

MEMORANDUM OF UNDERSTANDING

BETWEEN

The Bundesamt für Strahlenschutz, GERMANY

and the

Bundeswehr Institut für Radiobiologie der Bundeswehr affiliated to the

University of Ulm, GERMANY

and the

Centre for Radiation Protection Research, Stockholm University, SWEDEN

and the

Commissariat à l'énergie atomique et aux énergies alternatives, FRANCE

and the

Agenzia Nazionale per le Nuove Tecnologie, L'Energia e lo Sviluppo

Economico Sostenibile, ITALY

and the

Fundacion para la Investigation del Hospital Universitario la fe de la Comunidad

Valenciana, SPAIN

and the

Helmholtz Zentrum München – Deutsches Forschungszentrum für Gesundheit

und Umwelt (GmbH), GERMANY

and the

Instytut Chemii i Techniki Jądrowej, POLAND

and the

Institutul National de Sanatate Publica, ROMANIA

and the

Institut de Radioprotection et de Sûreté Nucléaire, FRANCE

and the

Istituto Superiore di Sanità, ITALY

and the

Instituto Superior Técnico, Universidade de Lisboa, PORTUGAL

and the

National Center for Radiobiology and Radiation Protection, BULGARIA

and the

National Centre for Scientific Research "Demokritos", GREECE

and the

National Public Health Center, HUNGARY

and the

Norwegian Radiation Protection Authority, NORWAY

and the

Public Health England, UNITED KINGDOM

and the

Servicio Madrileño de Salud, Hospital General Universitario Gregorio Marañón,
SPAIN
and the
Universitat Autònoma de Barcelona, SPAIN
and the
Universiteit Gent, BELGIUM
and the
University of Tuscia, ITALY
and the
Army Medical and Veterinary Research Center, ITALY
and the
Studiecentrum voor Kernenergie/Centre d'Etude de l'Energie Nucléaire, [also
known as the Belgian Nuclear Research Centre], BELGIUM
and the
Dublin Institute of Technology, IRELAND
and the
Forschungszentrum Jülich GmbH, GERMANY
and the
Laboratori Nazionali di Legnaro of Istituto Nazionale di Fisica Nucleare,
ITALY
and the
University Sevilla, SPAIN
and the
Radiation Protection Centre, LITHUANIA
and the
French Army Biomedical Research Institute, FRANCE

CONCERNING
AN OPERATING NETWORK IN BIOLOGICAL DOSIMETRY
AND EPR/OSL DOSIMETRY

The Bundesamt für Strahlenschutz (BFS), Germany; the Bundeswehr Institut für Radiobiologie der Bundeswehr affiliated to the University of ULM (BIR), Germany; the Commissariat à l'énergie atomique et aux énergies alternatives (CEA), France; the Agenzia Nazionale per le Nuove Tecnologie, L'Energia e lo Sviluppo Economico Sostenibile (ENEA), Italy; the Helmholtz Zentrum München – Deutsches Forschungszentrum für Gesundheit und Umwelt (HMGU), Germany; the Instytut Chemii i Techniki Jądrowej (ICHTJ), Poland; the Institutul National de Sanatate Publica (INSP), Romania; the Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France; the Istituto Superiore di Sanità (ISS), Italy; the Instituto Superior Técnico, Universidade de Lisboa (IST), Portugal; the Fundacion para la Investigacion del Hospital Universitario la fe de la Comunidad Valenciana (LAFE), Spain; the National Center for Radiobiology and Radiation Protection (NCRRP), Bulgaria; the National Centre for Scientific Research “Demokritos” (NCSR), Greece; the National Public Health Center (NRIR), Hungary; the Norwegian Radiation Protection Authority (NRPA), Norway; the Public Health England, (PHE), United Kingdom; the Centre for Radiation Protection Research, Stockholm University (SU), Sweden; the Universitat Autònoma de Barcelona (UAB), Spain; the Universiteit Gent (UGent), Belgium; the University of Tuscia (UNITUS), Italy; the Servicio Madrileño de Salud, Hospital General Universitario Gregorio Marañón (SERMAS), Spain; the Army Medical and Veterinary Research Center (AMVRC), Italy; the Studiecentrum voor Kernenergie/Centre d'Etude de l'Energie Nucléaire (SCK-CEN), Belgium; the Dublin Institute of Technology (DIT), Ireland; the Forschungszentrum Jülich (FZJ), Germany; the Laboratori Nazionali di Legnaro of Istituto Nazionale di Fisica Nucleare (INFN), Italy; the University Sevilla (US), Spain; the Radiation Protection Centre (RSC), Lithuania; the French Army Biomedical Research Institute (IRBA), France hereinafter collectively called the “Participants”,

Whereas the importance, in case of a large-scale radiation accident or terrorism attack, to proceed, after the clinical triage of those persons who are potentially involved, to the estimation of the radiation doses in order to determine whether exposure will cause deterministic or stochastic effects;

Considering that, in the immediate post-exposure period, biological dosimetry can also be used in a triage mode to supplement the initial clinical triage by confirming highly irradiated patients who will require clinical intervention and also identifying wrongly diagnosed, false positive cases;

Considering that, later, the biological and EPR/OSL dosimetry will be extended, notably for selected cases that would be analyzed, to produce more accurate evaluation of high partial body exposure;

Whereas the need to handle potentially a large number of casualties following a major event and the little surge capacity of each organization that has only limited number of trained staff;

Anticipating the potential need for mutual assistance in such case to increase the number of samples handled and to achieve faster availability of results, either upon request from one of the Participants, or upon request from national authorities of countries that have no biological dosimetry or EPR/OSL dosimetry capacity, under terms to be determined later;

Considering that the Participants could form a nucleus to which laboratories from other States would join;

Considering the long-term sustainability of the network an annual membership fee is foreseen in the future to cover running costs;

Considering the long-term sustainability of the network rules for participation, e.g. regulations for paper and ownership, will be defined in the future in a consortium agreement;

Expressing therefore their support to establish a network under the name "RENEB" of specialized biological dosimetry units and EPR/OSL units to analyze blood samples or other biological samples or personalized devices for radiation-induced cytogenetic or other biological damage or physical changes;

Considering the need for activities to allow for comparable high quality standards of the biological methods and EPR/OSL techniques used for dose estimation;

State their understanding as follows:

- A. The Participants decide to create a network "RENEB" of specialized biological dosimetry units and EPR/OSL dosimetry units.
- B. The "RENEB" network includes the biological dosimetry organizations and EPR/OSL dosimetry organizations from the undersigned Participants; other biological dosimetry and EPR/OSL dosimetry organizations could join the "RENEB" network subject to the agreement of the current Participants.
- C. The purpose of the RENE network is to provide mutual assistance in case of radiological emergency, according to the conditions described here.

- D. The “RENEB” participants agree to cooperate in Quality assurance activities and in Education and Training events to assure comparably high quality standards of the established dose estimation techniques
- E. The “RENEB” participants agree to cooperate in the exchange of scientific information related to RENEB activities
- F. The “RENEB” participants agree to cooperate in the exchange of scientists and specialists related to RENEB activities
- G. The “RENEB” participants agree to cooperate in the exchange of research data and materials related to RENEB activities
- H. The “RENEB” participants agree to cooperate in the setup of an internal communication structure
- I. As the scale of an incident becomes apparent, the Participant in the country in which the event occurs decides whether biological dosimetry or EPR/OSL dosimetry can be carried out just in that country or whether to activate the network. Its organization is the lead organization .
In case there is more than one biological dosimetry or EPR/OSL dosimetry organization in a country, the organization which is officially authorized by the responsible authority will take the lead.
- J. After activation of the RENEB network, the lead organization informs the partners of the circumstances of the incident, and together they establish by writing the extent of cooperation needed.
- K. The Participants’ activities under this Memorandum of Understanding will be conducted in accordance with the laws and regulations under which each Participant operates.
- L. The Participants agree to contribute to pre-planning, reagent stockpiling, and sample processing in their organizations to be able to respond promptly to the activation of the RENEB network.
- M. Quality assurance activities shall be conducted within the assigned budget in all parties and subject to the applicable laws and regulations in each country.
- N. The Participants intend that the collaboration contemplated herein may commence upon signature. The terms of the cooperation may be altered at any time by mutual agreement in writing. If either Participant desires to terminate its activities hereunder, it will give 90 days’ advance written notice to the other Participants.
- O. The arrangements, written in this MoU shall be valid as long as no other arrangements are made.
- P. The MoU is not intended to be legally binding, and no legal obligations or legal rights shall arise between the Participants from this MoU.

Signed in 2 copies, in the English language. One remains with the signatory and one with RENE B coordinator. After all signatures are collected by the RENE B coordinator each signatory gets one copy of the MoU with all signatures. The originals will be kept by the RENE B coordinator.

For the Bundesamt für Strahlenschutz of Germany

Date June 26th, 2015

Place Oberschleißheim

Signature  _____

Name Dr. Thomas Jung
Direktor und Professor
Head of Department Radiation Protection and Health

For the Centre for Radiation Protection Research, Stockholm University of Sweden

Date 2015 06 18

Place Stockholm

Signature Andrzej Wojcik

Name (type name and position)

ANDRZEJ WOJCIK
PROFESSOR
HEAD OF CRPR

For the Agenzia Nazionale per le Nuove Tecnologie, L'Energia e lo Sviluppo Economico Sostenibile
of Italy



Roberto Morabito
Dipartimento Sostenibilità dei Sistemi
Produttivi e Territoriali

Date Il Direttore
Dr. Roberto Morabito

Place, *Rome*



27 OTT 2015

For the Fundacion para la Investigation del Hospital Universitario La Fe de la Comunidad Valenciana of Spain

Date June 8, 2015

Place Valencia, Spain

Signature _____



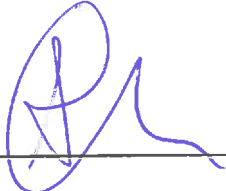
Instituto de
Investigación
Sanitaria La Fe

Name: Dr. José Vicente Castell Ripoll
General Director

For the Instytut Chemii i Techniki Jądrowej of Poland

Date Oct. 26, 2015

Place Warszawa, Poland

Signature 

Name Prof. dr hab. inż. Andrzej Grzegorz Chmielewski

Director General of the Institute of Nuclear Chemistry and Technology

For the Institutul National de Sanatate Publica of Romania

MINISTERUL SANATATII	
Institutul National de Sanatate Publica	
INTRARE	Nr. 7642
IEȘIRE	
Ziua...08...	Luna...06...20...

Date 08.06.2015

Place BUCHAREST

Signature _____



Name (type name and position)

Dr. CUCU MARIA ALEXANDRA

GENERAL DIRECTOR IASP

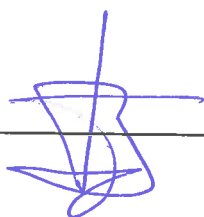


For the Institut de Radioprotection et de Sûreté Nucléaire of France

Date November, 13th 2015

Place Fontenay-aux-Roses

Signature _____

A handwritten signature in blue ink, consisting of several overlapping loops and lines, positioned above a horizontal line.

Name :

Jacques Repussard

Directeur Général

For the Istituto Superiore di Sanità of Italy

Date 28/09/2015

Place _Roma,

Signature:


Name: Prof. Gualtiero RICCIARDI - President

A handwritten signature in black ink, consisting of a large, stylized 'R' followed by a vertical line and a horizontal stroke.A handwritten signature in green ink, consisting of a series of connected, wavy lines.

For the Instituto Superior Técnico, Universidade de Lisboa of Portugal

Date 24th June 2015

Place Lisbon

Signature Arlindo Oliveira  **TÉCNICO LISBOA**

Name Arlindo Oliveira, President of IST

For the National Center for Radiobiology and Radiation Protection of Bulgaria

Date 05.06.2015_____

Place Sofia, Bulgaria


Signature _____

Radostina Georgieva, Director NCRRP

For the Norwegian Radiation Protection Authority of Norway

Date 06.07.2015

Place Østerås

Signature 

Name UNN Hilde Refseth
Director
Dep. Of Monitoring and Research

For the Public Health England, United Kingdom

Date 21/7/15

Place LONDON

Signature 

Name Dr Paul Cosford Director of Health Protection and Medical Director

MEMORANDUM OF UNDERSTANDING

CONCERNING

**AN OPERATING NETWORK IN BIOLOGICAL DOSIMETRY AND EPR/OSL
DOSIMETRY**

**For the Servicio Madrileño de Salud, Hospital General Universitario Gregorio Marañón of
Spain**

Date 17 JUN. 2015

Place: Madrid (Spain)

Signature _____

**Name: Ricardo Herranz Quintana (General Manager Hospital General Universitario
Gregoria Marañón**

On behalf of SERMAS

For the Universitat Autònoma de Barcelona of Spain

Date 21/5/2015

Place BELCATERRA


UB
Universitat Autònoma de Barcelona
Maria Pilar Dellunde i Clavé
Vicerectora d'Investigació

For the Universiteit Gent of Belgium

Date 8th June 2015

Place Ghent, Belgium

Signature 

Prof. Dr. Hubert Thierens, Head of the Radiation Protection Department - Radiation Protection Expert Class I

For the University of Tuscia of Italy

Date 02 LUG 2015

Place VITERBO

Signature IL RETTORE
Prof. Alessandro Ruggieri
AR



Name: Prof. Alessandro Ruggieri - Rector

AR

For the Army Medical and Veterinary Research Center of Italy

Date ___05 June 2015_____

Place ___Rome_____

Signature _____



Name Col. MD PhD Florigio Lista (Head, Department of Molecular Biology, Immunology and Experimental Medicine, Army Medical and Veterinary Research Center)

For the the Studiecentrum voor Kernenergie/Centre d'Etude de l'Energie Nucléaire

[also known as the Belgian Nuclear Research Centre], Foundation of Public Utility, SCK•CEN, with its Registered Office in Belgium, Avenue Herrmann-Debroux 40, BE-1160 BRUSSELS and its Operational Office also in Belgium, Boeretang 200, BE-2400 MOL, with enterprise number 0406.568.867 and VAT number BE406.568.867

Date: 2015-06-¹⁷

Place: Mol, Belgium

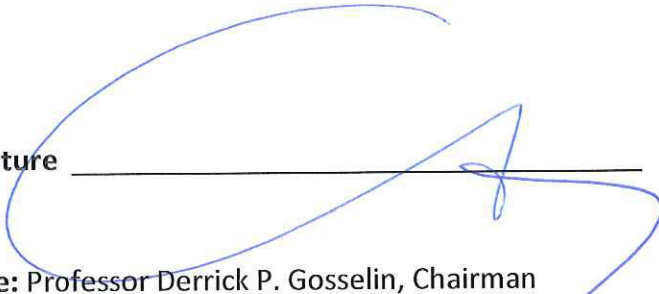
Signature 

Name: Professor Eric van Walle, Director-General



Date: 2015-06-¹⁷

Place: Brussels, Belgium

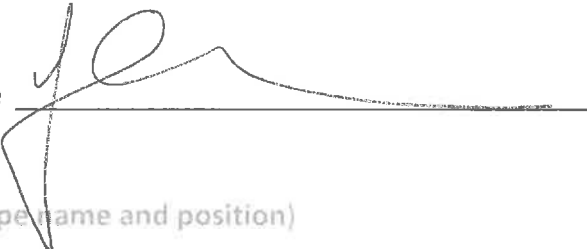
Signature 

Name: Professor Derrick P. Gosselin, Chairman

For the Dublin Institute of Technology of Ireland

Date 12/06/2015

Place Dublin, Ireland

Signature 

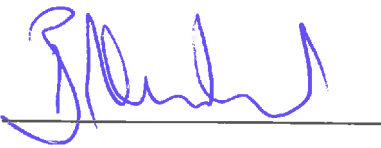
Name (type name and position)

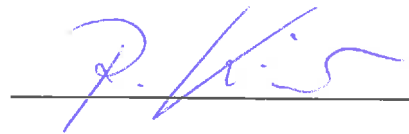
JOHN DONOVAN PH.D.
HEAD OF RESEARCH

For the Forschungszentrum Jülich GmbH of Germany

Date 08.10.2015

Place Jülich

Signature 



Name **Burkhard Heuel-Fabianek**
Head of Safety and Radiation Protection (S)

Dr. Ralf Kriehuber
Group Leader Radiation Biology

For the Laboratori Nazionali di Legnaro of Istituto Nazionale di Fisica Nucleare of Italy

Date 2 December 2015

Place Legnaro

Signature G. Fiorentini



Giovanni Fiorentini – Director of Laboratori Nazionali di Legnaro of INFN

For the University Seville of Spain

Date: October 19, 2015

Place: Seville



A handwritten signature in blue ink, consisting of several loops and strokes, positioned to the right of the seal.

Signature _____


Name: D. Julián Martínez Fernández

Vice-Rector for Research

For the Radiation Protection Centre of Lithuania

Date 2015-08-04

Place VILNIUS

Signature  _____

Name **ALBINAS MASTAUSKAS DIRECTOR OF RADIATION PROTECTION CENTRE**