EUROPEAN COMMISSION
JOINT RESEARCH CENTRE
Institute for Environment and Sustainability
Management Support Unit

Ispra, 11 03 2011
ARES(2011) [illegible]
by courier

NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY
OPTICAL TECHNOLOGY DIVISION
100 BUREAU DRIVE, MAIL STOP 8440
GAITHERSBURG MD 20899-8440
USA

to the attention of Mr. Gerald Fraser

Subject: Memorandum of Understanding no. 32232

Dear Sir,

Please find enclosed the signed original copy of the above mentioned MoU for your files.

Yours faithfully,

Catia Buresta

Encl.: original of the Memorandum of Understanding

I-21027 Ispra (Varese) Italy Office: TP 263
Telephone: direct line (+39)0332-78-9536 Fax: (+39)0332-78-9540

MEMORANDUM OF UNDERSTANDING

The European Union,
represented by the European Commission, represented for the purpose of signing this memorandum by Leendert Hordijk, Director of the Institute for Environment and Sustainability of the Joint Research Centre, duly entitled to sign,

(hereinafter referred to as '**the Commission**'),

and

The National Institute of Standards and Technology,
with the registered address at 100 Bureau Drive, Gaithersburg, MD 20899-8440, USA, represented for the purpose of signing this memorandum by Gerald Fraser, Chief of the Optical Technology Division of the Physical Measurement Laboratory , duly entitled to sign,

(hereinafter referred to as 'NIST').

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

PREAMBLE

WHEREAS:

The mission of the Joint Research Centre (hereinafter referred to as '**the JRC**') is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of European Union policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national. Through its Institute for Environment and Sustainability and in Ispra, the JRC conducts research in optical radiometry applied to the remote sensing for the monitoring of the global environment.

NIST promotes US innovation in industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve the quality of life. Specifically, as part of this effort, the Optical Technology Division develops optical radiation measurement tools, methods, and standards to support climate change research, land use change, the role of oceans in Earth science, and weather modelling and forecasting".

The Parties wish to establish a mutually beneficial cooperation in the field of marine optical radiometry in support of remote sensing in order to benefit from their complementary activities and assets and to share with each other the knowledge arising therefrom.

The Parties wish to undertake joint activities of mutual interest in accordance with their specific needs and objectives, and shall, by separate and formal agreements, determine the areas and subject of such joint activities, on the basis of the understanding set out in this Memorandum of Understanding (hereinafter referred to as '**the MoU**').

THE PARTIES HAVE AGREED AS FOLLOWS:

ARTICLE 1 – SUBJECT AND SCOPE OF THE MoU

1.1 The subject of the MoU is to establish the basis for future collaboration between the Parties in the field of marine optical radiometry in support of remote sensing by setting out the overall framework for such collaboration in terms of general context, technical areas and procedures for entering into formal agreements, detailing the specifics of the collaboration.

1.2 The envisaged collaboration between the Parties will be aimed at coordinating research activities in the fields of common interest (scientific subjects), specified in the Technical Annex 1, in order to ensure information sharing and efficient use of resources.

1.3 Each Party intends as a general rule to implement the MoU through the exchange of publicly available, non-proprietary information. Should the exchange of other information be necessary, the Parties shall enter into a separate legally binding non-disclosure without prejudice to the law applicable to the Parties, including without limitation the laws governing the right of public access to documents.

1.4 The Parties do not intend, or expect, to create intellectual property under the MoU. If it appears that intellectual property is likely to be created, the Parties either enter into a collaboration agreement in accordance with Article 1.5 or avoid the creation of intellectual property.

1.5 In case the Parties decide to undertake joint activities in any of the scientific subjects identified in the Technical Annex 1, they shall, prior to undertaking such activities, enter into a separate and formal collaboration agreement, covering the technical, legal (including liabilities of each Party and intellectual property rights) and financial aspects of the envisaged collaboration.

1.6 This MoU does not establish legally binding obligations or rights on the part of any of the Parties, including without limitation any financial obligation.

ARTICLE 2 – MODALITIES OF CO-OPERATION

2.1 The implementation of the MoU shall be subject to the availability of funds, personnel and other resources as well as to the applicable laws and regulations, policies and programmes of each Party. The MoU does not represent any commitment with regard to funding on the part of either Party.

2.2 Each Party shall bear its own costs in connection with the implementation of the MoU. There shall be no transfer of money between the Parties in connection with the MoU.

2.3 The exact modalities of cooperation between the Parties on any of the scientific subjects specified in the Technical Annex 1 will be set out in the collaboration agreements related to the particular subject.

ARTICLE 3 – ADMINISTRATIVE PROVISIONS

3.1 All correspondence concerning the performance of the MoU shall be sent to the following addresses:

For administrative questions European Commission Joint Research Centre Institute for Environment and Sustainability, Management Support Unit – TP 263 - I 21027 – Ispra (VA), Italy To the attention of Mr. Marco Cecchini	For administrative questions National Institute of Standards and Technology Physical Measurement Laboratory Office, 100 Bureau Drive, Stop 8400 Gaithersburg, MD 20899-8400, USA To the attention of Mrs. Karen Combs
For technical questions European Commission Joint Research Centre Institute for Environment and Sustainability , Global Environment Monitoring Unit, TP 272, I-21027 – Ispra (VA), Italy To the attention of Dr. Giuseppe Zibordi	For technical questions National Institute of Standards and Technology, Optical Technology Division, 100 Bureau Drive, Mail Stop 8441 Gaithersburg, MD 20899-8441, USA To the attention of Dr. B. Carol Johnson

ARTICLE 4 – ENTRY INTO FORCE AND DURATION

4.1 The MoU will enter into force on the date of its signature by the last Party and is concluded for a period of five (5) years from said date. The MoU may be extended or amended only by written agreement signed by the duly authorised representatives of both Parties.

4.2 Either Party may terminate the MoU at any time upon three months prior written notice to the other Party.

ARTICLE 5 – ANNEXES

5.1 The following annex shall form an integral part of the MoU:

Technical Annex

Signed in two originals in the English language.

For the **European Union**

Done in Ispra on 10.03.2011

Signature:

Leendert Hordijk
Director of the Institute for Environment and Sustainability
Joint Research Centre

For the **National Institute of Standards and Technology**

Done in GAITHERSBURG, MD on MARCH 22, 2011

Signature:

Gerald Fraser, Chief
Optical Technology Division
Physical Measurement Laboratory

TECHNICAL ANNEX 1

The general objective of this Memorandum of Understanding (MoU) is to contribute more effectively to the development of methodologies applied to satellite ocean colour observations. In particular, this MoU will foster cooperation between the Joint Research Centre (JRC) and the National Institute for Standards and Technology (NIST) in the development and assessment of field and laboratory radiometric methods supporting satellite ocean colour calibration and validation activities.

To achieve the objectives of the MoU, NIST and JRC intend to take the following actions:

1. Initiate and maintain a dialogue on optical radiometric measurements for satellite ocean colour applications, focusing on absolute radiometric calibrations and uncertainty assessment of *in situ* radiometric products;
2. Exchange scientific and technological information.

The exchange of research results, if deemed advantageous, shall be performed through joint seminars, workshops, and conference sessions subject to terms and conditions agreed upon between the Parties.