



LETTER OF INTENT

between : Central Laser Facility, STFC (UK)
: Institut Lasers et Plasmas

for a common approach to the realisation and scientific exploitation of PETAL as a first step to HiPER, and HiPER.

1. We share a common vision of Europe taking a leading role in the field of high energy density science, with particular application to Inertial Fusion Energy. As co-proposers of the HiPER project on the ESFRI roadmap we see this development as a key objective for the next decade.
2. We will seek to realise our common vision via a 3-stage process:
 - a. We will work together on existing facilities (at the CLF, LULI and CESTA) and use technical and scientific expertise in the UK and French laboratories to develop detailed plans and an agreed specification for the next generation of facilities (PETAL, then HiPER). We will work to ensure a balanced approach, making best use of the talent in the UK, France and across Europe.
 - b. We will work together to ensure the PETAL facility is realised in the Région Aquitaine and operates as effectively as possible to address key issues related to the pursuit of IFE and associated basic science. In this context we view PETAL as an important stepping stone towards the HiPER facility, and an exciting scientific opportunity in its own right.
 - c. We will work together to ensure the HiPER facility is realised as part of the ESFRI and European Framework Programme processes. We will strive to make optimum use of European, National and Institutional resources during the Preparatory Phase project, and any subsequent construction / operation phases if approved. Our objective will be to enable a positive decision to construct by a consortium of nations, with the UK and France taking a leading role.
3. We will seek to use the following mechanisms to deliver our objectives. This collaboration relates solely to unclassified information, as determined by each party regarding its own information.
 - a. Development of a coordinated experimental science programme making use of laser facilities in the UK and France via a joint approach to prioritising facility access
 - b. Close coordination of our theoretical and numerical modelling work to create an agreed set of "point designs" and an agreed "baseline model" approach

to complex experimental problems, and in particular to set the specification for HiPER

- c. Joint experimental work, diagnostic development and target fabrication for PETAL and subsequently HiPER.
 - d. Exchange of laser facility designs, knowledge and techniques to ensure an optimum approach to the development of PETAL and HiPER
 - e. Pooling of our expertise in laser facility operation, including secondment of staff where appropriate, to make the most effective use of PETAL and HiPER
 - f. We will seek funding for joint contributions to the cost of PETAL and HiPER construction and operation, at a level to be determined by mutual agreement.
4. We believe that this mutual collaboration will enable us to be fully competitive at the international level. It represents a significant step in the integration of the high energy-density and Inertial Fusion Energy scientific community in Europe. This integration will allow us to achieve the highest coherence in the use and planning of experimental facilities, thereby advancing more rapidly the state of knowledge in this promising field.

Signed on 16th April 2007

in Palaiseau

by



Mike Dunne
on behalf of the
Central Laser Facility,
Science and Technology Facilities Council, UK



Christine Labaune
on behalf of the
Institut Lasers et Plasmas
France