ISTITUTO NAZIONALE DI FISICA NUCLEARE
CONSIGLIO DIRETTIVO

DELIBERAZIONE N. 10289

Il Consiglio Direttivo dell'Istituto Nazionale di Fisica Nucleare, riunito a Roma il 28 settembre 2007, alla presenza di n. 32 suoi componenti su un totale di n. 36 :

- visto il Memorandum of Understanding tra INFN-LNF e lo Stanford Linear Accelerator Center (SLAC) firmato nell'aprile 2004 e relativo a "establishing a collaborative research effort in the field of photoinjectors and electron beam acceleration, compression and diagnostics";

- visto l'art. 2 par. 2 del suddetto MoU che rimanda alla stipula di "technical annex agreements" per lo svolgimento di specifiche attività individuali tra le Parti;

- tenuto conto della volontà espressa dalle Parti di rafforzare la collaborazione tecnica tra l'Accelerator Technology Research Department di SLAC ed i Laboratori Nazionali di Frascati dell'INFN;

- **visto che l'Accordo non comporta oneri finanziari aggiuntivi a carico dell'Istituto oltre a quelli già assegnati a tale scopo ai LNF negli esercizi di competenza;**

- considerato lo schema di "Technical Annex n. 2 to the Memorandum of Understanding between the Istituto Nazionale Fisica Nucleare and the Stanford Linear Accelerator Center (SLAC)" relativo alla collaborazione nel campo dei foto iniettori, accelerazione e diagnostica di fasci di elettroni, allegato alla presente deliberazione e di essa parte integrante;
- vista la nota del Direttore dei Laboratori Nazionali di Frascati, Prof. Mario Calvetti, del 18 luglio u.s.;

- su proposta della Giunta Esecutiva.;
- con n. 32 voti favorevoli;

DELIBERA

E' approvato lo schema di "Technical Annex n. 2 to the Memorandum of Understanding between the Istituto Nazionale Fisica Nucleare and the Stanford Linear Accelerator Center (SLAC)", allegato alla presente deliberazione e di essa parte integrante. Il Presidente è autorizzato a perfezionarlo e a sottoscriverlo.

(27-9/35)

Technical Annex n^0 2

To the Memorandum of Understanding

between

Istituto Nazionale di Fisica Nucleare – Laboratori Nazionali di Frascati (LNF)

and

the Stanford Linear Accelerator Center (SLAC)

Recalling the long-lasting tradition of friendship and scientific collaboration between SLAC and INFN:

Considering the Memorandum of Understanding between INFN-LNF and SLAC "establishing a collaborative research effort in the field of photoinjectors and electron beam acceleration, compression and diagnostics" signed on April 22, 2004;

Taking into account art. 2, para. 2 of the above-mentioned MoU stating that "details of the individual activities pursued within the frame of this MoU will be documented as technical annex agreements between the respective participating Parties";

The purpose of this Technical Annex n^0 2 is to create the framework for collaboration between the Accelerator Technology Research Department (ATR) at the Stanford Linear Accelerator Center (SLAC) and the Istituto Nazionale Fisica Nucleare (INFN). The goal of this collaboration is to work closely on design studies, fabrication and high power operation of X-Band RF accelerator systems.

INFN is currently working on the SPARC/X SASE-FEL project. There is a promising proposal of X-Band option for the beam acceleration from 0.3 GeV or 0.5 GeV to 1 GeV and beyond. They are facing many challenges in X-Band RF technologies. Also, the INFN is interested in the high gradient RF performance for various structures and materials.

The Accelerator Technology Research Department (ATR) at SLAC is engaged in advanced high gradient research for future colliders. Being the host of the US collaboration for High Gradient Research, SLAC enjoys unique world class facilities for experimental work with ultra-high power RF systems at X-Band. Further, the Accelerator Technology Research Department at SLAC has expertise in the design, construction, and operation of complex high power RF system. A broad knowledge and experiences have been accumulated in design method and design practice for various traveling wave, standing wave accelerator structures, pulsed compression systems as well as their fabrication and high power operation.

Collaboration between SLAC and INFN on high gradient research and related accelerator technologies, will allow SLAC to further advance the X-Band technologies and benefit from some important accelerator related projects in the world. At the same time, it will allow INFN access to SLAC's expertise, and testing facilities.

SLAC's ATR and INFN will collaborate on the following aspects:

1. X-Band accelerator design for optimized RF parameters;
2. System integration and components design for X-Band pulsed compression system;
3. Mechanical design and fabrication technologies;
4. High gradient RF technology, including experimental tests at SLAC facilities for INFN fabricated structures and components.

By this Technical Annex n^0 2, the undersigned indicate their intention to collaborate on the study and implementation of all aforementioned issues.

Both laboratories will support this collaboration within their normal operation budget. If not specifically agreed otherwise the general rules of the Memorandum of Understanding shall apply.

For SLAC

Sami Tantawi
Prof. Sami Tantawi
Head, Accelerator Technology
Research Department, SLAC

Date: Aug. 8, 2007

For INFN

ISTITUTO NAZIONALE FISICA NUCLEARE
PRESIDENTE
INFN

Prof. Roberto Petronzio
President of INFN

Date: - 8 OTT. 2007

Prof. Persis Drell
Head, Acting Accelerator Research Division, SLAC

Date: 8-13-2007

Prof. Steve Kahn
Director, Particle Physics and Astrophysics Directorate, SLAC

Date: 8-13-2007