

ISTITUTO NAZIONALE DI FISICA NUCLEARE  
CONSIGLIO DIRETTIVO

DELIBERAZIONE N. 13607

Il Consiglio Direttivo dell'Istituto Nazionale di Fisica Nucleare, riunito a Roma in data 26 marzo 2015 alla presenza di n. 32 dei suoi componenti su un totale di n. 34;

- considerato che con deliberazione n. 13274 del 25 giugno 2014 il Consiglio Direttivo dell'INFN ha approvato il Framework Agreement tra il National Research Centre "Kurchatov Institute" (NRC-KI) e questo Istituto finalizzato al rafforzamento delle attività congiunte di ricerca e alla promozione della cooperazione scientifica su specifici progetti;
- preso atto che lo Steering Committee composto da rappresentanti INFN e dell'NRC-KI riunitosi in data 8 gennaio u.s., ha stabilito l'avvio di una collaborazione nell'ambito del progetto SOX (Short Oscillation with BoreXino) presso i LNGS che prevede l'impiego di una sorgente artificiale radioattiva e l'utilizzo del rivelatore e dell'infrastruttura di Borexino;
- ritenuto pertanto di dover procedere alla stipula di un Implementation Agreement n. 2 al Framework Agreement tra il NRC-KI e l'INFN finalizzato alla partecipazione dei gruppi di ricerca nelle attività di simulazione, presa dati e analisi dell'esperimento SOX-Ce;
- visto lo schema di "Implementation Agreement n. 2 to the Framework Agreement between the NRC-KI and INFN on the cooperation in the SOX-Ce Project", allegato alla presente deliberazione e di essa parte integrante;
- **atteso che l'approvazione di tale Accordo non comporta oneri finanziari per l'Istituto;**
- vista la nota del Direttore dei Laboratori Nazionali del Gran Sasso, Prof. S. Ragazzi, del 8 marzo u.s.;
- vista la nota del Presidente di Commissione Scientifica Nazionale 2, Prof. M. Pallavicini, del 27 febbraio u.s.;
- su proposta della Giunta Esecutiva;
- con n. 32 voti favorevoli;

DELIBERA

E' approvato lo schema di "Implementation Agreement n. 2 to the Framework Agreement between the NRC-KI and INFN on the cooperation in the SOX-Ce Project", allegato alla presente deliberazione e di essa parte integrante. Il Presidente è autorizzato a sottoscriverlo.

## **IMPLEMENTATION AGREEMENT N. 2**

to the **FRAMEWORK AGREEMENT**

between

the **NATIONAL RESEARCH CENTRE “KURCHATOV INSTITUTE”**  
(NRC “Kurchatov Institute”, Russia)

and

the **ISTITUTO NAZIONALE DI FISICA NUCLEARE**  
(INFN, Italy)

### **ON THE COOPERATION IN THE SOX-Ce PROJECT**

#### **1. SCOPE OF THE PROGRAM**

In accordance with the provisions set out in the Framework Agreement between NRC Kurchatov Institute and INFN, and following the decisions taken by the Steering Committee during its last meeting held on 8 January 2015, the Parties agree on the collaboration within the SOX (Short distance Oscillation with BoreXino) project aimed at the search of the electron antineutrinos transitions into sterile state in the experiment with an artificial radioactive source  $^{144}\text{Ce}$ . SOX experiment is planned to be carried out in the Gran Sasso Underground laboratories by means of Borexino detector and infrastructure.

#### **2. PARTICIPATING INSTITUTES**

On the Russian side the following institutions of the NRC “Kurchatov Institute” will participate in the project:

- Kurchatov Institute (responsible E. Litvinovich),
- Institute for Theoretical and Experimental Physics (responsible V. Kornoukhov)
- Petersburg Nuclear Physics Institute (responsible A. Derbin).

Coordination and general management of the Russian group’s participation are entrusted to the Director of the Particle Physics Department of the Kurchatov institute M. Skorokhvatov.

On the Italian side the following groups of the INFN will participate in the project:

- Genova
- Laboratori Nazionali del Gran Sasso
- Milano
- Napoli
- Perugia

Coordination and general management of the INFN groups’ participation shall be the joint responsibility of M. Pallavicini (P.I. of the SOX project) and of G. Ranucci (Borexino co-spokesperson).

Successors from each Institution may be designated and communicated in writing to the other Party.

### 3. ACTIVITIES TO BE PERFORMED

Both Parties will participate in the simulation of the experiment, in the shifts for the data taking and in the analysis of the recorded data. Both parties will discuss and cross checks the results of the analysis prior to their dissemination within the scientific community through papers and talks at conferences.

### 4. FINANCIAL RESOURCES

Financial support of the NRC “Kurchatov Institute” personnel at the Gran Sasso Underground Laboratories will be borne by the Russian Party.

If agreed between the Parties, the members of INFN and NRC “Kurchatov Institute” groups may provide assistance, organizational and technical support of the activity directed to  $^{144}\text{Ce}$  and  $^{51}\text{Cr}$  sources production and their delivery to the experiment location.

### 5. ENTRY INTO FORCE AND DURATION

This Implementation Agreement n. 2 shall enter into force on the date of signature by the last Party and shall have a duration of four (4) years. The renewal of this Implementation Agreement shall be subject to discussion between the Parties at least six months prior to the expiration of the period of validity. The Parties may agree to amend the present Implementation Agreement at any time. Any of them can terminate it by a written correspondence to the other Party one month in advance.

### 6. MISCELLANEA

Any publications arising from the results obtained from the Collaboration shall be jointly regulated.

For what not explicitly provided by this Implementation Agreement the terms and conditions set out in the Framework Agreement between NRC Kurchatov Institute and INFN shall continue in full force and effect.

For NRC “Kurchatov Institute”

For INFN

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Dr. Michail Popov  
Deputy Director

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Prof. Fernando Ferroni  
President