ICT brings the virtual patient closer to reality

Brussels, 26 May 2011: The Information Technology Future of Medicine (ITFoM) project held its kick-off meeting in Amsterdam on 24-25 May 2011. The aim of ITFoM is to develop models of human pathways, tissues, and ultimately of the whole human, to create a “virtual patient” which will enable physicians to identify personalised prevention schedules and treatments adapted to each person. “Amsterdam was the kick start of the virtual patient”, said Hans Lehrach, Director at the Max Planck Institute for Molecular Genetics, and The Dahlem Centre for Genome Research and Medical Systems Biology in Berlin, Germany, and coordinator of ITFoM. “It will revolutionise medicine. We have to switch from personal-intensive medicine, which becomes more and more unaffordable, to computation-intensive medicine.”

The potential benefits are enormous in terms of reduction of healthcare costs as well as for each individual patient: identification of efficient drug combinations on an individual basis; substantial advances in disease prevention and treatment; better data access and use for health professionals, healthcare systems, and researchers.

Innovation in Information and Communications Technology (ICT) and computing has been primarily driven by the requirements of physics and commercial applications such as entertainment. But the growing requirements of individualised medicine are likely to surpass those of all other ICT development fields in the near future. Achieving data-rich, individualised medicine poses unprecedented challenges for ICT in terms of hardware, storage and communication. ITFoM proposes medicine – therapy, drug development –, based on molecular, physiological, anatomical and environmental data from individual patients. To develop this ICT-driven medicine of the future, ITFoM will amalgamate four major areas: medicine itself, analytical techniques such as genomics, ICT developments, and data integration.

ITFoM brings together world leading research groups from across Europe and beyond. The kick-off meeting brought together 49 participants from 31 institutions and companies from 20 countries. Industry representation was high, with a number of multinational companies such as IBM, Intel, XEROX, Roche, Illumina, Life Technologies and Agilent. SMEs were also well represented. ITFoM will enable the prediction of health, disease, therapy and the effects on individual patients and through application in the clinic will change the future of medicine.

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Editor’s note:

ITFoM is one of the six pilot projects preselected to become a European Future Technologies (FET) Flagship Initiatives. FET Flagships are large-scale, science-driven and mission oriented initiatives that aim to achieve visionary technological goals. To prepare the launch of the FET Flagships, the six Pilot Actions are funded with 1.5 million Euros each for a 12-month period starting in May 2011; in the
second half of 2012, two of the Pilots will be selected and launched as full FET Flagship Initiatives in 2013.