

Déclaration de stratégie Erasmus – IOGS - 9 May 2013

The Institute was founded in the early 20th century and endowed with a triple mission: to train optical engineers and provide support in optics and photonics for industry; to develop optical science and the optics industry in France through research in theoretical and applied optics; to transfer knowledge and technology to industry.

Detailed mobility statistics for the Diplôme d'Ingénieur students are kept since 2008. International experience is not compulsory, but recommended and encouraged. Students may undertake international mobility during one of their compulsory placements, during a year out or as degree-seeking students in a partner institution. Over the past 4 years, an average 13% of 1st year students, 34% of 2nd years and 9% of 3rd years have undertaken placements abroad.

The number of students undertaking degree seeking study abroad is just over 10% (having risen from 7 to 12%); interest in the ATHENS programme which involves taking a one-week course in another European country has risen from 11 to 23% in the same period. Taken per cohort, 63% the 2011 cohort (2008-11) and 69% of the 2012 cohort (2012-2012) undertook a placement or course of study of at least one year abroad. We are aiming for 20% of students on degree-seeking study abroad (with a preference for Europe) and 75% of the cohort spending at least 3 months abroad.

The number of incoming students remains low on the engineering course but somewhat higher on the Master courses. We hope to balance incoming and outgoing student flows on the engineering degree and increase international recruitment on the Master courses.

a) The Institute is a relatively young establishment. Teaching activities began in 1920, but because of the Institute's highly specialized nature (applied and theoretical optics and photonics) the choice of partners is determined by the subject area.

Optics and optical systems are present in a wide range of hi-tech sectors of engineering, including energy, telecommunications, microelectronics, nanotechnology, medicine and biology, transport and aeronautics and the

aerospace industry; the demand for skilled engineers in optics is high.

The Institute, with an intake of approximately 110 students per year, it is one of the largest schools of Optics in Europe in terms of degrees awarded each year and is a major research centre in the field of theoretical and applied optics and photonics. Our research groups work with leading research groups all over the world; frequently excellent research groups exist in establishments where optics is not a speciality at undergraduate level, which limits student mobility in these areas.

b) Geographical areas are not a priority in themselves; the real priority is establishing partnerships abroad wherever good optics is taught. We can also provide sound training to good students in Electronics wishing to specialize in Optics. We have partner establishments in the USA, Russia and Brazil (including 3 Brafitec agreements) which we hope to develop further, and we wish to develop links with India. We also wish to start a programme with selected Chinese universities in collaboration with French companies working in France and China. Encouraged by the results of our OpSciTech EMMC (2007-13) we wish to develop a European network of double master degrees in Optical Sciences and complementary subjects. We currently work with establishments in Finland, Germany, the Netherlands, Poland, Sweden and UK and wish to enlarge this further with Denmark, Norway and Spain. There are two priorities: mobility of European students and attracting non-European students. Our EMMC has shown that many bright students from third countries remain in Europe after graduation to undertake PhDs.

c) Target groups for the above projects would be students in final 2 years of Diplôme d'Ingénieur and 1st and 2nd year Master students. A Master + PhD track could be envisaged. Student flows are currently very asymmetrical; incoming and outgoing flows are approximately equal, but French students tend to choose USA, UK and Sweden, whereas incoming students are mainly from Brazil, China and Russia.

d) We currently have a double-degree programme with Engineering Physics at KTH in Sweden. Both courses are 5 years long, but the two can be combined in 6 years and the Diplôme d'Ingénieur and Civilingenjör degrees are awarded to successful students. We also have a double Master degree (1 year here, 1 year there) model with universities in Finland, Holland, Germany and Poland which is built on full recognition of the 60 ects studied at the other university in 1st or 2nd year.

Together with our German and Finnish partners we have explored the possibility of awarding joint degrees between two establishments and hope to introduce this from the 2013-15 cohort of Master degree students. We shall apply for support from the Université Franco-Allemande at the coming session for the Franco-German side of the project.