

ADDENDUM

to

THE MEMORANDUM OF UNDERSTANDING  
FOR A MULTI-LATERAL COLLABORATION

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between

THE INSTITUTIONS AND FUNDING AGENCIES  
OF THE CTF3 COLLABORATION

concerning

the third phase of

THE CONTRIBUTION OF THE INSTITUTE OF APPLIED PHYSICS (IAP) OF  
THE RUSSIAN ACADEMY OF SCIENCES

TO THE CLIC/CTF3 COLLABORATION

January 2011

**CONSIDERING:**

The Memorandum of Understanding (the "MoU") defining the framework applicable to the construction of a 3<sup>rd</sup> generation Compact Linear Collider Facility (CTF3) and the performance of Experiments to demonstrate the feasibility of key issues of the CLIC scheme:

The Article 1.2 of the MoU envisages defining each contribution pledged to the CTF3 Collaboration.

**The Institute of Applied Physics (IAP)**, in its capacity as a Member of the CTF3 Collaboration, **HEREWITH AGREES** to make the following contributions in the research and development of the photo-injector laser setup at CERN:

**1. Development of harmonic generation stages for high average power long burst operation mode as specified for optional CLIC drive beam photoinjector.**

IAP will create a fast math code for simulation of harmonic generation considering heat (caused by linear and nonlinear absorption) leading to temperature phase-mismatch, crystal tension and so on. The input data and validation of the code will be obtained experimentally at the laser installations at CERN, IAP and JINR (Dubna). The cost of the code development will be covered by CERN (65000 Euros) and by JINR (15000 Euros) in the frame of existing IAP-JINR MoU. The duration of this work is 2 years.

**2. Assistance in construction and installation of the laser for CALIFES probe beam photoinjector.**

A single multi-pass short-burst amplifier specified to CALIFES photoinjector requirements is being constructed at CERN. It will be implemented into the photoinjector laser installation together with existing 1.5 GHz oscillator in replacement of steady-state amplifiers. Laser specialist from IAP will take part in the final stage of its assembling, installation and commissioning at CERN. The duration of this work is 6 months.

CERN will provide payments of a daily subsistence for IAP personnel during their work at CERN in the amount of up to four man-months.

This Addendum shall form an integral part of the MoU.

Done in Geneva on 2011 - 01 - 17

For CERN:

The CLIC study leader



For the INSTITUTE OF APPLIED PHYSICS (IAP)

Nizhny Novgorod Director, Professor A.G. Litvak

