**Code of Conduct**

**for the Project Functionality Isolation Test (FIT)**

**Between**

**CNRS/IN2P3**

DESCRIPTION

* Cf exemple MOU

Hereinafter referred to as « «

Représenté par Nico

And

XXXXX

Hereinafter referred to as « «

ETC EN FONCTION DU NOMBRE DE PARTIES

Hereinafter collectively referred to as « **the Parties** » or individually as « **the Party** ».

* A la fin, les party signent en tant que représentant de l’institut.
* CNRS / IN2P3 (Xavier Doligez, Marc Ernoult and Nicolas Thiollière) - CLASS
* • CEA Cadarache (Guillaume Krivtchick) - COSI
* • Madison University (Baptiste Mouginot) - CYCLUS
* • Argonne National Lab (Bo Feng) - DYMOND
* • Oak Ridge National Lab (Eva E. Davidson et Jin Whan Bae) - ORION
* • CIEMAT (Aris Villacorta) - Tr\_Evol / Evol\_code
* • TRACTEBEL (Hubert Druenne, Bart Vermeeren) - ANICCA
* • Univ. of technology and economics of Budapest (Mate Halasz) - JOSSETTE
* • Universidad Católica del Maule (Ivan Merino) - ANICCA

**Preamble**

**Context of the project**

**A synthetiser**

Since the 1990s, many nuclear fuel cycle simulators have been developed by several institutions. A fuel cycle simulator aims to model a fleet of nuclear facilities such as nuclear reactors, fuel plants, reprocessing plants, cooling pools and waste depots . These tools help identify drivers and interactions between fuel cycle parameters. They implement physical models for key points of the cycle such as enrichment, manufacturing and fuel depletion, with different levels of complexity.

Fuel cycle simulators are used worldwide for a wide range of applications: optimizing the industrial operation of an existing nuclear fleet, providing valuable information to policy makers, and evaluation/verification of the operation of an existing nuclear fleet....

These tools are also used for research and development training as a point of access to key fuel cycle data.

The many institutions that develop and use fuel cycle simulators pursue a multitude of objectives. As a result, software development decisions (e.g. loyalty) are often made in accordance with the institution's simulation objectives. To improve confidence in results, institutions may be tempted to increase the complexity of their software, even if this complexity may not be necessary.

For example, neutron and gamma-ray calculations require accurate knowledge of each isotopic composition of each material in each facility as well as a description of the spatial configuration of these isotopes while calculating the uranium consumption does require the same degree of detail. As a result, some features may not be necessary depending on the technical issue that the code evaluates: solving a given technical issue combined with targeted accuracy will require a limited set of features.

Knowing the importance of each one will help users choose an appropriate software tool or can guide future code development to solve a specific issue. In addition, some technical questions are evaluated by many studies conducted with different software and it is often difficult to compare them. Knowing the impact of features on different simulation outputs can be used to estimate the confidence level of different studies on the fuel cycle.

The FIT project was designed to understand the circumstances in which the choice of algorithm and/or model influences the conclusions that could be drawn from a simulation of the fuel cycle. The project aims to characterize the relationship between the fidelity of the model and the desired level of trust in the context of many different research questions. Among the features of interest, this first Fit focuses on the ability of the fuel cycle software to adapt the fresh fuel to the qualities of the available material and the requirements of the associated reactor.

**Goals and intended impact of the FIT project**

**Purposes plutôt**

The FIT Project was initiated in 2017. It aims to improve the confidence in the data produced by fuel cycle simulation tools. The first goal is to gather the community of fuel cycle specialists around the question of the confidence in simulation outputs. The second goal is to determine the optimum level of details a fuel cycle simulator needs relative to the type of study and the required confidence level. The project relies on the wide variety of fuel cycle simulators with a large range of complexity level are developed.

Improving the ability to reproduce an operated nuclear fleet involves increasing the complexity of the simulation tool by developing new functionalities. A fuel cycle functionality is the translation of a physical or technical process, related to nuclear facilities, into computer software language.

The FIT project consists in isolating the impact of a functionality on fuel cycle simulations. The impact of each functionality is assessed using a set of simple basic exercises specifically designed for this purpose, called ``functionality isolation``. Each exercise of a functionality isolation will be focused on a subset of output metrics related to a category of problems covered by the fuel cycle study.  
  
For example, the total mass of plutonium is used as output of interest for fuel cycle studies dealing with nuclear fuels recycling. Minor actinides production could be added to the analyses to take into account fuel cycle studies concerned by radio-protection. Once the choice of output of interest is made, the effect of the functionality is quantified by specific estimators computed with the functionality enabled and the reference case. Each participant submit a resolution for the exercise and conclusions can be drawn according to the level of agreement of participants.  
  
With this methodology, the FIT project provides information about which functionalities are required to answer a specific question with an associated precision or confidence. When starting a new fuel cycle study, the fuel cycle simulator user starts from a technical question. One example can be: "In a PWR fleet, considering spent UOX fuel plutonium reprocessing, what is the optimum PWR UOX - MOX ratio that allow no/low plutonium accumulation ? ». The user then identify the set of output metrics required to answer the technical question and the precision needed for each of them. In the example above, the user needs to assess the plutonium inventory contained in facilities between the UOX spent fuel and the PWR MOX fuel. The user can then use the FIT project results to decide what are the code required functionalities to produce a reliable result.

The aim of the FIT project is to assemble set of exercises, each testing a specific functionality isolation. If each set of exercise aims to have the highest number of participating simulators as possible, some simulators and or institution might not be participating in some  exercises, or might only participate partially. The participation to an exercise also depends on the availability of participants and on the ability of each simulator to activate and deactivate the tested functionality.

**The parties agreed have as follows :**

Eventuellement **PRELIMINARY ARTICLE -DEFINITION**

LES DEFINITIONS SI BESOIN ETANT

**Confidential information :**

Designates all Results, Own Knowledge, scientific, technical, financial, commercial or other information, whether or not they are covered by intellectual property rights, regardless of their nature, form and support (including writing, oral, electronic or visual form), including but not limited to, knowledge, written or digital information, oral disclosures during visits, expert reports, samples, specifications, photos, designs, software, plans, or equipment that will be communicated directly or indirectly by or on behalf of a Party (the "Disclosure Party") to one or more other Parties (the "receiving part") in the performance of the Convention or to which the Convention one or more Party will have access to the occasion of this one. The confidentiality of the Confidential Information transmitted will, as far as possible, be recalled, by all means (particularly by placing on the physical medium a mention of the type "Confidential"), at the time of each communication, as well as the date of this communication and the reference to the Convention.

In the event of oral or visual disclosure of Confidential Information, for example during site visits or meetings, the Disclosure Party must, at the time of disclosure, draw the attention of the Receiver Party to their confidentiality, which will then be confirmed (i) either in the form of a report or meeting report prepared and co-signed by the Parties at the end of the visit or meeting, (ii) or in the form of a listing or summary of the disclosed Confidential Information sent by the Part Disclosure, to the Receiving Party, as soon as possible not exceeding 15 days.

**methodology**

**Results:**

**Distinction entre résultat et connaissances propres = acquis à t0 du projet**

**Result = ce qui résulte du temps passé sur le travail et sur la base des connaissances**

**Publication**

**Script d’analyse**

**Données de sortie de simulation**

**methodology**

All technical and/or scientific information and knowledge, in particular, but without this list being limited, know-how, data, databases, software, plans, diagrams, formulas and/or any other type information in any form, patentable or unpatented and/or patented or not, protected or not, protected or not, by an intellectual property right, generated by one or more Parties under the Convention and all rights of intellectual property. Results include all Deliverables and their content.

**Article 1 - PURPOSE**

The purpose of this agreement is to establish the policy, the mutual obligations, areas of responsabilities and the rights of the parties involved that will be the framework of collaboration between the members of the FIT Project.

**Article 2 – EVENTUELLEMENT GOVERNANCE/COLLABORATION MANAGEMENT ou OBLIGATIONS OF THE PARTIES**

**On propose un Chef nommé et ça tourne**

* **Définir les modalités**
* **Vote a main levé**
* **durée**

**(Article 3 – MEANS (EVENTUELLEMENT)**

A mettre entre parenthèses

3.1 Financials Means…

3.2 Human Means …)

**Article 4 –INTELLECTUAL PROPERTY**

**4.1 Knowledge of its own**

Each Party remains the owner of its own Knowledge as defined in the preliminary article of the Convention.

**4.2 Property of Results**

Results that are generated as part of a Project are deemed to be the co-ownership of the 'Parties involved' ('Part) Co-owner) in proportion to their human, intellectual, the project concerned.

**4.3 Use of Own Knowledge and Results**

**4.3.1 Knowledge of its own**

Each of the Parties Involved in a Structuring or Exploratory Project undertakes to grant to the other Parties involved in the said Project and/or to their Affiliates, subject to third-party rights, a non-exclusive, non-transferable right of use on its Knowledge of its own, which would be strictly necessary for the execution of actions relating to The Structuring and Exploratory Projects.

Subject to its prior commitments at the time of the application, each of the Parties involved undertakes to grant to the other Parties and/or their Affiliates who request it, a license on its own knowledge that would be necessary to direct or indirect exploitation by one of the Parties and/or its Affiliates of the results obtained as part of a Structuring or Exploratory Project. The terms and conditions of this license will be defined as part of a separate agreement.

**4.3.2 Use for Results Search**

Each Party that is a signatory to this Convention can freely use the results of the Convention's projects in the context of non-commercial acts, including industrial or experimental, for research purposes, alone or with third parties, subject to the confidentiality obligations of Article 5.

**Article 5 – SECRET – COMMUNICATIONS - PUBLICATIONS**

**5.1 Confidential Information**

Each Party undertakes to consider as confidential and therefore not to disclose to any third party, the confidential information disclosed under the Convention, without the prior, express and written consent of that Party.

The Receiving Party may only transmit the relevant Confidential Information to an authorized third party as covered above (including any sworn advice), provided that the third party commits in advance and in writing to to meet obligations at least as strict as those under the Convention.

In any event, the Receiving Party will remain fully responsible to the Disclosure Party for any breach by that third party of its confidentiality obligations.

**5.2 Receiving confidential information**

The Party that receives Confidential Information is committed to:

a) be protected and kept strictly confidential and treated with the same degree of care and protection it affords to its own Confidential Information, which cannot be less than a reasonable degree of protection;

b) are disclosed only internally and only to members of its staff who have to know them for the pursuit of the objectives defined by the Convention, provided that they are bound by a duty of confidentiality at least as strict than that resulting from the present;

c) are not used, fully or partially, for any purpose other than that of the Convention, without the prior and written consent of the Party that communicated them;

d) are not disclosed directly, in particular by reproduction, to any third party or to anyone other than those mentioned in paragraph (b) above and/or Article 5.1;

e) are not copied, reproduced, duplicated completely or partially when such copies, reproductions or duplications have not been authorized in a specific manner and in a specific manner written by the Party that communicated them.

A Party will be under no obligation and will not be subject to any restrictions on any Confidential Information for which it may provide written proof:

- that they have entered the public domain prior to or after their disclosure, but in this case, in the absence of any wrongdoing; where

- that they were received from a third party lawfully, without restrictions of disclosure or violation of the Convention; where

- that they were published in accordance with the rules of Article XXX of the Convention; where

- that they were already known to him before they had received them under the Convention. This knowledge can be demonstrated by the existence of appropriate documents in its files; where

- that they are the result of internal developments undertaken in good faith by members of its staff who did not have access to these Confidential Information; where

- that their use or disclosure was authorized in writing by the Party that provided them; where

- that their disclosure was imposed by the application of a mandatory legal or regulatory provision, a court decision or a final arbitral award or an order from a guardianship or supervisory authority. In this case, the disclosure of information must be limited to the bare necessities. The Party concerned undertakes to inform the other Party immediately of any communication made in this regard.

The provisions of Articles 5.1 and 5.2 will remain in force for the duration of the Collaboration and for two (2) years from its expiry, regardless of the cause. Parties undertake to take the necessary steps to enforce this duty of confidentiality by their personals.

**5.3 Publications**

During the duration of the Convention and the two (2) years following its expiration or termination, any draft publication or communication of The Results from the Projects will be submitted by the Project Manager to the prior agreement of the other 'Parties' involved in the project, which may, among other things, be deleted or amended if the draft publication or communication contains Confidential Information that may be protected under the property or whose disclosure would be likely to prejudice the commercial operation of the Results. The Party that made the publication request will not be able to refuse to delete or change.

In any event, the Parties involved in the Project will announce their decision within a maximum of one (1) months after receiving the written request for publication or communication.

Other Parties involved in the Project may delay publication or communication for up to 18 months from the written request for publication or communication if results contained in the publication or disclosure must be protected under industrial property or if that publication is likely to harm its legitimate interests.

This article cannot be construed as authorizing a Party to publish or communicate a Knowledge of its own not belonging to it.

These publications and communications should mention that the work was carried out under the FIT Programme in collaboration with the Parties involved in the Project and include the names of each contributor and institute who have made a contribution.

However, the provisions of this article will not stand in the way of:

- nor the obligation of each person participating in the Science Program and to produce an activity report to the institution under its jurisdiction. In this case, each of the Parties undertakes to take all necessary measures to maintain the confidentiality of the information contained in those reports, in order to avoid any risk of disclosure within the meaning of the Intellectual Property Code;

- nor to the thesis defence of researchers whose activity is carried out within the framework of a Project, subject to submission prior to the defence of the thesis, to the Parties who may request the removal or modification of certain information contained in the thesis whose disclosure would be likely to harm its legitimate interests. This defence should be organised in such a way as to ensure, while respecting the current university regulations, the confidentiality of the results

- neither the possibility for the Parties and the Parties' own knowledge (including a non-publishable confidential appendix, a closed-door defence with confidentiality commitments from the members of the jury, the preservation of the brief in one place inaccessible to the public...) to be able to exploit the results, in accordance with the provisions of Article 4.3.

Parties undertake not to use in writing or orally, regardless of the medium used, the name, brand or logo of another Party or any of its staff members in the operation and dissemination of the Results or any disclosure n relating to the Program, including for promotional or advertising purposes, without obtaining the express and prior written agreement of the Party concerned.

This provision will remain in force notwithstanding the expiry or resolution of the Convention.

**Article 6 - Eventuellement CONTRATS WITH TIERS**

**Article 7 – RESPONSABILITY**

Each Party remains responsible, under the terms of the common law, for the damage that its staff could cause to third parties, on occasion implementation of this Convention.

**Article 8 – MEMBERSHIP – WITHDRAWAL**

**8.1 Membership**

In the event that other research organizations or companies that are not signatories to this Convention wish to join the Convention, their membership will be discussed and, if necessary, validated by the others membrers. Membership takes effect after signing an Endorsement to the Convention.

**DEFINIR DANS QUELLES CONDITIONS, TOUT DEPEND SI ON MET UN POUVOIR DE DIRECTION**

**8.2 Withdrawal**

Any Party that wishes to do so may unitaterally and in advance at any time terminate its rights and obligations other than those defined in Articles 4 and 5 of this convention upon a three (3) months prior written notice.

In this case obligations already assumed by the Parties shall remain into force to the extent necessary to permit the satisfactory conclusion of the ongoing activities mentioned in this Convention.

Any money paid before the termination of the Agreement will not be refunded.

**Article 9 – TERMINATION FOR MISCONDUCT OR NON-PERFORMANCE**

**A VOIR**

In the event of a total or partial violation or non-performance by one of the Parties of its obligations under Articles 1 to 8 of the Convention, the Party or Parties that allege a violation or non-performance of another Party may put that to run within two (2) months of receiving the recommended letter with acknowledgement after the **Parties** had this decision validated. The notice must specify the obligation or obligations to which the Formal notice must comply or face automatic termination of the Agreement against it.

After this period and for lack of the Party's notice to have met its obligations, the termination of the contract will be automatic the day after the end of the aforementioned deadline.

The exercise of this termination does not exempt the failing Party from fulfilling the obligations it would have incurred under these obligations until the date of the termination taking effect, subject to any damages to which it the aggrieved Party could claim because of the alleged violation and/or non-performance.

**Article 10 – Eventuellement FORCE MAJEURE**

In the event of a force majeure event preventing one of the Parties from executing or complying with one or more of its obligations on a temporary basis, the Party subject to the case of force must inform the other Parties as soon as possible. It must invoke it within the time specified in Article 9 in the event of a notice to be executed from the other Party under the terms of the aforementioned section.

Any case of force majeure preventing the execution for more than two (2) months of one or more obligations of the Prevented Party will entitle the other Parties to terminate the contract by registered mail with acknowledgement with the termination taking effect automatically the day after receiving the mail.

The starting point for calculating the aforementioned time frame in this article 10 is:

- i.e. the day the Party receives notification of the force majeure case,

- the day the mail was received, citing the case of force majeure following its formal notice.

Only the first event is the starting point.

However, the Convention may be terminated before its expiry date:

- at the initiative of one of the Parties, subject to written notification to the other Parties in cases where either one of the Parties would be placed in a state of judicial redress or liquidation of property, unless the judicial agent requested the continuation of this Agreement,

- by way of written notification of the Non-Failing Parties, in the event of a Party's serious breach of one of its obligations, if it is not remedied within three months of the finding of that breach

**Article 11 – PERSONAL DATA PROTECTION**

In the event of personal data processing in the context of this collaboration, the Parties undertake to comply with their obligations under the current regulations on the protection of individuals from the processing of personal data and the free movement of such data.

**VOIS SI BESOIN ET SYSTEME AMERICAIN**

**Article 12 – COMMUNICATIONS AND DOMICILES**

**Comment, où et qui joindre pour chacune des parties c’est-à-dire la personne de référence**

**Article 13 – DURATION – ENTRY INTO FORCE**

The Agreement is concluded for a period of XXX (X) years and enters into force on the date of the last signature of the parties involved in this document.

Six (6) months before its expiry, the Parties will consult to consider its possible renewal, which will have to be the subject of an endorsement signed by the Parties.

The provisions of Articles 4 and 5 will remain in force, notwithstanding the expiry of the Convention.

In the absence of an agreement within six (6) months of notification of the dispute by one of the Parties, the competent courts will be referred In the absence of an agreement within six (6) months of notification of the dispute by one of the Parties, the competent courts will be referred

The Convention is subject to U.S. law.

**Article 14 –SETTLEMENT OF DISPUTES- APPLICABLE LAW**

In the event of any dispute or difference arising out of the interpretation or implementation or application of the provisions of this Memorandum of Understanding, the Parties shall settle it amicably through consultation or negotiation that may result in appropriate amendments to this Memorandum of Understanding.

If no amicable agreement is reached within a period of thirty (30) days, any of the interested Parties may submit the dispute to a mutually acceptable form of dispute resolution such as, but not limited to, conciliation or mediation.

The settlement of the disputes shall be based on the present Memorandum of Understanding and on equity.

**Article 15 – ANNEXES - AMENDEMENTS**

Annexes to this agreement are an integral part of the agreement.

This Code of Conduct is provided in XXX (XX) original copies, one for each Party.