which may be protected with regard to copyright.

The above-mentioned rights will be transferred as and when the Results are obtained, for all countries and for the whole legal duration of their protection by copyright.

These rights include users' rights, reproduction rights, adaptation rights, representation rights and exploitation rights as detailed hereafter:



- *Users' rights*: refer to the right to use the result for all uses, regardless of what these uses may be.

- *Reproduction rights*: refer among other things to the right to store the Results on any medium, the right to reproduce the Results or to have them reproduced by any means, in any form and on any medium including among others IT-related media (diskette, CD-ROM, DVD-ROM, etc.) and on any medium currently existing or which may exist in future, with an unlimited number of copies.

- *Adaptation rights* refer to the right to correct any errors, the right to create any new version in French or in a foreign language, and in any language (including computer languages), this applying to all or part of the Results and more generally the right to translate, arrange, modify, adapt, or to convert, wholly or partially and in written, verbal, telematic, digital form etc, the Results for any kind of use and/or exploitation.

- *Representation rights* refer among other things to the right to publicly display or have displayed the Results or their secondary exploitations by any means currently known or unknown, namely broadcasting, communication via analogue and/or digital means on computerised telecommunications networks (open and/or private, and national and/or international) on specialised broadcasting circuits or to the general public.

- *Exploitation rights* refer among other things to the right to directly exploit and/or to grant to third parties in France or abroad, by transfer or concession, the rights to use, reproduce, represent and/or to exploit the Results, (whether on an exclusive or simple, transferable or non-transferable, free of charge or for payment basis).

Concerning the software included in the Results, this will be supplied in the form of lists and on magnetic media, in the source code language, including comments, accompanied by documentation, notices and usage instructions.

9.4 The exploitation of the Results derived from the Contract

In the following text, the term "licence" used alone or as part of the expression "licence for patents and Results" applies equally to software and includes usage rights, reproduction rights and modification rights. The term "licence" is understood to refer to a licence and/or sublicense.

9.4.1 The Parties' intent – Prior consultation concerning licenses.

EDF enters into the Contract with a view to using the Results for EDF's Own Requirements and/or in its dealings with its clients or suppliers. EDF may also utilize them, either directly or indirectly, through the granting of licences to its subsidiaries or to third parties.

INGV enters into the Contract with a view to using the Results for INGV's Own Requirements and/or as part of its development activities carried out in partnership, either directly or indirectly, through the granting of licences to its subsidiaries or to third parties.

The Parties agree that the development activities carried out in partnership, and the granting of licences referred to in the previous paragraph must ensure that EDF's key industrial interests are protected.

Before the end of the Contract, the Parties will hold discussions with a view to drawing up a joint strategy for the granting of licences. These discussions will establish the general



conditions under which licensees will be sought and negotiations carried out with them (including the scope, the geographical areas covered, the quantitative targets expected, exclusivity, remuneration, and patents for improvements, etc).

Negotiations with any possible licensees will be carried out by one or other of the Parties based on a joint strategy. In the case of an exclusive licence, the Contract must be signed by both Parties and the licensee.

The Parties agree that they will keep one another mutually informed of progress with their commercial activities and negotiations. In particular, the Parties will seek to avoid a situation arising in which a particular sector is not exploited due to the agreements concluded between them.

Whenever a licensing agreement is concluded, each Party agrees to inform the other Party in writing of the identity of the licensee in addition to the conditions of this agreement.

9.4.2 Direct exploitation by the Parties

Any study activities or services benefiting third parties, any sale of equipment or products involving the application of the Results (whether patented or otherwise) or of the Contract carried out by one or other of the Parties, will not lead to the payment of fees to the other Party.

9.4.3 The granting of licences

9.4.3.1 Exploitation for the Parties' Own Requirements - Direct exploitation.

INGV grants EDF a free and non-exclusive exploitation licence for the patents and Results derived from the Contract, of which it is the owner or joint owner. This licence is restricted to satisfying EDF's Own Requirements and to direct exploitation by EDF itself or by any supplier or subcontractor of its choice.

EDF grants INGV a free and non-exclusive exploitation licence for the patents and Results derived from the Contract, of which it is the owner or joint owner. This licence is restricted to satisfying INGV's Own Requirements and to direct exploitation by INGV itself or by any supplier or subcontractor of its choice

9.4.3.2 Utilization via the granting of licences

Within the scope of the consultation between the Parties as detailed in article 9.4.1, the Parties may utilize the Results of the Research Programme through the granting of licences.

The Parties mutually grant one another a non-exclusive licence with sublicensing rights, for the patents and Results derived from the Contract, and of which they are the owners or joint owners, this being limited to these utilization operations.

The net revenue from these licensing Contracts received by one or other of the Parties (in other words following the deduction of the actual conclusion, administration and exploitation costs, which is estimated at a fixed sum of 15% of the gross revenue) will be shared between the Parties based on the following proportion: 79 % for EDF and 21 % for INGV, these representing the percentage of the total contribution made by each Party as defined in article 4 and in the financial appendix.

9.4.3.3 Payment terms

The Party carrying out exploitation will supply the other Party (at the latest by April 30 in the event of indirect exploitation) with a detailed list of the commercial operations carried out and of the revenue received for the calendar year gone by.

This list, which will be accompanied by a calculation of the sums owed, is sent to the other Party in order that the latter may issue the corresponding invoices as early as possible.

The payments will be made to the organisation name and address shown on the invoices issued.

ARTICLE 10 – OBLIGATIONS AND RESPONSIBILITIES

The Parties guarantee that they will cooperate fully with one another and agree to devote all of the care and attention necessary to the performance of the Research Programme. They also agree to supply one another mutually with any information that may help with the performance of the Research Programme.

Each of the Parties is liable as per the terms of common law for any losses of any kind which may be caused as a result of its facilities, its equipment, its staff or of the instructions given to the other Party's staff, which may be caused to the other Party's staff, to those of third parties, to its own staff, to the belongings of the other Party or to those of third parties and to its own belongings.

Each of the Parties is liable for the safety of its facilities. Consequently, staff from either Party on secondment at the other Party's premises must conform to the safety instructions given to them, with each of the Parties bearing liability in accordance with the conditions of common law for any consequences which may result from a failure to observe the said instructions by its staff.

The Party having seconded members of its staff retains all of the employer's prerogatives vis-à-vis the staff, and in particular is responsible for organising the individual's work, for inspecting and monitoring him/her, and for handling staff disciplinary issues.

Each Party declares that any use which it makes of the knowledge or of the Results derived from the Research Programme will be carried out at its sole liability. It therefore undertakes that it will not seek to have the other Party considered liable regarding any consequences which may result from such use. Each Party agrees to ensure that the present renunciation is binding upon its insurers.

No liability will be borne by either of the Parties in the event of a failure to perform (or delays in performing) any obligations resulting from the present Contract if this non-performance or late performance is the result of an act of God or a case of force majeure.

ARTICLE 11: ACCESS TO EDF SITES. SAFETY AND I.T. RESOURCES

11.1 Site access

Access to the buildings and sites belonging to EDF- R&D is subject to authorisation.

This authorisation is granted to INGV's staff for the performance of the Contract, on condition that the following measures are implemented:



- Before the start of the services, INGV must put forward a list of staff assigned to work under its responsibility on EDF's premises, for EDF's approval (in order that passes may be issued) in addition to a possible list of replacements
- This request for information may not constitute interference by EDF in the performance of the Contract. INGV is responsible for the accuracy of the information which it supplies to EDF, and may not put forward any complaints or claims, particularly concerning wasted journeys, if such requirements have not been observed.

11.2 Hygiene and safety

If the work on EDF- R&D's premises exceeds 400 hours over a period equal at the most to 12 months, or if it poses a risk for the INGV staff, a Safety Plan is drawn up before any secondment placement begins, conforming to the provisions of decree number 92-158 of February 20, 1992.

To this end, the manager appointed by INGV will contact the EDF correspondent referred to in article 6 in order to jointly draw up the said Safety Plan.

When the Safety Plan is signed by each of the Parties, the Safety Plan then becomes a constituent part of the Contract, as an appendix to the Contract.

INGV agrees that it will not send the staff assigned to perform the tasks covered by the Contract to the EDF site until the Safety Plan has been signed.

A failure to observe the requirements of the previous paragraph will be considered as gross negligence, and EDF then reserves the right to terminate the Contract with no prior notice.

This cancellation will not result in any entitlement to compensation for INGV, while EDF reserves the right to seek compensation for the losses suffered by it, and to undertake legal action.

11.3 IT resources

If necessary, INGV may have access to the EDF-R&D network, to the common IT resources, i.e. access to the mainframe computers, general servers and access servers to the Internet network provided by EDF's IT department, and to the microcomputing resources (local network and server).

As such, the usage and access rights which will be granted to it are considered personal and non-transferable. Moreover, these rights are limited to work covered by the Contract, and to the performance period for which EDF has granted access to the said IT resources. Consequently, INGV agrees that it will only use its access rights to carry out those actions planned within the scope of its mission.

INGV agrees to inform EDF as soon as possible of any anomaly noted which may lead one to believe that INGV's access rights are being used in an unwarranted manner.

INGV agrees to manage its passwords prudently (these should have six characters, should be non-trivial in nature, confidential, and changed regularly), to complete its sessions correctly and close these sessions in the event of momentary absence.

INGV may not attempt to explore the systems nor introduce any media of doubtful origin which may contain computer viruses.

INGV may only use the network to access those resources and services with which it is authorised to work, and must not attempt to explore the networks, to intercept frames or to read routing tables, etc.

All of these activities are forbidden and are legally punishable.

INGV is informed that the resources made available to it are professional IT resources which must only be used as such: in particular, the messaging services are non-confidential and must not be used to convey messages of a political or religious nature, and more generally any messages unrelated to the professional activities provided for in the Contract.

INGV acknowledges that it is fully aware of the Godfrain law (law number 88-19 of January 5, 1988) concerning computer fraud, which punishes attempts at intrusion and infringement of the confidentiality and integrity of data and systems, by forbidding:

- Fraudulent access to, and presence in IT systems
- The deliberate and unauthorised reception of data
- The destruction or deterioration of data

Failure to observe the stipulations detailed in the previous section will be considered as gross misconduct, leading to the immediate cancellation of the Contract and the launch of legal action.

ARTICLE 12 - TERM

The Contract comes into force on the date on which it is signed by the Parties.

It takes effect on June 2018.

Its duration will be 30 months as from this date, up until *December, 2020*.

As a waiver to this general "duration" clause, the provisions of articles 7, 8 and 9 will remain applicable following the expiry of the present Contract :

- Concerning confidentiality, for as long as the Confidential Information has not entered the public domain;
- Concerning publications, for a period of five (5) years;
- Concerning the ownership and exploitation of the Results, for as long as a title or right concerning intellectual property related to the Results of the present Contract exists;
- for a minimum duration of 5 years concerning those Results which are not protectable by an instrument of title (know-how, software)



1.1 ARTICLE 13 - CANCELLATION

Each Party reserves the right to cancel the Contract in the event of the other party being subject to judicial settlement or compulsory liquidation of its assets, unless the official receiver decides otherwise.

Each Party also reserves the right to cancel the Contract in the event of a merger, dissolution or change of control in the other Party's company capital.

The Contract may be automatically cancelled with no legal formalities required, by either of the Parties in the event of a failure by the other to perform one or several of the obligations contained in the various clauses. This cancellation will only become effective one (1) month following the sending of a registered letter by the plaintiff Party, with proof of receipt, explaining the grounds for the complaint, unless during this period the defaulting Party has satisfied its obligations or has provided proof of an impediment following a case of force majeure. The use of this cancellation option does not release the defaulting Party from the requirement to fulfil the Contractual obligations up to the date on which cancellation takes effect, subject to any claim for damages suffered by the plaintiff Party due to the early cancellation of the Contract.

Each of the Parties may automatically and immediately cancel the present Contract in the case of gross negligence by the other Party. The wronged Party should inform the other of the cancellation by registered letter with proof of receipt.

In the event that the cancellation modifies the division of the Parties' contributions, the fee share clauses detailed in article 9 will remain valid subject to a readjustment corresponding to the relative proportions of the Parties' contributions.

1.2 ARTICLE 14 - DISPUTES

1.3 14.1. Amicable settlement

In the event of a disagreement arising between the Parties concerning the interpretation or performance of the Contract and all related matters, during the lifetime of the Contract or at the time of cancellation, the Parties agree to meet and to do everything possible in order to resolve the dispute.

Should an agreement not be forthcoming within a period of thirty (30) calendar days as from the start of negotiations, the said negotiations will be considered to have failed and each of the Parties may then refer the matter to the courts in accordance with the conditions detailed in article 14.2 below

Proof of the start of negotiations may only be provided via the drafting of meeting minutes drawn up in duplicate, duly signed by the representatives of the two Parties.

1.4 14.2. Attribution of legal competence

In the event of the failure of negotiations mentioned in article 14.1, the dispute will be brought before the competent courts of Paris.

Signed at

with two original copies

On



For EDF

For INGV

(First name, Last name and job title of the signatory)
job title of the signatory)

(First name, Last name and



Technical and Financial Appendices

1/ Technical appendix

2 MOTIVATION

To assess site-specific ground motion it is common practice to calculate seismic hazard at bedrock and then multiply it by a deterministic site-amplification factor typically computed from 1D numerical simulation. For this reason, the ground motion at bedrock should be free from amplification phenomena and its site response flat. Ground Motion Prediction Equations are generally calibrated using records at stations classified as rock that, however, can be affected by site-effects, caused by peculiar morphological/stratigraphic features.

The assumption currently made that GMPE-based rock site predictions are unaffected by amplification phenomena may cause inaccurate prediction of the expected motion when the hazard is evaluated including site effects, due to the amplified response of the rock motion.

The aim of the present collaboration is therefore to improve the strategy for reference rock sites identification and for reference ground motion prediction.

3 GENERAL OBJECTIVES

- To propose a methodology to identify reference rock sites;
- To define geological, geotechnical and seismological proxies for recognizing reference rock sites;
- To compare the reference rock sites characteristics in active regions (Italy) and moderate activity regions (France) ;
- To calibrate ground motion models (GMPEs) for reference rock sites, possibly for response and Fourier spectra.

4 WORKING PROGRAM

4.1 Introduction

To evaluate the response of specific soils, empirical approaches, based on Ground Motion Prediction Equations (GMPEs), generally define the reference ground motion, i.e. the ground motion recorded at stations unaffected by site-effects, such that their amplification functions could be assumed flat with amplitude equal to one. In practice, this behavior is associated to the generic rock condition, usually identified only through the $V_{S,30}$ exceeding a given threshold. (e.g. Seismic Codes), which, for the European standards, should exceed 800 m/s (soil category EC8-A). Nevertheless, this assumption does not imply that the ground-motion recorded at sites is completely unaffected by amplification.

However, this assumption may cause inaccurate prediction of the expected motion when hazard is evaluated including site effects, due to the amplified response of the rock motion.

Indeed it has been recently shown that several recording stations belonging to the EC8-A soil category are affected by relevant site effects (e. g. Felicetta et al., 2018).

The identification of reference rock sites, where the amplification response is expected to be negligible, would be of great help to avoid this ambiguity in the predictions.

4.2 Proxies for reference rock sites

The Italian strong motion data will be exploited to propose proxies and to explore their efficiency in recognition of reference rock sites. These proxies will be defined according three different sources of information:

- **Seismological analysis:** horizontal-to-vertical spectral ratios on seismic noise and signals; estimation of high frequency decay (kappa parameter); amplification functions inferred from GIT (Generalized Inversions Technique); residual decomposition with respect to Ground Motion Prediction Equations for generic rock sites; tomographies
- **Geotechnical information:** shear wave velocity profile.
- **Geological information:** geological maps at different scales.

The results will be used to group the Italian sites in clusters as function of different proxies.

4.3 Reference rock GMPE

Once Italian reference rock sites have been identified, a "reference rock" training GMPE will be calibrated using data recorded on these sites. This GMPE will be used to compute residuals (as the difference between the predicted and the observed ground motion) for other European stations, and in particular for the French stations.

In this phase it will be possible to take advantage of the French ground motion database (RAP-RESIF 1995-2016 collected and processed by EDF and CEA teams), of the recent improvements in French and station characterizations (coordinated by CEA team) and the ongoing Generalized Inversions for French sites (EDF and CEA teams) to perform residual analyses and rock sites behavior analyses.

French rock sites show in average larger shear-wave velocities than Italian rock sites. Comparisons among the response of these different conditions will be carried out and a general rock GMPE will be calibrated integrating a larger dataset of rock sites.

As described above, the newly determined European reference rock GMPE is destined to be used in several different applications including:

- host-to-target adjustments of the ground motion
- incorporation of the site response for site-specific ground motion predictions (evaluated using both, the empirical approach or analytical/numerical simulations)
- simulations of spectrum-compatible acceleration time histories for site response analysis from the bedrock to the surface
- ...

Although these applications are out of the scope of the present work, great simplifications and enhanced coherence among the different components of these downstream applications would be ensured if the rock GMPE could be determined for both, the response spectrum and the Fourier domains. The derivation of the reference rock GMPE in the Fourier domain still needs careful reflections and analyses to determine the most appropriate data processing modalities and GMPE construction scheme.

4.4 Logistics, deliverables and planning

The main tasks to carry out the proposed work are the following:

1. Methodological : develop a methodology to identify reference rock sites (proxy definition and needed information)
2. Test and application of the methodology to the rich Italian dataset → calibration of a "training" GMPE
3. Application of the validated methodology to the French sites – residual analysis of identified French reference rock sites with respect to the training GMPE
4. Comparison of French and Italian reference rock sites behavior → calibration of a "European" reference rock GMPE.
5. Determination of the most appropriate data processing modalities and Fourier domain GMPE determination.

Deliverables:

- Deliverable D1: Definition and performance of proxies to identify the reference rock sites in Italy (including GMPEs calibration);
- Deliverable D2: Identification of reference rock site in France and update of reference ground motion model
- Deliverable D3: Definition of appropriate data processing modalities for the construction of a Fourier domain ground motion model (if feasible: ground motion model in the Fourier domain)

The following table summarizes the main tasks and deliverables:

Tasks and deliverables	Time schedule
Start meeting (deliverable : minutes of the meeting)	June, 2018
Progress meeting (deliverable : minutes of the meeting)	December, 2018
D1. Performance of proxies to identify the reference rock sites in Italy (the participation and presentation of these results to the SIGMA2 Scientific Committee meeting can represent such a deliverable; otherwise a draft document describing the results will constitute the deliverable)	June 2019
Either, the minutes of the progress meeting, or the participation and presentation of the results to the SIGMA2 Scientific Committee meeting can constitute deliverable	December 2019
D2. Report on the update of the reference ground motion model (SIGMA2 project deliverable with presentation).	June, 2020
D3. Either, final report (SIGMA2 project deliverable with presentation), including the construction of a Fourier domain model (if feasible), or draft manuscript for publication of the results in a scientific journal.	December 2020

2/ Financial appendix

All values are ex VAT, expressed in euros, and covering the total lifetime of the contract.

The "cash" contribution from EDF is 75 000 €

Detailed labour table:

PARTNER	INGV				EDF			
DESCRIPTION (details to be provided on a batch-by-batch or phase-by-phase basis)	<u>Qualification level of the person involved</u>	<u>Number of days</u>	<u>Approximate hourly cost in euros (ex VAT)</u>	<u>Fixed sum in euros (ex VAT)</u>	<u>Qualification level of the person involved</u>	<u>Number of days</u>	<u>Approximate hourly cost in euros (ex VAT)</u>	<u>Fixed sum in euros (ex VAT)</u>
DELIVERABLE D1	<u>Post-doctoral Researcher</u>	<u>200</u>	<u>17.857</u>	<u>25000</u>	<u>PhD, GF 14 NR 240</u>	<u>7</u>	<u>70</u>	<u>3430</u>
DELIVERABLE D2	<u>Post-doctoral Researcher</u>	<u>200</u>	<u>17.857</u>	<u>25000</u>	<u>PhD, GF 14 NR 240</u>	<u>20</u>	<u>70</u>	<u>9800</u>
DELIVERABLE D3	<u>Post-doctoral Researcher</u>	<u>80</u>	<u>17.857</u>	<u>10000</u>	<u>PhD, GF 14 NR 240</u>	<u>5</u>	<u>70</u>	<u>2450</u>
SUBTOTAL FOR LABOUR		480		60000		18		15680

Summary table:

Item of expenditure or income	Cost prices in euros (ex VAT)
Expenditure specific to EDF	
Labour	15 680
Purchases	
Taxes	
Depreciation	
Test resources	
Transport and travel	3 000
Other	
Payments from EDF--> INGV	75 000
TOTAL expenditure (D1)	93 680
Income	
Payments from INGV --> EDF	0
TOTAL income (R1)	0
TOTAL contribution EDF $F1=D1-R1$	93 680
Expenditure specific to INGV	
Labour	60 000
Indirect costs	10 000
Transport and travel	5 000
Co-financing (INGV staff labour and overheads)	25 000
Payments from INGV-->EDF	0
TOTAL expenditure (D2)	100 000
Income	
Payments from EDF--> INGV	75 000
TOTAL income (R2)	75 000
TOTAL contribution INGV $F2=D2-R2$	25 000
Overall cost of the programme $C=F1+F2$	118 680
Percentage of financing paid for by EDF $P1=F1/C$	79 %
Percentage of financing paid for by INGV $P2=F2/C$	21 %

3/ Schedule

Type of deliverable*	Submission date of the deliverable	Value of the corresponding payment
Start meeting (deliverable : minutes of the meeting)	June, 2018	20 000
Progress meeting (deliverable : minutes of the meeting)	December, 2018	10 000
D1. Performance of proxies to identify the reference rock sites in Italy (the participation and presentation of these results to the SIGMA2 Scientific Committee meeting can represent such a deliverable; otherwise a draft document describing the results will constitute the deliverable)	June 2019	10 000
Either, the minutes of the progress meeting, or the participation and presentation of the results to the SIGMA2 Scientific Committee meeting can constitute deliverable	December 2019	10 000
D2. Report on the update of the reference ground motion model (SIGMA2 project deliverable with presentation.	June, 2020	10 000
D3. Either, final report (SIGMA2 project deliverable with presentation, or draft manuscript for publication of the results in a scientific journal (), including the construction of a Fourier domain model (if feasible).	December 2020	15 000



6 LIST OF PRIOR KNOWLEDGE

This is a non-exhaustive list, which should be updated throughout the lifetime of the Contract

- 1 - **The Prior Knowledge of the parties**, made available for the performance of the Contract and the use of the Results from the Contract.

1.1 EDF's Prior Knowledge:

EDF possesses considerable know-how in the field of seismic hazard and more particularly in that of ground motion characterization, EDF through recent research and development programmes has collected and implemented ground motion databases, in particular the French ground motion database (RAP-RESIF 1995-2016 collected and processed by EDF and CEA teams), has participated to recent station characterization campaigns (coordinated by CEA team) and has been performing Generalized Inversions for French ground motion with particular interest on the site term (EDF and CEA teams).

1.2 INGV's Prior Knowledge:

INGV possesses worldwide recognised know-how in the field of engineering seismology, seismic hazard and seismic risk and more particularly in that of seismic ground motion characterization.

More particularly INGV has an extremely reach and long experience in seismological data recording, manipulation and processing.

INGV is also worldwide recognized for the calibration of empirical ground motion prediction models.

