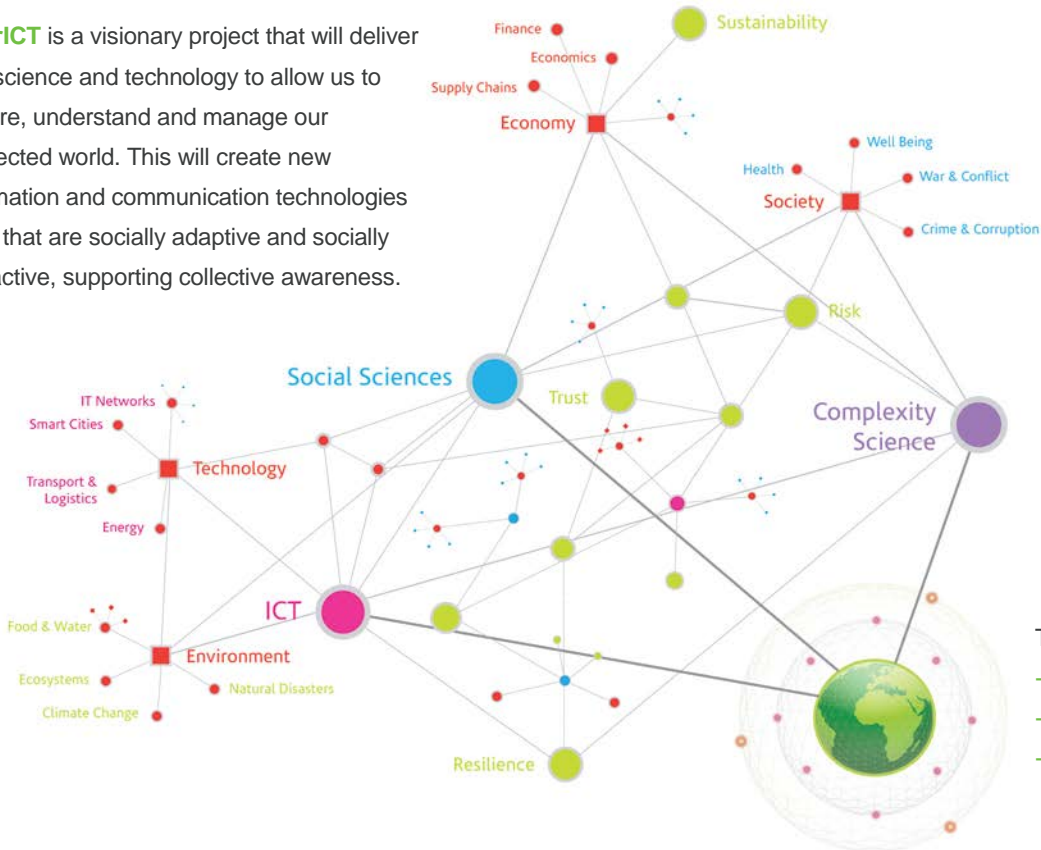




FuturICT is a visionary project that will deliver new science and technology to allow us to explore, understand and manage our connected world. This will create new information and communication technologies (ICT) that are socially adaptive and socially interactive, supporting collective awareness.



- The FuturICT Platform:
- Planetary Nervous System
  - Living Earth Simulator
  - Global Participatory Platform

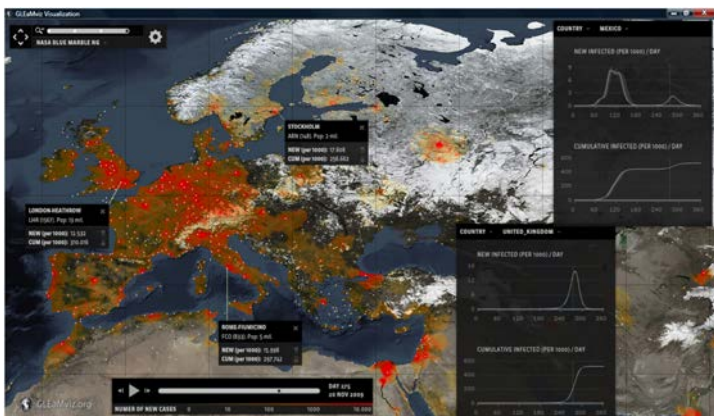
## Global Health Observatory

FuturICT will build a sophisticated framework for simulation, visualisation and participation, called the FuturICT Platform. A suite of models forming the Living Earth Simulator will power Observatories, to detect and mitigate crises plus identify opportunities in specific areas. These models will be driven, and calibrated, by data aggregated in real-time, which are gathered by a digital Planetary Nervous System. Both models and data will support the decision-making of policy-makers, business people and citizens, through a Global Participatory Platform which is intended to facilitate better social, economic and political participation. Exploring interactions among society, technology, environment and the economy will promote innovation.

The Global Health observatory proposes a visionary research aimed at developing the needed modelling, computational and ICT tools to face global health challenges. To reach this goal, a true progress in knowledge production and understanding of socio-technical systems is needed as well as a systematic redesign of the research approach in terms of data integration and multidisciplinary efforts. The overarching ambitious goal is the establishment of a European-wide infrastructure that through computational thinking, complex systems concepts and data generation and integration tools will enable a paradigm change in the way we approach the large-scale modelling, forecast and policy making approach to global health problems.

# Transforming the way we approach global health issues

The current threats of pandemic influenza, HIV and XDR tuberculosis, and recent threats such as SARS and the potential release of bioterrorist agents, raise major urgent concerns with regard to public health preparedness, risk management and decision making processes. As we demand ever-increasing predictive power to anticipate future health crisis and evaluate associated risks, we understand that any progress in this area must consider the complexity inherent to the biological, social and behavioural aspects of health related problems. Knowledge, data and resources need to be generated, accessed, shared and integrated among epidemiologists, computer scientists, mathematical biologists, information scientists, medical scientists and policy makers. The global health observatory will define a European-wide infrastructure that taking advantage of our capability to capture, warehouse, and understand massive amounts of data will be able to: a) decode the patterns and trends hidden in the integration of multiple data streams; b) provide new quantitative and predictive modelling of global health systems; b) detect and assess in real time the risk of specific health crisis; c) improve contingency planning by model driven analysis of cooperation on resources, logistic support and other associated processes in the context of health crisis prevention and mitigation.



Computational Platform for epidemic modelling



Real time Influenza monitoring platform

## Novel methodology

By working with a truly global community and interdisciplinary methodology the global health observatory will spearhead a novel approach to global health based on the following aspects

- Community/interdisciplinary approach.
- Dealing with complex realities: the identification of general principles and laws that capture the essence of complex health systems:
- Computational thinking: integration of expertise, techniques, and methodologies for computational and data-intensive science.
- Innovative use of Information and Communication Technologies (ICT) to gain knowledge on human, social and economic systems.
- New techniques for the generation of hybrid models integrating synthetic and real world data.
- Generation of new of tools and computational models that can support policy makers
- Real time detection of global trends and assessment of the impact on the population of systemic risk.

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