

**Amendment no 2**  
**to the Thematic Core Services Anthropogenic Hazard Consortium Agreement**

between

1. **Istituto Nazionale di Geofisica e Vulcanologia**, based in via di Vigna Murata 605, 00143 Rome, Italy, represented by xxxxxx, xxxxxx, hereinafter referred to as “INGV”;
2. **Centre national de la recherche scientifique**, established in 3 rue Michel-Ange, Paris 75794, France, intracommunity VAT identification number FR40180089013, represented by its xxxx, xxxxx, who has delegated his signing authority for this Consortium agreement xxxxx, xxxxx, hereinafter referred to as “CNRS”;

The CNRS is acting in the name and on behalf of the National Institute for Earth Sciences and Astronomy (INSU),

CNRS authorized by Université Grenoble Alpes (UGA), Université Savoie Mont-Blanc, Institut pour la Recherche et le Développement (IRD) and Institut Français des Sciences et Technologies des Transports de l’Aménagement et des Réseaux (IFFSTTAR), is acting on behalf of ISTERRE LABORATORY -UMR5275 (Joint Research Unit), xxxxx by xxxxx, hereafter referred to as the “ISTERRE LABORATORY”;

CNRS, authorized by Université de Strasbourg, is acting in the name and on behalf of the joint research unit, Institut de Physique du Globe de Strasbourg –UMR7516, xxxxx by xxxxx, hereafter referred to as « IPGS LABORATORY »"

3. **Helmholtz Zentrum Potsdam Deutsches GeoForschungsZentrum**, based in Telegrafenberg, 14473, Potsdam, Germany, represented by xxxxx - xxxxx and xxxxx–xxxxx, hereinafter referred to as “GFZ”;
4. **Institute of Geophysics Polish Academy of Sciences** [Instytut Geofizyki Polskiej Akademii Nauk] based in Warsaw, ul. Księcia Janusza 64, 01-452 Warsaw, represented by xxxxx – xxxxx, hereinafter referred to as “IG PAS”;
5. **L’Institut National de l’Environnement et des Risques**, Public entity of an industrial and commercial nature, established at Verneuil-en-Halatte – 60550 France, Parc Technologique ALATA - B.P. n° 2, represented by xxxxx, duly authorised in his capacity as xxxxx,

- hereinafter referred to as “INERIS”;
6. **Geofyzikalni Ustav AV CR**, based in Bocni II No. 14131 Praha 4, Czech Republic, represented by Dr. Aleš Špičák – Director, hereinafter referred to as “IG ASCR”;
  7. **Oulun Yliopisto**, based in Pentti Kaiteran Katu 1 90014 Oulu, Finland, represented by xxxxx – xxxxx, hereinafter referred to as “OULU”;
  8. **Lulea Tekniska Universitet**, based in 97187 Lulea, Sweden, represented by xxxxx – xxxxx and xxxxx – xxxxx,; hereinafter referred to as “LTU”;
  9. **University of Keele**, a university established by the University of Keele Act 1962 (10 & 11 Eliz. 2 Ch Xv) and the granting of a Royal Charter in 1962, of Keele, based in Staffordshire, ST55BG, United Kingdom, represented by xxxxx, xxxxxx, hereinafter referred to as “KU”;
  10. **University of Science and Technology – Academic Computer Centre Cyfronet**, [Akademia Górniczo-Hutnicza im. Stanisława Staszica w Krakowie - Akademickie Centrum Komputerowe Cyfronet] based in Cracow, ul. Nawojki 11, 30-950 Cracow, Poland, represented by xxxxx– xxxxx, hereinafter referred to as “ACK UST”;
  11. **Central Mining Institute** [Główny Instytut Górnictwa], based in Katowice, Plac Gwarków 1, 40-166 Katowice, Poland, registered in the Trade Register kept by the District Court Katowice-Wschód, VIII Commercial Division of the National Court Register, under the number KRS0000090660 using tax identification number: NIP 634-012-60-16, REGON: 000023461, represented by xxxxx – xxxxx, hereinafter referred to as “CMI”;
  12. **Polish Mining Group [Polska Grupa Górnicza S.A.]**, based in Katowice, ul. Powstańców 30, 40-039 Katowice, Poland, registered in the Trade Register kept by the District Court Katowice-Wschód, VIII Commercial Division of the National Court Register, under the number KRS0000709363 using tax identification number: NIP 634-283-47-28, REGON: 360615984, with a fully paid-up share capital in the amount of [REDACTED], represented jointly by xxxxx– xxxxx and xxxxx – xxxxxx, hereinafter referred to as “PMG”;

13. **Drobot Poplawski Przybyłowicz Liszka-Gronek Radcowie Prawni Spółka Partnerska**, based in Kraków, ul. Smoleńsk 29, 31-112 Kraków, Poland, registered in the Trade Register kept by the District Court Kraków-Śródmieście, XI Commercial Division of the National Court Register, under the number KRS 0000303857 using tax identification number: NIP 6772309752, REGON: 120677497, represented by xxxxxx – xxxxxx, hereinafter referred to as “DPPL LEGAL”;
14. **Wroclaw University of Environmental and Life Science**, based in Wrocław, ul. Norwida 25, 50-375 Wrocław, Poland, represented by: xxxxxx – xxxxxx, hereinafter referred to as “WUELS”;

as member organizations of the Thematic Core Services Anthropogenic Hazard Consortium (TCS AH Consortium), also referred to as “Party” or “Parties” or “Members”

**WHEREAS**, Article 14 of the TCS AH Consortium Agreement permits the Consortium Agreement to be amended by an instrument in writing signed by the Parties; and

**WHEREAS**, based on the past experience of mutual cooperation within the TCS AH Consortium and in order to further improve it, the Parties agree to amend the Consortium Agreement and have determined to enter into this written Amendment;

**NOW, THEREFORE**, the TCS Consortium Agreement is now amended as follows:

## § 1

1. The Parties agree to Amend Article 1.1 as follows:

### *“1.1 Admission*

*Admission of a new member to the TCS AH Consortium requires decision of the Consortium Board made with qualified majority, qualified quorum required and an amendment to the Work programme (Annex 2). CB shall modify Annex 2 in accordance with the regulations set up in Annex 1.*

*The terms of admission to the TCS AH Consortium are negotiated with a candidate for a new member by the Consortium Board.*

*The admission of a new member to the TCS AH Consortium and the related change in the Annex 2 to the Consortium Agreement shall enter into force on the day of signing of declaration of acceptance hereof (including the amended Annex 2) by the new Party or on the date of the CB's*

*decision to admit the new Party (depending on which of these actions occurs later)."*

2. The Parties decide that the Organisations admitted after the entry into force of the present Amendment No. 2 shall be identified in the Extended list of members attached as Annex No. 5 to the Consortium Agreement,

## **§ 2**

The Parties agree to add the following **Article 4.8 after the Article 4.7:**

*"4.8 Modifications to organization of TCS AH Consortium:*

*The modifications to organisation of TCS AH Consortium as regulated in article 4 hereof requires decision of the Consortium Board adopted by unanimity of all CB members present at the meeting with special quorum requirement fulfilled. CB shall modify Annex 1 accordingly to align with the adopted amendments to Article 4. Such modifications do not constitute modifications hereof with the proviso that in matters having financial consequences for the Parties subsequent ratification by the Parties is required."*

## **§3**

The Parties agree to add the following **Article 4a after the Article 4:**

*"Article 4a: Associate Member*

*The Consortium Board may decide to admit an organization, which can contribute to the achievement of the Consortium's mission to the Consortium as an Associate Member.*

*An organisation established in a country which is not a member of the European Union may become an Associate Member*

*The decision of the Consortium Board on admission of an Associate Member shall be made with qualified majority (special quorum required). The decision of the Consortium Board does not require ratification by the Parties to the Agreement.*

*The Associate Member shall assign a representative in the Consortium Board. The representative shall be entitled to participate in CB meetings in an advisory capacity only, in particular to propose draft resolutions.*

*The plan of tasks of the Associate Member shall be included in the Annual Work programme, regulated in Article 5 below."*

## **§ 4**

**The consolidated text of the TCS AH Consortium Agreement**, which incorporates all of the changes enacted by this Amendment, is attached as Attachment 1 hereto.

## § 5

1. The Parties decide to admit **Wroclaw University of Environmental and Life Science (WUELS)** as a new Party to the TCS AH Consortium to which WUELS consents.
2. WUELS offers to commit its resources to the work of the TCS AH Consortium by providing access to the GNSS (Global Navigation Satellite System) Data Research Infrastructure Centre and the GGOS-PL (Global Geodetic Observing System) and Satellite Data Research Infrastructure Center and 3D GIS service infrastructure to be applied in order to enhance the use of EPISODES provided by other Parties and by providing (together with other Parties) the following Episodes:
  - MUSE-1.1 – PIAST-ZIEMOWIT; ZIEMOWIT: underground coal mining;
  - MUSE-1.2 – RUDA- BIELSZOWICE: underground coal mining;
  - MUSE-2 - ROW-RYDUŁTOWY: underground coal mining,to which the other Parties consent and decide to amend the Annex 2 to the TCS AH Consortium Agreement correspondingly (Attachment no 1 hereto).

## § 6

1. Other provisions of the TCS AH Consortium Agreement remain unchanged.
2. This Amendment to the TCS AH Consortium Agreement shall come into force on the last date of signature by the Parties, hereafter the “Effective Date”.

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Istituto Nazionale di Geofisica e Vulcanologia,**

via di Vigna Murata 605, 00143 Rome, Italy,

**Signature**\_\_\_\_\_ **Date of signature: 14/07/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Centre national de la recherche scientifique**

3 rue Michel-Ange, Paris 75794, France,

Signature \_\_\_\_\_

**Date of signature: 24/1/2024**

Name of the signing person:

Position in the organization:

**SIGNATURES on Amendment no 2 to TCS AH Consortium Agreement:**

**Helmholtz Zentrum Potsdam Deutsches Geoforschungszentrum,**

Telegrafenberg, 14473, Potsdam, Germany,

**Signature\_\_\_\_\_ Date of signature: 21/08/2023**

Name of the signing person:

Position in the organization:

**Signature\_\_\_\_\_ Date of signature: 21/08/2023**

Name of the signing person:

Position in the organization:



**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Institute of Geophysics Polish Academy of Sciences [Instytut Geofizyki  
Polskiej Akademii Nauk]**

Warsaw, ul. Księcia Janusza 64, 01-452 Warsaw

**Signature** \_\_\_\_\_ **Date of signature: 21/07/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Institut National de l'Environnement industriel et des RISques,  
[INERIS]**

Parc Technologique ALATA - B.P. n° 2 Verneuil-en-Halatte – 60550 France,

**Signature \_\_\_\_\_ Date of signature: 28/11/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Geofyzikalni Ustav AV CR,**

Bocni II No. 14131 Praha 4, Czech Republic,

**Signature**\_\_\_\_\_

**Date of signature: 07/07/2023**

Name of the signing person: **Dr. Aleš Špičák**

Position in the organization: **Director**

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Oulun Yliopisto**

Pentti Kaiteran Katu 1 90014 Oulu, Finland

**Signature**\_\_\_\_\_ **Date of signature: 07/07/2023**

Name of the signing person:

Position in the organization:

**Signature**\_\_\_\_\_ **Date of signature: 05/07/2023**

Name of the signing person:

Position in the organization:

**SIGNATURES on Amendment no 2 to TCS AH Consortium Agreement:**

**Lulea Tekniska Universitet**

97187 Lulea, Sweden

**Signature** \_\_\_\_\_ **Date of signature: 08/12/2023**

Name of the signing person:

Position in the organization:

**Signature** \_\_\_\_\_ **Date of signature: 07/12/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**University of Keele**

Staffordshire, ST55BG, United Kingdom,

**Signature** \_\_\_\_\_ **Date of signature: 11/07/2023**

Name of the signing person:

Position in the organization:

**SIGNATURES on Amendment no 2 to TCS AH Consortium Agreement:**

**University of Science and Technology – Academic Computer Centre  
Cyfronet, AGH-UST [Akademia Górniczo-Hutnicza im. Stanisława  
Staszica w Krakowie - Akademickie Centrum Komputerowe Cyfronet]**

Cracow, ul. Nawojki 11, 30-950 Cracow, Poland,

**Signature** \_\_\_\_\_ **Date of signature: 24/08/2023**

Name of the signing person:

Position in the organization:

**Signature** \_\_\_\_\_ **Date of signature: 27/07/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Central Mining Institute [Główny Instytut Górnictwa]**

Katowice, plac Gwarków 1, 40-166 Katowice, Poland,

**Signature**\_\_\_\_\_ **Date of signature: 24/07/2023**

Name of the signing person:

Position in the organization:



**SIGNATURES on Amendment no 2 to TCS AH Consortium Agreement:**

**Polish Mining Group [Polska Grupa Górnicza S.A.]**

Katowice, ul. Powstańców 30, 40-039 Katowice, Poland

**Signature** \_\_\_\_\_ **Date of signature: 26/10/2023**

Name of the signing person:

Position in the organization:

**Signature** \_\_\_\_\_ **Date of signature: 26/10/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Drobot Popławski Przybyłowicz Liszka-Gronek Radcowie Prawni  
Spółka Partnerska,**

Kraków, ul. Smoleńsk 29, 31-112 Kraków, Poland,

\_\_\_\_\_ **Date of signature: 19/07/2023**

Name of the signing person:

Position in the organization:

**SIGNATURE on Amendment no 2 to TCS AH Consortium Agreement:**

**Wroclaw University of Environmental and Life Science,**

Wrocław, ul. Norwida 25, 50-375 Wrocław, Poland,

**Signature**\_\_\_\_\_ **Date of signature: 20/07/2023**

Name of the signing person:

Position in the organization:

**APPENDIX no 1 to the Amendment of the TCS AH CA**

**Thematic Core Services Anthropogenic Hazard Consortium Agreement  
for the Construction and Operation of the EPOS Research Infrastructure  
CONSOLIDATED TEXT**

between

1. **Istituto Nazionale di Geofisica e Vulcanologia**, based in via di Vigna Murata 605, 00143 Rome, Italy, represented by xxxxxx , xxxxxx, hereinafter referred to as “INGV”;
2. **Centre national de la recherche scientifique**, established in 3 rue Michel-Ange, Paris 75794, France, intracommunity VAT identification number FR40180089013, represented by its xxxxxx, xxxxxx, who has delegated his signing authority for this Consortium agreement to the Regional Representative of the xxxxxxx, xxxxxx, hereinafter referred to as “CNRS”;

The CNRS is acting in the name and on behalf of the National Institute for Earth Sciences and Astronomy (INSU),

CNRS authorized by Université Grenoble Alpes (UGA), Université Savoie Mont-Blanc, Institut pour la Recherche et le Développement (IRD) and Institut Français des Sciences et Technologies des Transports de l’Aménagement et des Réseaux (IFFSTTAR), is acting on behalf of ISTERre LABORATORY -UMR5275 (Joint Research Unit), directed by xxxxxx, hereafter referred to as the “ISTERre LABORATORY”;

CNRS, authorized by Université de Strasbourg, is acting in the name and on behalf of the joint research unit, Institut de Physique du Globe de Strasbourg –UMR7516, directed by xxxxxx, hereafter referred to as « IPGS LABORATORY »"

3. **Helmholtz Zentrum Potsdam Deutsches GeoForschungsZentrum**, based in Telegrafenberg, 14473, Potsdam, Germany, represented by xxxxxx - xxxxxx and xxxxxx – xxxxxx, hereinafter referred to as “GFZ”;
4. **Institute of Geophysics Polish Academy of Sciences** [Instytut Geofizyki Polskiej Akademii Nauk] based in Warsaw, ul. Księcia Janusza 64, 01-452 Warsaw, represented by xxxxxx – xxxxxx, hereinafter referred to as “IG PAS”;

5. **L'Institut National de l'Environnement et des Risques**, Public entity of an industrial and commercial nature, established at Verneuil-en-Halatte – 60550 France, Parc Technologique ALATA - B.P. n° 2, represented by xxxxx, duly authorised in his capacity as xxxxx, hereinafter referred to as “INERIS”;
6. **Geofyzikalni Ustav AV CR**, based in Bocni II No. 14131 Praha 4, Czech Republic, represented by Dr. Aleš Špičák – Director, hereinafter referred to as “IG ASCR”;
7. **Oulun Yliopisto**, based in Pentti Kaiteran Katu 1 90014 Oulu, Finland, represented by xxxxx – xxxxx, hereinafter referred to as “OULU”;
8. **Lulea Tekniska Universitet**, based in 97187 Lulea, Sweden, represented by xxxxx – xxxxx, hereinafter referred to as “LTU”;
9. **University of Keele**, a university established by the University of Keele Act 1962 (10 & 11 Eliz. 2 Ch Xv) and the granting of a Royal Charter in 1962, of Keele, based in Staffordshire, ST55BG, United Kingdom, represented by xxxxx, xxxxx, hereinafter referred to as “KU”;
10. **University of Science and Technology – Academic Computer Centre Cyfronet**, [Akademia Górniczo-Hutnicza im. Stanisława Staszica w Krakowie - Akademickie Centrum Komputerowe Cyfronet] based in Cracow, ul. Nawojki 11, 30-950 Cracow, Poland, represented by xxxxx– xxxxx, xxxxx – xxxxx, hereinafter referred to as “ACK UST”;
11. **Central Mining Institute** [Główny Instytut Górnictwa], based in Katowice, Plac Gwarków 1, 40-166 Katowice, Poland, registered in the Trade Register kept by the District Court Katowice-Wschód, VIII Commercial Division of the National Court Register, under the number KRS0000090660 using tax identification number: NIP 634-012-60-16, REGON: 000023461, represented by xxxxx– xxxxx, hereinafter referred to as “CMI”;
12. **Polish Mining Group [Polska Grupa Górnicza S.A.]**, based in Katowice, ul. Powstańców 30, 40-039 Katowice, Poland, registered in the Trade Register kept by the District Court Katowice-Wschód, VIII Commercial Division of the National Court Register, under the number KRS0000709363 using tax identification number: NIP 634-283-47-28, REGON: 360615984, with a fully paid-up share capital in the amount of

xxxxx, represented jointly by xxxxx – xxxxx – xxxxx,  
hereinafter referred to as “PMG”;

13. **Drobot Poplawski Przybyłowicz Liszka-Gronek Radcowie Prawni Spółka Partnerska**, based in Kraków, ul. Smoleńsk 29, 31-112 Kraków, Poland, registered in the Trade Register kept by the District Court Kraków-Śródmieście, XI Commercial Division of the National Court Register, under the number KRS 0000303857 using tax identification number: NIP 6772309752, REGON: 120677497,  
represented by xxxxx – xxxxx,  
hereinafter referred to as “DPPL LEGAL”

15. **Wroclaw University of Environmental and Life Science**, based in Wrocław, ul. Norwida 25, 50-375 Wrocław, Poland,  
represented by: xxxxx – xxxxx,  
hereinafter referred to as “WUELS”;

as member organizations of the Thematic Core Services Anthropogenic Hazard Consortium (TCS AH Consortium), also referred to as “Party” or “Parties” or “Members”

### **Preamble:**

Whereas the Parties to the TCS AH Consortium are providing data and services to the EPOS-ERIC in connection with anthropogenic geo - hazards, in particular those regarding the exploration and exploitation of geo-resources.

The Parties wish therefore to define their rights and obligations as part of the TCS AH Consortium in a consortium agreement, hereinafter the “Consortium Agreement or CA”

IT IS THEREFORE AGREED BETWEEN THE PARTIES AS FOLLOWS:

### **Article 0: Definitions**

“**Background**” means any data, know-how, Software or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that:

(a) is held by the Parties before they acceded to the Consortium Agreement or was generated by one of the Parties without any relation to performance of the Consortium Agreement, and  
(b) is needed to implement the action or exploit the results in relation to performance of the Consortium Agreement.

“**Consortium Board**” or “**CB**” means the decision-making body of the TCS AH Consortium.

“**EPOS**” (**European Plate Observing System**) means a long-term plan to facilitate integrated

use of data, data products, and facilities from distributed research infrastructures for solid Earth science in Europe.

“**EPOS-ERIC**” means the EPOS European Research Infrastructure Consortium, established on 8 November 2018.

“**Results**”: means any (tangible or intangible) output of the action such as data, knowledge, Software or information — whatever its form or nature, whether it can be protected or not — that is generated by the Parties after signing of the Consortium Agreement in relation to the performance hereof, as well as any rights attached to it, including intellectual property rights.

“**Software**”: means sequences of instructions to carry out a process, in, or convertible into a form executable by a computer and fixed in any tangible medium of expression.

“**Core Software**”: Software belonging to a Party prior to the entry into force of the Consortium Agreement or generated by a Party after signing of the Consortium Agreement but without any relation to the performance hereof.

“**Derived Software**”: Software developed from Core Software under the Consortium Agreement.

There are two categories of Derived Software: Adaptations and Extensions:

“**Adaptation**”: Derived Software using the same algorithms as the Core Software from which it is derived e.g. the same algorithms rewritten in another language.

“**Extension**”: Derived Software allowing for access to new functions or performance by comparison to the Core Software from which it is derived.

“**New Software**”: Software created ex nihilo under the Consortium Agreement.

“**Work programme**”: Work programme means the description of the tasks and resources of each Party for the TCS AH Consortium defined in Annex 2.

“**Annual Work programme**”: a plan of tasks of the Director and the Sections for a given calendar year, approved by the CB.

## **Article 1: Parties to this Consortium Agreement**

*Parties are organizations contributing to the TCS AH Consortium specific tasks and resources as defined in accordance to the Work programme (Annex 2).*

### **1.1 Admission**

Admission of a new member to the TCS AH Consortium requires decision of the Consortium Board made with qualified majority, qualified quorum required and an amendment to the Work programme (Annex 2). CB shall modify Annex 2 in accordance with the regulations set up in Annex 1.

The terms of admission to the TCS AH Consortium are negotiated with a candidate for a new member by the Consortium Board.

The admission of a new member to the TCS AH Consortium and the related change in the Annex 2 to the Consortium Agreement shall enter into force on the day of signing of declaration

of acceptance hereof (including the amended Annex 2) by the new Party or on the date of the CB's decision to admit the new Party (depending on which of these actions occur later).

## **1.2 Withdrawal**

Any Party may withdraw from the TCS AH Consortium upon request, provided that twelve (12) months' prior notice is given to the Consortium Board. The withdrawing Party undertakes to complete its commitments taken up to the date of its withdrawal regarding the joint activities and regarding its potential financial contribution.

The withdrawal of the Party does not constitute an amendment to the CA within the meaning of art. 14 of the CA. CB shall modify Work programme (Annex 2) in accordance with the regulations set up in Annex 1.

## **1.3 Exclusion**

In the event of negligent failure to perform any Party's duties, the Consortium Board may exclude such Party. Such a decision requires the approval of the unanimity of the Consortium Board, without the vote of the concerned representative(s).

The exclusion of the Party does not constitute an amendment to the CA within the meaning of art. 14 of the CA. CB shall modify Annex 2 in accordance with the regulations set up in Annex 1.

## **Article 2: Purpose of this Consortium Agreement**

**2.1** This Consortium Agreement sets out organizational, managerial and financial guidelines to be followed by the Members of the TCS AH Consortium in order to cooperate with EPOS ERIC.

## **Article 3: Mission of the TCS AH Consortium and commitments of the Parties**

**3.1** The mission of TCS AH is to integrate – within EPOS – the research infrastructures related to studies of geo - hazards of anthropogenic origin, in particular those caused by the exploration and exploitation of geo-resources. For this purpose, the Parties shall:

- a) maintain and develop its infrastructure resources necessary for provision of service referred to in article 3.2 hereof;
- b) maintain and develop interoperability between its infrastructure resources and the multidisciplinary e-EPOS infrastructure (hereinafter: ICS-EPOS);
- c) support international and inter-institutional cooperation in the research into the above-mentioned hazards;
- d) facilitate education and training within the above-mentioned areas;
- e) develop partnership with the industry to achieve the most complete possible synergy of science and industry;



- f) provide the industry with innovative solutions (with consideration of the regulations regarding the state aid);
- g) provide the society with accurate information about the anthropogenic geo - hazards, in particular those caused by and connected with the exploration and exploitation of geo - resources.

**3.2** The Parties of the TCS AH Consortium make best effort to ensure provision of the high-quality service (further on referred to as “the Service”) based on the integrated research infrastructure, providing international scientific community with access to unique datasets and specialized software in the field of anthropogenically induced geo - hazards providing access to:

- a) collection of episodes covering most extensively the variety of specific cases of anthropogenic geo - hazards and high-level services specific for the area of study,
- b) software services,
- c) high power cloud calculations,
- d) possibility for conducting own digital researches within digital episodes,
- e) scientifically proven information on anthropogenic geo - hazards,
- f) educational platform and source of information for non-specialists.

#### **Article 4 :Organization of TCS AH Consortium**

##### **4.1 Consortium Board (CB)**

The CB is the decision-making body of the TCS AH Consortium.

It is composed of one (1) authorized representative of each Party.

Each Party has one (1) vote.

The CB elects a chair among its members or among persons employed by either Party, hereafter referred to as the “Chair”, by two third (2/3) majority. The term of its mandate is five (5) years renewable once during the duration of the Consortium Agreement.

The Chair cannot represent a Party in the CB and has no voting right. In case one of the representatives is elected as a Chair, the said Party is obliged to assign a new representative.

The CB may also elect one or two vice-chairs, hereafter referred to as the “Vice-chair”. Vice-chair substitutes for the Chair during his absence from CB meetings and performs other tasks indicated by the Chair. If the Vice-chair substitutes for the Chair at the CB meeting, they cannot represent a Party in the CB and has no voting right. The mandate of the Vice-chair lasts for the duration of the mandate of the Chair. In matters not covered above, the provisions concerning the Chair shall apply to the Vice-chair.

The TCS AH Consortium CB's Rules of Procedure are detailed in Annex 1.

## **4.2 The Director**

The Director is the executive body. They has the overall responsibility for managing the activities decided by the CB and representing the TCS AH Consortium interests and strategy in accordance with the decisions of the CB.

The Director is elected by the CB by two-thirds (2/3) majority. The term of the mandate is five years (5) and may be renewable once.

The Director performs their tasks with the support of the Sections. The Director supervises the work of the Sections and, in agreeing with the Sections' Leaders, assigns them activities to perform. The Sections' Leaders regularly report to the Director about performance of the activities assigned to the Sections.

By the 31st January each year the Director submits to the Consortium Board a report on the TCS AH Consortium's activities in the previous year and - with the support of the Sections - prepares Annual Work Programme for the current year and submits it to the CB for approval.

The Director cannot make any legally binding decisions in the name and/or on behalf of any Party.

The Director cannot represent any Party in the Consortium Board and has no voting right. In case one of the representatives is elected as a Director, the said Party is obliged to assign a new representative.

The person selected for the position of the Director shall be able ensure the proper level of coordination of the important tasks of TCS AH Consortium, therein especially the tasks connected with the services related to in Article 3.2 hereof.

## **4.3 Sections**

The following Sections are established:

- a) Section for implementation of TCS AH Services;
- b) Section for episodes' integration and application implementation;
- c) Section for promotion and dissemination;
- d) Section for projects & partnership.
- e) Administration, law & accounting

The main tasks of these Sections are detailed in VI annex 2.

The Sections are organized by each Party within its obligations indicated in Annex 2 hereof.

The modifications to the Sections (creation, change or removal of the Section or change of its main tasks) shall be introduced by the Consortium Board considering the needs presented by the Director. Resolutions regarding the said modifications are adopted in the Work programme (Annex 2) change mode. The modification to the Sections does not constitute modification hereof.

#### **4.4 Hosting Party**

The CB shall select the Party, which will be hosting the Director. The selected Party is also responsible for organizing the Administration, law & accounting Section. The postal address of this Party is the address for correspondence addressed to the TCS AH Consortium's bodies.

Selection of the hosting organization shall be coordinated with election of the Director and the same selection procedure shall be applied. The hosting organization operate as such for the duration of the mandate of the Director with whom it was selected.

#### **4.5 The User Committee**

A User Committee shall be set up composed of main representatives of the community selected by the Consortium Board by two-thirds (2/3) majority. The term of the mandate of every member is five years (5) and may be renewable once.

CB defines the detailed rules regarding nomination of candidates for User Committee and the number of its members at the first meeting. CB is also entitled to amend the adopted regulation. The CB decides the above-mentioned issues with the 2/3 majority.

The User Committee adopts the rules of its proceeding, which shall not contradict the CB Rules of procedure.

The User Committee shall form a policy for gaining and using User feedback concerning the Service related to in Article 3.2 hereof.

The User Committee shall provide their recommendations annually to the CB.

The User Committee elects a chair among its members. The term of its mandate is five (5) years. The chair shall advice the Director. They can be invited to attend the meetings of the Consortium Board without no rights to vote.

The chair presides the User Committee meetings, convenes and organizes its meetings. The meeting may be convened on the chair's own initiative, at the request of at least 20% of the User Committee members or at the request of the Director.

The User Committee resolutions are adopted by a simple majority of votes (more votes for than against, abstentions are not taken into account) in the presence of at least half of the members.

#### **4.6 The Data Provider Committee**

A Data Provider Committee shall be set up composed of main representatives of data providers selected by the Consortium Board by two-thirds (2/3) majority. The term of the mandate of every member is five years (5) and may be renewable once.

CB defines the detailed rules regarding nomination of candidates for the Data Provider Committee and the number of its members at the first meeting. CB is also entitled to amend the adopted regulation. The CB decides the above-mentioned issues with the 2/3 majority.

The Data Provider Committee adopts the rules of its proceeding, which shall not contradict the CB Rules of procedure.

The Data Provider Committee shall form the policy concerning requirements as to the quality of the provided data and quality control.

The Data Provider Committee shall give their recommendations annually to the CB.

The Data Provider Committee elects a chair among its members. The term of its mandate is five (5). The chair shall advise the Director. They can be invited to attend the meetings of the Consortium Board without no rights to vote.

The chair presides the Data Provider Committee meetings, convenes and organizes its meetings. The meeting may be convened on the chair's own initiative, at the request of at least 20% of the Data Provider Committee members or at the request of the Director.

The Data Provider Committee resolutions are adopted by a simple majority of votes (more votes for than against, abstentions are not taken into account) in the presence of at least half of the members.

#### **4.7 The Innovation Advisory Committee**

The Consortium Board shall create the Innovation Advisory Committee, including representatives of TCS AH Stakeholders from academia, industry, science, local and central administration bodies, society and others, invited by the Consortium Board.

The Innovation Advisory Committee has a consulting role in the decision making process of TCS AH Consortium.

The Innovation Advisory Committee shall give their recommendations annually to the CB.

The Innovation Advisory Committee elects a chair among its members, at the meeting at which at least half of the members are present. The term of its mandate is five (5) years.

The chair convenes the Innovation Advisory Committee meetings, indicating whether the meeting will be in full composition or limited to some members appointed by the CB among all the Innovation Advisory Committee members. The chair organizes and presides meetings.

The meeting may be convened on the chair's own initiative, at the request of at least 20% of the Innovation Advisory Committee members or at the request of the Director.

The Innovation Advisory Committee resolutions are adopted by a simple majority of votes (more votes for than against, abstentions are not taken into account) of the members present at the meeting.

#### **4.8 Modifications to organization of TCS AH Consortium:**

The modifications to organisation of TCS AH Consortium as regulated in article 4 hereof requires decision of the Consortium Board adopted by unanimity of all CB members present at the meeting with special quorum requirement fulfilled. CB shall modify Annex 1 accordingly to align with the adopted amendments to Article 4. Such modifications do not constitute modifications hereof with the proviso that in matters having financial consequences for the

Parties subsequent ratification by the Parties is required.

#### **Article 4a: Associate Member**

The Consortium Board may decide to admit an organization, which can contribute to the achievement of the Consortium's mission to the Consortium as an Associate Member.

An organisation established in a country which is not a member of the European Union may become an Associate Member

The decision of the Consortium Board on admission of an Associate Member shall be made with qualified majority (special quorum required). The decision of the Consortium Board does not require ratification by the Parties to the Agreement.

The Associate Member shall assign a representative in the Consortium Board. The representative shall be entitled to participate in CB meetings in an advisory capacity only, in particular to propose draft resolutions.

The plan of tasks of the Associate Member shall be included in the Annual Work programme, regulated in Article 5 below.

#### **Article 5: Work programme of the TCS AH**

The Work programme which contains tasks and resources of each Party is attached as Annex 2.

The Annual Work programme, containing plan of tasks of the Director and the Sections for a given calendar year shall be prepared each year by the Director supported by the Sections and approved by CB.

#### **Article 6: Rights and Obligations of the Parties**

Each Party undertakes to take part in the efficient implementation of their responsibilities within the activities of the TCS AH Consortium, and to cooperate, perform and fulfil, promptly and on time, all of its obligations as may reasonably be required from it and in accordance with Annex 2. Each Party undertakes to notify promptly, in accordance with the governance structure of the TCS AH Consortium and EPOS-ERIC any significant information, fact, problem or delay likely to affect the activities of the above. Each Party shall promptly provide all reasonably required information having bearings on other TCS AH Consortium or EPOS-ERIC activities. Each Party shall take reasonable measures to ensure the accuracy of any information or materials it supplies to the other Parties.

#### **Article 7: Resources**

Each Party shall be responsible for its own resources, as described in Annex 2.

Any additional contribution shall be subject to a decision of the Consortium Board.

A Party may refuse to contribute additional resources beyond the contribution that would be due to meet the agreed level stated in the most recent Work programme, using veto right related

to in Annex 1.

Any distribution of common funds allocated jointly to all the members of TCS AH Consortium by EPOS-ERIC or any third party and designated for realization of purposes of the TCS AH Consortium shall be subject to a decision of the Consortium Board by two-thirds (2/3) majority and to set up of the related agreements.

Creating the joint budget requires the amendment to the Consortium Agreement. Any decision regarding a joint budget (i.e. the budget created from the financial contributions of the Parties) e.g. disposable funds from the joint budget, requires a decision of the Consortium Board.

## **Article 8: Data and Intellectual Property Rights**

### **8.1 General Principles**

The principles and process of handling data and intellectual property rights within the activities of the EPOS-ERIC are laid down in the data policy (Annex 3). The provisions of the policy are complemented with this article.

The rules concerning data and intellectual property rights established herein shall apply unless the Parties stipulate differently in the individual agreements regulating data and intellectual property rights to particular piece of Background or Results. If these individual agreements are not signed by all the parties of the Consortium Agreement, the drafts of these agreements shall be submitted to the Consortium Board for information before signing.

### **8.2. Ownership of Results**

#### **8.2.1 Management of Results**

Results obtained in the framework of the Consortium Agreement shall belong to the Party or Parties generating it.

In case of Results generated by several Parties, hereinafter referred to as “Joint Owners”, the co-ownership rate and intellectual property costs will be shared between the said Parties in proportion to their input.

In case of Results, the Parties may designate between them an intellectual property manager (hereafter “IP Manager”) during a meeting of the Consortium Board. The IP Manager will manage and monitor the protection of the Results. The detailed rules concerning the position of IP Manager shall be defined by CB.

In the event that, at least two French public Parties are included among the Joint Owners, such French public Parties shall designate between them a representative, hereafter « Representative », in accordance with the “Décret n°2014-1518 of 16 décembre 2014 relatif au mode de désignation et aux missions du mandataire prévu à l’article L. 533-1 du code de la recherche and Arrête du 19 juillet 2016 relatif aux modalités de prise en charge des frais engagés par le mandataire unique prévu à l’article L. 533-1 du code de la recherché”.

The Parties undertake to sign in good faith any legal instrument enabling them to exercise proprietary rights over the Results in accordance with the Consortium Agreement prior to any exploitation.

It is agreed that the Parties shall proceed in the interest of the inventors, in accordance with the

legislation.

### **8.2.2 Software**

The **Core Software** shall remain the property of the Party which holds it prior to the signing of the Consortium Agreement or who generated it after signing of the Consortium Agreement without any relevance to the Consortium.

**Adaptations** carried out, regardless of the author, in the framework of the Consortium Agreement, shall be the property of the Party owning the Core Software. Accordingly, where the Party having carried out Adaptations is not the owner of the Core Software, it undertakes to assign the right of use of such Adaptations, free of charge, to the Party owning the Core Software, including the right to reproduce, represent, translate, adapt, arrange, alter and market the Adaptation.

Each Party shall be the owner of the **Extension** produced by it within the framework of the Consortium Agreement, together with the owner of the Core Software from which such Extensions are derived in the proportions reflecting their input.

Extensions produced jointly by the Parties, regardless of which party is the initial owner of the Core Software from which such extensions are derived, shall be the joint property of the Parties who generated it.

The New Software shall be the jointly owned property of the Parties who generated it.

The rules concerning management of the Results established in the Article 8.2.1, and the rules concerning use of Results established in the Article 8.3 shall apply accordingly.

### **8.3 Use of Results**

In case of joint ownership: each of the Joint Owners shall be entitled to use their jointly generated and jointly owned research Results, whether patentable or not, for non-commercial research and teaching activities on a royalty-free basis, and without requiring the prior consent of the other Joint Owner(s). Each of the Joint Owners shall be entitled to otherwise exploit the jointly owned research Results and to grant (exclusive or non-exclusive) licenses to third parties if the other Joint Owners are given prior notice and compensation, provided that the third party offered compensation.

Subject to any third-party rights, each Party hereby grants to the other Parties a non-exclusive, royalty-free license to use its Results for the purpose of carrying out tasks explicitly agreed upon and detailed in the Work programme under this Consortium Agreement. Each Party shall be responsible for securing rights, to the necessary extent, to such Results from its employees, students, and/or any sub-contractors

### **8.4. Background**

Each Party shall own and continue to own its Background and nothing in this Consortium Agreement shall transfer those rights to another Party. The Parties do not intend any other assignment of or license to Background than is explicitly provided for in this Consortium Agreement.

Subject to any third-party rights, each Party hereby grants to the other Parties, a non-exclusive, royalty-free license under the owning Party's Background to use the owning Party's Background for the purpose of carrying out the tasks explicitly agreed upon and detailed in the Work programme under this Consortium Agreement. Furthermore, the Parties have a royalty-free, non-assignable right to use Background for further use within the activities of the EPOS-ERIC unless it was explicitly restricted by the entitled Party.

## **Article 9: Confidentiality**

### **9.1. General Principles**

All information in whatever form or mode of communication, which is disclosed by a Party (the "Disclosing Party") to any other Party (the "Recipient") in connection with the activities under this Consortium Agreement and which has been explicitly marked as "confidential" at the time of disclosure, or when disclosed orally has been identified as confidential at the time of disclosure and has been confirmed and designated in writing within fifteen (15) calendar days from oral disclosure at the latest as confidential information by the Disclosing Party, is "Confidential Information".

### **9.2. Obligations**

The Recipients hereby undertake, for a period of four (4) years after the termination of the Consortium Agreement:

- not to use Confidential Information otherwise than for the purpose for which it was disclosed;
- not to disclose Confidential Information to any third party without the prior written consent by the Disclosing Party;
- to ensure that internal distribution of Confidential Information by a Recipient shall take place on a strict need-to-know basis;
- and to return to the Disclosing Party on demand all Confidential Information which has been supplied to or acquired by the Recipients including all copies thereof and to delete all information stored in a machine-readable form. The Recipients may keep a copy to the extent it is required to keep, archive or store such Confidential Information because of compliance with applicable laws and regulations or for the proof of on-going obligations.

Notwithstanding the previous, a Party may disclose Confidential Information in order to comply with law or a court order.

The Parties are obliged to ensure preservation of the rules of confidentiality herein included by its employees delegated to tasks connected with performance of the CA.

The Hosting Party shall sign the confidentiality agreement with all the members of the CA bodies who are not employees of one of the Parties in order to assure preservation of the rules of confidentiality herein included.



## **Article 10: Dissemination**

### **10.1 General rules**

For the avoidance of doubt, nothing in this Article 10 has impact on the confidentiality obligations set out in Article 9.

The dissemination of the Results and Background is regulated primarily by the rules established in Annex 3 hereto

### **10.1 Dissemination of another Party's unpublished Results or Background**

A Party shall not include in any dissemination activity another Party's Results or Background without obtaining the owning Party's prior written approval, unless given piece of Result or Background is already published.

### **10.2 Obligation to cooperate**

The Parties undertake to cooperate to allow the timely submission, examination, publication and defense of any dissertation or thesis for a degree that includes their Results or Background subject to the confidentiality and publication provisions agreed in this Consortium Agreement.

### **10.3 Use of names, logos or trademarks**

Nothing in this Consortium Agreement shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

## **Article 11: Liability**

Except as otherwise specifically agreed, each Party shall only be liable towards the other Parties for direct damages, whether based on personal injury or material damage, it or the persons charged with the fulfilment of its obligations have caused through gross negligence or willful misconduct.

No Party shall be liable to any other Party for special, collateral, incidental or consequential loss or damages such as, but not limited to, loss of profit, loss of revenue, or loss of contracts.

Each Party shall be solely liable for any loss, damage or injury to third parties resulting from any breach of any of the provisions of this Consortium Agreement or arising out of the termination of this Consortium Agreement.

Each Party is liable only for its own part and the Parties do not have joint liability against third parties or the EPOS ERIC.

## **Article 12: Duration of this Consortium Agreement**

### **12.1 Entry into force**

This Consortium Agreement shall come into force on the last date of signature by the Parties, hereafter the "Effective Date".

## **12.2 Expiration**

Without prejudice to the 1.2, 1.3 and 12.3, this Consortium Agreement will terminate ten (10) years after its Effective Date, unless otherwise agreed unanimously by the Parties.

The extension of CA is within the competence of the Parties.

In case of not all Parties agree to the extension of CA, the CA shall remain in force only between the Parties that have agreed to its extension.

## **12.3 Termination or extension**

This Consortium Agreement may be extended or terminated before expiration date by an unanimous decision by the Parties.

In case so many Parties have withdrawn or have been excluded that the minimum amount of three Parties cannot be reached anymore, this Consortium Agreement shall be considered terminated, unless the Consortium Agreement terms are confirmed by unanimous decision of the remaining Parties.

## **13.4 Survival of rights and obligations**

The provisions relating to Confidentiality, for the time period mentioned therein, as well as for Intellectual Property Rights and Liability shall survive the expiration or termination of this Consortium Agreement.

Termination shall not affect any rights or obligations of a Party leaving the Consortium incurred prior to the date of termination, unless otherwise agreed between the Consortium Board and the leaving Party. This includes the obligation to provide all input, deliverables and documents for the period of its participation.

## **Article 14: Amendment procedure**

### **Amendments to the CA are the competence of the Parties, unless otherwise stipulated in the provisions of this CA.**

Amendment proposals may be submitted to the Chair by any Party, CB or the Director. The CB approves the draft of the amendment to the TCS AH consortium agreement by unanimity of all CB members present at the meeting with special quorum requirement fulfilled

All Annexes are an integral part of the Consortium Agreement.

Notwithstanding the foregoing, in order to change the Annexes, it is not necessary to follow the same procedure as for amending the Articles of the Consortium Agreement. The Annexes 1, 2 and 3 can be changed by decision of the Consortium Board in accordance to the regulations set up in Annex 1. Annex 3 may also be changed by the decision of the EPOS ERIC. However, the changes having financial consequences for the Parties require ratification of these changes by the Parties.

Changes proposal in the Annexes may be submitted to the Chair by any Party or the Director.

## **Article 15: Miscellaneous**

### **15.1 Language**

The Consortium Agreement is drawn up in English, which language shall govern all documents, notices, meetings, arbitral proceedings and processes relative thereto.

### **15.2 Applicable law**

In case of any dispute between the Parties arising in connection hereto, this Consortium Agreement shall be construed in accordance with and governed by the laws of the defending Party. The defending Party is the one indicated by the Party which formally initiated (notified about) the dispute. Nothing in this Consortium Agreement shall be deemed to require a Party to breach any mandatory statutory law under which the Party is operating.

### **15.3 Settlement of disputes**

The Parties shall endeavor to settle their disputes amicably within the structures of the Consortium Agreement on the forum of the Consortium Board.

In case the Parties were not able to settle the dispute on the forum of Consortium Board within 90 days from notification from one of the Party of such a dispute, such a dispute, controversy or claim arising under, out of or relating to this Consortium Agreement and any subsequent amendments of this contract, including, without limitation, its formation, validity, binding effect, interpretation, performance, breach or termination, as well as non-contractual claims, shall be submitted to mediation in accordance with the WIPO Mediation Rules. The language to be used in the mediation shall be English unless otherwise agreed upon.

If, and to the extent that, any such dispute, controversy or claim has not been settled pursuant to the mediation within sixty (60) calendar days of the commencement of the mediation, the courts of the defendant shall have exclusive jurisdiction.

Nothing in this Consortium Agreement shall limit the Parties' right to seek injunctive relief in any applicable competent court.

### **List of Annexes**

Annex 1: Rules of procedure of the TCS AH Consortium Board

Annex 2: Work programme

Annex 3: Data policy

## **Annex 1: Rules of Procedure of the TCS AH Consortium Board**

### **Powers**

The Consortium Board is in charge of namely:

- Deciding on the strategic issues related to the TCS AH;
- Deciding on exclusion of existing Party(ies);
- Deciding on changes to Annexes to the CA, however the changes having financial consequences for the Parties require ratification of these changes by the Parties;
- Approving the Work programme;
- Appointing the Consortium Board Chair (and the vice-chairs);
- Appointing the Director;
- Selecting the Host Party;
- Appointing members of the Users Committee and the Data Provider Committee and the Innovation Advisory Committee;
- Preparing funding strategies and other joint initiatives;
- Introducing modifications to the Sections listed in Article 4.3.;
- Deciding on allocation of funds granted jointly to all the Members of TCS AH for realization of purposes of the TCS AH Consortium;
- Approving the draft of the terms of admission and the necessary amendments to the TCS AH consortium agreement;
- Approving the draft of the amendment to the TCS AH consortium agreement by unanimity of all CB members present at the meeting with special quorum requirement fulfilled;
- Approving the tasks that will be listed in the Collaboration Agreements that any Party will sign with EPOS-ERIC;
- Approving the Annual Work programme;
- Deciding on other matters not reserved directly to the competence of the Parties or other TCS AH Consortium bodies.

### **Ordinary and extraordinary meetings**

The CB will meet on ordinary meetings at least once per year. On the ordinary meeting, the CB considers the Director's report on the activities of the TCS AH Consortium in the previous year and proposals of Annual Work Programme for the current year.

The CB may meet on extraordinary meetings when necessary.

The Chair may call, and in the cases indicated in the CA shall call, the meeting on his own

initiative. The request to call an extraordinary meeting, containing an agenda proposal, may be also filled to the Chair by 2/3 of the Parties or the Director.

The Chair shall convene all CB' members by notice at least 14 (fourteen) calendar days preceding the meeting, sending an agenda, and indicating the manner of holding the meeting and – if necessary - place of the meeting. Notification is made to the email addresses provided by CB members.

The Chair will organize meeting of the Consortium Board, presides it and performs other activities necessary for the proper conduct of the meeting. The meeting may be hold by means of teleconferencing, video conferencing, e-mail exchanges or any other electronic means of communication enabling the meeting to be properly conducted e.g. voting via dedicated software available online. Resolutions can also be adopted by circulation (also by online circulation).

### **Agenda**

The Chair in cooperation with the Director shall set the agenda for each meeting and include it in the invitation to the meeting.

Each Party shall be entitled to add issues on the agenda until seven (7) calendar days before the meeting.

Any issue which is not on the agenda may not be discussed or decided in the meeting, unless all Parties are represented and no one objects.

### **Quorum and majority rules**

The Consortium Board shall validly hold a meeting only if the quorum requirements have been met.

The Consortium Board shall validly make a decision only if the majority requirements have been met.

The normal quorum requirement shall be met when at least half of the Parties, who are entitled to vote, are represented.

The special quorum requirement shall be met when at least two thirds (2/3) of the Parties, who are entitled to vote, are represented.

In cases where the requirement of special quorum is not expressly provided for in CA, the normal quorum is required.

A simple majority shall be formed when the count of votes in favor of the decision is higher than the count of votes against. Abstained are not counted.

A qualified majority shall be formed when at least the two thirds (2/3) of the votes cast are in favor of the decision.

In cases where the requirement of qualified majority or unanimity is not expressly provided for in CA, CB shall make decisions by a simple majority.

For decisions to be made with a simple majority, a normal quorum shall suffice,

For decisions to be made with a qualified majority, a special quorum shall be required

For unanimous decisions all Parties must be represented, unless otherwise specified therein.

CB decisions are made in the form of resolutions.

### **Voting rules**

Apart from the cases explicitly indicated in CA, a qualified majority or unanimity of CB votes is also required in the following matters:

- Decide, with qualified two third (2/3) majority, upon the distribution of common funds allocated jointly to all the members of TCS AH Consortium by EPOS-ERIC or any third party for realization of purposes of the TCS AH Consortium;
- Decide, with qualified two third (2/3) majority, upon any issues regarding a joint budget (i.e. the budget created from the financial contributions of the Parties) e.g. disposable funds from the joint budget,
- Exclude a Party, with the unanimous decision, without the vote of the concerned Party;
- Decide on changes to Annex 2, with a qualified majority of 2/3, with the proviso that in matters having financial consequences for the Parties subsequent ratification by the Parties is required;
- Decide unanimously on changes to Annexes 1 or 3, with the proviso that in matters having financial consequences for the Parties subsequent ratification by the Parties is required;
- Approve the draft of the terms of admission and the necessary amendments to the TCS AH consortium agreement by unanimity of all CB members present at the meeting with special quorum requirement fulfilled;
- Approve the draft of the amendment to the TCS AH consortium agreement by unanimity of all CB members present at the meeting with special quorum requirement fulfilled

### **Veto rights**

A Party which can show that its own work, time for performance, costs, liabilities, intellectual property rights or other legitimate interests would be severely affected by a decision of the Consortium Board may exercise a veto with respect to the corresponding decision or relevant part of the decision.

A Party may refuse to contribute additional resources beyond the contribution that would be due to meet the agreed level stated in Annex 2.

In case of a deadlock, if no agreement can be reached within two (2) months after a veto, the Consortium Board may appoint an arbitration committee of three independent experts

### **Minutes of meetings**

The Chair shall produce written minutes of each meeting which shall be the formal record of all decisions taken. They shall send by e-mail the draft to all the Parties within ten calendar

days of the meeting.

The minutes shall be considered as accepted if, within fifteen (15) calendar days from sending, no Party has objected to the Chair with respect to the accuracy of the draft of the minutes.

The accepted minutes shall be sent by e-mail to all of the Parties of the Consortium Board and its Chair, who shall safeguard them. If requested the Chair shall provide authenticated duplicates to the Parties.

### **Repeat Meetings**

If the quorum is not met, then the meeting of the Consortium Board shall be adjourned and shall be repeated within seven (7) days after closing the previous meeting. The provisions regarding the meeting notice apply, however observance of the notice deadline is not required

The issues on the agenda of the repeat meeting shall be the same with the issues on the agenda of the original meeting.

In the repeat meeting of the Consortium Board, the quorum shall be considered met, irrespective of the number of Parties represented.

### **Representation, Representation by Proxy:**

Each representative acting within the Consortium Board shall be deemed to be duly authorized to deliberate, negotiate and decide on all matters submitted to the Consortium Board.

Any Party shall be able to authorize another Party to represent it in the meeting of the Consortium Board and vote on its behalf. In such a case, the representative shall be provided with a written power-of- attorney signed by the delegate of the principal Party. A Party cannot represent more than one other Party.

## **Annex 2: Work programme**

### **I. General provisions**

1. The Work programme describes the tasks and resources of each Party for the TCS AH.
2. The Parties to the Consortium Agreement undertake to contribute to the TCS AH the tasks and resources described herein in points II-VI.
3. For the sake of the present document, the Parties shall be hereafter referred to as:
  - a. **INGV** - Istituto Nazionale di Geofisica e Vulcanologia;
  - b. **CNRS** - Centre National de la Recherche Scientifique;
  - c. **INERIS** – Institut National de l'Environnement Industriel et des RISques
  - d. **CNRS-IPGS** – Institut de Physique du Globe de Strasbourg performing specified tasks on behalf of Centre National de la Recherche Scientifique;
  - e. **CNRS-ISTerre** – Institut des Sciences de la Terre performing specified tasks on behalf of Centre National de la Recherche Scientifique;
  - f. **GFZ** - Helmholtz Zentrum Potsdam Deutsches GeoForschungsZentrum;
  - g. **IG PAS** - Institute of Geophysics Polish Academy of Sciences;
  - h. **IG ASCR** - Geofyzikalni Ustav AV CR;
  - i. **OULU** - Oulun Yliopisto;
  - j. **LTU** - Lulea Tekniska Universitet;
  - k. **KU** - University of Keele;
  - l. **ACK UST** - University of Science and Technology - Academic Computer Centre Cyfronet;
  - m. **CMI** – Central Mining Institute;
  - n. **PMG** – Polish Mining Group;
  - o. **CMI-PMG** - jointly developed episodes by Central Mining Institute and Polish Mining Group, provided by CMI
  - p. **DPPL LEGAL** – Drobot Popławski Przybyłowicz Liszka-Gronek Radcowie Prawni Spółka Partnerska
  - q. **WUELS** - Wrocław University of Environmental and Life Science, based in Wrocław
4. Based on the collateral agreements, some of the tasks declared herein by Centre National de la Recherche Scientifique (CNRS), shall be performed by the linked institutions (Institut de Physique du Globe de Strasbourg and Institut des Sciences de la Terre).

### **II. EPISODES Platform (former IS-EPOS Platform)**



1. The EPISODES Platform, formerly known as the IS-EPOS Platform is an e-environment, available at the internet address episodesplatform.eu (formerly tcs.ah-epos.eu), which offers access to the services (Applications) operating on the data (Episodes) stored in the NODE-s.
2. The EPISODES Platform is a co-property of the Institute of Geophysics Polish Academy of Science and the University of Science and Technology of Kraków (jointly: „Platform owners”) and it is organized and managed exclusively by the entities mentioned above.
3. The Platform owners undertake to organize, manage and maintain the EPISODES Platform.

### **III. The NODE-s**

1. The NODE-s are local data centers whose specific status consists in storing and providing the EPISODES Platform with the data (Episodes) coming from different entities.
2. The Institute of Geophysics Polish Academy of Science is the owner of the NODE, situated in Poland and undertakes to organize, maintain and manage the above-mentioned NODE,
3. Institut de Physique du Globe de Strasbourg is the owner of the NODE, situated in France. Centre National de la Recherche Scientifique undertakes to organize, maintain and manage the above-mentioned NODE. The aforementioned tasks shall be performed by Institut de Physique du Globe de Strasbourg, acting on behalf of Centre National de la Recherche Scientifique.
4. The NODE’s owners will store Episodes under the contract signed by and between the Party providing given Episode and the owners of the NODE under the conditions specified in detail therein.
5. The NODE’s owners will make available the stored Episodes to the EPISODES Platform users under the contract signed by and between the NODE’s owner and the EPISODES Platform owners under the conditions specified in detail therein.

### **IV. Episodes**

1. The Episodes are an integral and independent set of data correlated in time, describing the seismologic activity, geophysical processes, technological activity and the environment in the specified area. The Episodes will be made available by means of the EPISODES Platform.
2. Each of the Parties listed below undertakes to provide below indicated Episode/s.
3. The below included list of Episodes does not include the Episodes which are provided by the organizations not being Parties to the Consortium Agreement.

### LIST OF EPISODES

LP	The episode name	The providing Party
1.	<i>ASFORDBY: underground coal mining</i>	<b>KU</b>
2.	<i>NORTHWICH: underground salt extraction cavities</i>	<b>KU</b>
3.	<i>PREESALL MINE: underground salt extraction cavities</i>	<b>KU</b>
4.	<i>THORESBY COLLIERY: underground coal mining</i>	<b>KU</b>
5.	<i>PREESE HALL: shale gas</i>	<b>KU</b>
6.	<i>OKLAHOMA: conventional and unconventional hydrocarbon extraction and wastewater injection</i>	<b>KU</b>
7.	<i>PYHASALMI MINE: in situ underground laboratory</i>	<b>Oulu</b>
8.	<i>THE GEYSERS Prati 9 and Prati 29 cluster: Treated wastewater injection for geothermal power production</i>	<b>GFZ</b>
9.	<i>GROSS SCHOENEBECK: geothermal energy production experiment</i>	<b>GFZ</b>
10.	<i>VAL D'AGRI: water reservoir</i>	<b>INGV</b>
11.	<i>EMILIA ROMAGNA: conventional hydrocarbon extraction and fluid injection</i>	<b>INGV</b>
12.	<i>VAL D'AGRI FIELD: conventional hydrocarbon extraction</i>	<b>INGV</b>
13.	<i>GISOS-CERVILLE: underground solution mining</i>	<b>INERIS</b>
14.	<i>STARFISH: underground gas storage</i>	<b>INERIS</b>
15.	<i>BOBREK MINE: local seismicity linked to longwall mining</i>	<b>CMI</b>
16.	<i>USCB: regional seismicity and ground motion associating underground coal mining</i>	<b>CMI</b>
17.	<i>MUSE-1.1 – PIAST-ZIEMOWIT; ZIEMOWIT: underground coal mining</i>	<b>PMG; WUELS</b>
18.	<i>MUSE-1.2 – RUDA- BIELSZOWICE: underground coal mining</i>	<b>CMI-PMG; WUELS</b>
19.	<i>MUSE-2 - ROW-RYDUŁTOWY: underground coal mining</i>	<b>CMI-PMG; WUELS</b>
20.	<i>GSS-MPP Rybnik - seismicity induced by underground mining in protective pillar</i>	<b>CMI-PMG</b>
21.	<i>CZORSZTYN: shallow water reservoir</i>	<b>IG PAS</b>
22.	<i>LGCD: regional seismicity and ground motion associating underground hard rock mining</i>	<b>IG PAS</b>
23.	<i>SONG TRANH: deep water reservoir</i>	<b>IG PAS</b>
24.	<i>LUBOCINO: Shale Gas</i>	<b>IG PAS</b>
25.	<i>LAI CHAU: water reservoir</i>	<b>IG PAS</b>
26.	<i>WYSIN: Shale Gas</i>	<b>IG PAS</b>
27.	<i>BOGDANKA: underground coal mining</i>	<b>IG PAS</b>
28.	<i>GAZLI: hydrocarbon field</i>	<b>CNRS-ISTerre</b>
29.	<i>LACQ GAS FIELD: conventional hydrocarbon extraction</i>	<b>CNRS-ISTerre</b>

30.	<i>MONTEYNARD: water reservoir</i>	<b>CNRS-ISTerre</b>
31.	<i>VOUGLANS: water reservoir</i>	<b>CNRS-ISTerre</b>
32.	<i>SOULTZ-SOUS-FORETS 1993 STIMULATION</i>	<b>CNRS-ITES/EOST</b>
33.	<i>SOULTZ-SOUS-FORETS 2000 STIMULATION</i>	<b>CNRS-ITES/EOST</b>
34.	<i>SOULTZ-SOUS-FORETS 2003 STIMULATION</i>	<b>CNRS-ITES/EOST</b>
35.	<i>SOULTZ-SOUS-FORETS 2004 STIMULATION</i>	<b>CNRS-ITES/EOST</b>
36.	<i>SOULTZ-SOUS-FORETS 2005 STIMULATION</i>	<b>CNRS-ITES/EOST</b>
37.	<i>SOULTZ-SOUS-FORETS 2010 STIMULATION</i>	<b>CNRS-ITES/EOST</b>
38.	<i>RITD (Rittershoffen)</i>	<b>CNRS-ITES/EOST</b>
39.	<i>VDHD (Vendenheim)</i>	<b>CNRS-ITES/EOST</b>

4. All Episodes shall be provided based on the supplier's letters signed by the providing organization and under the contract signed by and between the organization providing given episode and the owners of the NODE under the conditions specified in detail therein.
5. **WUELS** shall provide access to the GNSS (Global Navigation Satellite System) Data Research Infrastructure Centre and the GGOS-PL (Global Geodetic Observing System) and Satellite Data Research Infrastructure Center and 3D GIS service infrastructure to be applied in order to enhance the use of EPISODES provided by other Parties.

## V. Applications

1. The Applications are programs (software) enabling to use the EPISODES Platform and to use the data gathered in Episodes made available by means of the EPISODES Platform, including to make different calculations and operations on the data.
2. Each of the Parties listed below undertakes to provide the background software element (code) for the indicated Application.
3. The below included list of Applications does not include the Applications for which background software is provided by the organizations not being Parties to the Consortium Agreement.

### LIST OF THE APPLICATIONS

<b>LP</b>	<b>The application name<sup>1</sup></b>	<b>The providing Party</b>
1.	<i>Fracture Network Models - Mechanical Stresses</i>	<b>KU</b>
2.	<i>FOCI application [Moment tensor inversion]</i>	<b>GFZ</b>
3.	<i>Stress Inversion [Evaluates stress axis orientation and relative stress magnitude by inverting focal mechanisms]</i>	<b>GFZ</b>

<sup>1</sup> The Parties may decide to change a name of an application, which will not alter its functionality.

4.	<b>Inter-event Time Distribution Analysis</b> [ <i>Anderson-Darling test to study the null hypothesis of inter-event times exponentiality</i> ]	IG PAS
5.	<b>Completeness Magnitude Estimation</b>	IG PAS
6.	<b>Estimation of source parameters in time-varying production parameters geometry</b>	IG PAS
7.	<b>Time dependent hazard in mining front surroundings</b>	IG PAS
8.	<b>Time dependent hazard in selected area</b>	IG PAS
9.	<b>Stationary Hazard: Exceedance Probability</b>	IG PAS
10.	<b>Stationary Hazard: Maximum Credible Magnitude</b>	IG PAS
11.	<b>Stationary Hazard: Mean Return Period</b>	IG PAS
12.	<b>Source size distribution functions/Stationary Hazard</b> [ <i>Estimates PDF and CDF of magnitudes assuming different models</i> ]	IG PAS
13.	<b>Spectral Analysis</b> [ <i>P and S waves spectral levels and corner frequencies using Snoke algorithm</i> ]	IG PAS
14.	<b>Localization</b> [ <i>Performs localization/re-localization of seismic events hypocenters</i> ]	IG PAS
15.	<b>Autocorrelation</b> [ <i>autocorrelation of a time series</i> ]	IG PAS
16.	<b>Coefficient of Randomness</b>	IG PAS
17.	<b>Cross Correlation</b> [ <i>cross-correlation of two time series</i> ]	IG PAS
18.	<b>Priestley-Subba Rao (PSR) Test</b> [ <i>Test for a time series stationarity testing</i> ]	IG PAS
19.	<b>Front Advance Histograms</b>	IG PAS
20.	<b>Seismic Activity with Front Advance</b> [ <i>combined visualization</i> ]	IG PAS
21.	<b>Catalog Export</b> [ <i>Exports a MATLAB Catalog as a spreadsheet (.xlsx) file</i> ]	IG PAS
22.	<b>Catalog Filter</b>	IG PAS
23.	<b>GDF Export</b> [ <i>Exports a GDF MATLAB file as a spreadsheet (.xlsx) file</i> ]	IG PAS
24.	<b>Ground Motion Parameters Tool</b> [ <i>Joins a Seismic Catalog and a GM Catalog into a joined catalog</i> ]	IG PAS
25.	<b>Magnitude Conversion</b> [ <i>establishes empirical scaling relationships between different magnitude scales</i> ]	IG PAS
26.	<b>Time Series Builder</b>	IG PAS
27.	<b>Strong Motion Data Analysis Module</b>	IG PAS
28.	<b>Ground Motion Prediction Equations</b>	IG PAS
29.	<b>Modelling uncertainties and interval estimation of hazard parameters</b>	IG PAS
30.	<b>Integrated data visualization</b>	ACK UST
31.	<b>Catalog Time and Correlated Parameter Extractor</b> [ <i>Extracts time column and a chosen parameter from a catalog and returns them as vectors</i> ]	ACK UST

32.	<b><i>GDF Time and Correlated Parameter Extractor</i></b> [ <i>Extracts time column and a chosen parameter from a GDF file and returns them as vectors</i> ]	ACK UST
33.	<b><i>Seed converter</i></b> [ <i>Converts a SEED file (fullSEED or miniSEED) to either SAC or ASCII files</i> ]	ACK UST
34.	<b><i>Seismogram Picking Tool</i></b> [ <i>Performs selection of phases and picks on seismograms</i> ]	ACK UST
35.	<b><i>Signal download tool</i></b>	ACK UST
36.	<b><i>Waveform download tool</i></b>	ACK UST
37.	<b><i>Document repository applications</i></b>	ACK UST
38.	<b><i>Waveform-based seismic event location</i></b>	INGV
39.	<b><i>Coda Wave Interferometry detection of velocity changes</i></b>	INGV
40.	<b><i>MERGER - simulator for Multi-hazard/multi-risk assessment in Exploration/exploitation of Georesources</i></b>	INGV
41.	<b><i>Stress and strain changes induced by fluid injection and temperature change driven by geothermal injection</i></b>	CNRS-ITES/EOST
42.	<b><i>Template matching based detection algorithm</i></b>	CNRS-ITES/EOST
43.	<b><i>Estimate of Maximum Possible Magnitude for reservoir triggered seismicity</i></b>	CNRS-ISTerre
44.	<b><i>Earthquake interactions - georesource scale</i></b>	CNRS-ISTerre
45.	<b><i>Earthquake interactions - mainshock scale</i></b>	CNRS-ISTerre
46.	<b><i>Earthquake swarm: reshuffling analysis</i></b>	CNRS-ISTerre
47.	<b><i>Time correlated earthquakes (Seasonal trends)</i></b>	CNRS-ISTerre
48.	<b><i>Effective stress drop estimate</i></b>	IG ASCR
49.	<b><i>Mechanism: Full Moment Tensor</i></b>	IG ASCR
50.	<b><i>Mechanism: Shear Slip</i></b>	IG ASCR
51.	<b><i>Mechanism: Shear-Tensile Crack</i></b>	IG ASCR

4. All background software shall be provided based on the supplier's letters signed by the providing organization and under the contract signed by and between the organization providing given episode and the EPISODES Platform owners under the conditions specified in detail therein.

## **VI. The Sections**

1. The performance of the tasks of TCS AH is coordinated through Sections listed in art. 4.3 of the Consortium Agreement.
2. Each of the Parties listed below (Leaders of the Sections) undertakes to organize, manage and maintain a Section indicated below.

3. Each of the Parties listed below undertakes to join the work of the indicated Section, providing a below specified manpower.
4. The other Parties may join the work of a given Section on a voluntary basis, with the consent of the Leader of a given Section

### LIST OF THE SECTIONS

LP	The name of the Section	The Leader of the Section	The Party contributing the manpower	Working plan for the Section
1.	Section for implementation of TCS AH Services	ACK UST	IGF PAS INGV GFZ CNRS-ITES/EOST	<ul style="list-style-type: none"> <li>● Evaluate technical and legal criteria and assess possible updates required to integrate new episodes and applications</li> <li>● Evaluate the “completeness” of the set of services implemented in the TCS AH, aiming at the identification of critical areas in which there might be an opportunity to constructively widen the available pool of services</li> <li>● Alter implementation to fit the new requirement from ICS-C implementation and ensure TCS AH components be presented at ICS-C in relevant manner</li> <li>● Ensure data policy be clearly expressed, controlled and enforced</li> <li>● Audit the system in respect to GDPR regulations and implement necessary means to operate privacy accordingly</li> <li>● Design and implement tools for easy user feedback collection; manage user feedback and maintain a list of features and improvements that can be implemented</li> <li>● Align AAAI mechanisms with EPOS and providers</li> <li>● Integrate new data nodes and monitor availability of the connected nodes</li> <li>● Operate the process of quality control with proactive improvements</li> <li>● Maintain technical resources and software components that are used for delivery of services including monitoring security and upgrading the systems to avoid vulnerabilities.</li> </ul>
2.	Section for administration law & accounting	IG PAS		<ul style="list-style-type: none"> <li>● Coordination and administration of TCS AH Consortium bodies.</li> </ul>
3.	Section for episodes’ integration and application implementation	GFZ	IG-PAS ACK UST  IG ASCR CMI CNRS-ITES/EOST	<ol style="list-style-type: none"> <li>1. Objectives of the section <ol style="list-style-type: none"> <li>a) Provide maintenance to episodes and applications already integrated in the EPISODES e-Platform, including (meta-) data updates and updates to application (e.g. error fixes).</li> <li>b) Add and manage new episodes and new applications provided by the EPISODES e-Platform related to anthropogenic hazards</li> <li>c) Harmonize the link between the Data Nodes and the EPISODES e-Platform (Server maintenance and upgrade to ensure the continuity of e-Nodes)</li> <li>d) Enable, coordinate and stimulate the communication between data providers and e-Nodes</li> <li>e) Integrate new acquired data centers into the</li> </ol> </li> </ol>

				<p>EPISODES e-Platform</p> <p>f) Update legal issues of data policy and data management if required</p> <p>g) Continuously oversee and upgrade data format standards used within the EPISODES Data Platform in response to new data, internal and external requests from EPISODES partners</p> <p>h) Develop tools for data visualization on the EPISODES e-Platform (specially for GIS data)</p> <p>i) Guarantee the provision of required data converting tools on the EPISODES e-Platform for users and data providers</p> <p>j) Communicate with e-Platform users to receive feedback on delivered products</p> <p>k) Harmonize the collaboration and work flows of TCSs of different EPOS projects connected with the EPISODES e-Platform</p> <p>l) Collaborate with other sections</p> <p>2. Work plan for 5 years, Strategy:</p> <p>a) Setting up a fixed strategy to keep episodes integrated in the EPISODES e-Platform updated</p> <p>b) Setting up a procedure to integrate new episodes and applications</p> <p>c) Establish procedures to regulate a common work flow for all involved Data Nodes</p> <p>d) Compile a communication procedure to guarantee a harmonized collaboration with projects connected with the EPISODES e-Platform in the sense of maintaining improving and developing quality control routines, metadata preparation and the standardization of data formats</p> <p>e) Set up a communication strategy to receive EPISODES e-Platform user feedback on delivered products (e.g. Forum)</p> <p>f) Organize meetings for harmonizing work flows:</p> <p>(i) Annual meeting of section members and data providers</p> <p>(ii) Annual meeting with all sections</p> <p>g) Participate in conferences to advertise episodes of EPISODES e-Platform and to exchange experiences with other EPOS work packages</p> <p>h) Work in close cooperation with section for Projects &amp; Partnership and section for Promotion &amp; Dissemination to contact new data providers to increase the number of episodes related to anthropogenic hazards and applications on the EPISODES e-Platform</p>
4.	<b>Section for promotion and dissemination</b>	<b>CNRS-ITES/EOST</b>	<b>KU OULU IG PAS PMG</b>	<ul style="list-style-type: none"> <li>● Defining and coordinating communication plans and associated campaigns</li> <li>● Coordinating our communication plans and activities with the EPOS ERIC Communication Unit</li> <li>● Updating the TCS AH website</li> <li>● Organizing a virtual TCS AH workshop</li> </ul>
5.	<b>Section for projects &amp; partnership</b>	<b>LTU</b>	<b>CMI IG PAS INGV INERIS</b>	<p>Aims:</p> <ul style="list-style-type: none"> <li>● To establish strategic partnerships</li> <li>● To establish multi-sector collaboration (universities, industry, funding agencies etc)</li> <li>● To attract new partners</li> </ul>

				<p>Partners and collaborations should be not only within Europe but also outside Europe</p> <p>Strategy:</p> <ul style="list-style-type: none"> <li>● Define possible groups of partners</li> <li>● Prepare strategy together with the Promotion and dissemination section</li> <li>● Prepare special strategy to collaborate with big organization (e.g. EAGE) and large experimental projects</li> <li>● Prepare technical requirements for new data and software (in collaboration with the sections for Episodes Integration and Application Implementation and for implementing TCS AH services )</li> <li>● Prepare strategy, define/adjust rules of collaboration depending on partner (academic, commercial – incl lawyers, IT, equipment companies; educational)</li> <li>● Prepare rules for new partners to join TCS AH Consortium</li> <li>● Consider the possible participation of the Consortium in international projects</li> </ul>
--	--	--	--	---