

ELIXIR

A distributed infrastructure for life-science information



Description

The distributed infrastructure for life-science information (ELIXIR) is a unique initiative that consolidates Europe's national centres, services, and core bioinformatics resources into a single, coordinated infrastructure. By coordinating these resources, ELIXIR supports the data-related needs of Europe's 500,000 life-scientists and helps address the Grand Challenges across life sciences from marine research via plants and agriculture to health research and medical sciences.

In 2013, ELIXIR became a permanent legal entity following the ratification of the ELIXIR Consortium Agreement (ECA) by EMBL and the first five countries. The countries that have signed the ECA are full members of the ELIXIR Board. Additional Observer countries (Greece, Ireland and Slovenia) are progressing the ratification of the ECA.

Activity

ELIXIR is an inter-governmental organisation, which builds on existing data resources and services within Europe. It follows a Hub and Nodes model, with a single Hub located alongside EMBL-EBI at the Wellcome Genome Campus in Hinxton (Cambridge, UK) and a growing number of Nodes located at centres of excellence throughout Europe, which coordinate nationally the bioinformatics services within that country. The ELIXIR Hub accommodates the ELIXIR Executive Management and Secretariat, coordinates and supports integration of services run from the ELIXIR Nodes, has overall responsibility for developing and delivering the ELIXIR Programme and managing ELIXIR-funded activities carried out by Nodes.

ELIXIR Nodes, sited throughout ELIXIR Member States, run the resources and services that are part of ELIXIR. These include: data deposition resources for depositing data safely and securely; added-value databases providing researchers with access to well curated data; bio-compute centres for cloud computing and analysis; services for the integration of data, software, tools and resources; training; and standards, ontology and data management expertise. For example, the ELIXIR Tools and Service registry is a discovery portal for researchers to access over 2,100 life science databases and analysis tools.

ELIXIR will ensure that users – individual scientists, large consortia or indeed other research infrastructures – can easily access data resources that are sustainable, built on strong community standards, and safeguarded in the long-term.

Impact

Industry's interest in, and usage of, Europe's bioinformatics resources is high as demonstrated by the 110 million hits from commercial users to the EMBL-EBI website in 2014. Promoting the future innovation potential and industry impact is an important objective of ELIXIR. This clearly extends beyond the obvious industry "users" of data and related services, and includes professional data publishers, SMEs providing data and bioinformatics services and tools as well as hardware and infrastructure providers.

Open life science data drives major societal value and truly facilitates researchers to solve the Grand Challenges. For example the identification of novel risk factors for Alzheimer's disease based on a large-scale meta-analysis are founded on prior estimates on human genetic variation calculated from public datasets such as the 1,000 Genomes. The development and validation of drug-design tools, many of which have been successfully commercialised, has relied on carefully curated datasets extracted from publicly archived data resources such as the Protein Data Bank. This integrated infrastructure is essential for European life science research as the enhanced technical architecture will facilitate access to well-curated data, international collaboration and ultimately play an integral role in the transformation of bio-industries.

ELIXIR's Innovation and SME programme ensures that high-tech companies across Europe can access the services run by ELIXIR partners; over one hundred such companies have so far benefitted from bespoke events targeting the pharma and agri-tech sectors.

A sustainable infrastructure for interoperability of public biological and biomedical data resources

TYPE: distributed
COORDINATING COUNTRY: UK
MEMBER COUNTRIES/ENTITY: BE, CH, CZ, DK, EE, ES, FI, FR, IL, IT, NL, NO, PT, SE, UK, (EMBL)

PARTICIPANTS: EL, IE, SI

TIMELINE

- ESFRI Roadmap entry: 2006
- Preparation phase: 2007–2013
- Construction phase: 2013–2020
- Operation start: 2014
- Legal status: ELIXIR Consortium Agreement, 2013

ESTIMATED COSTS

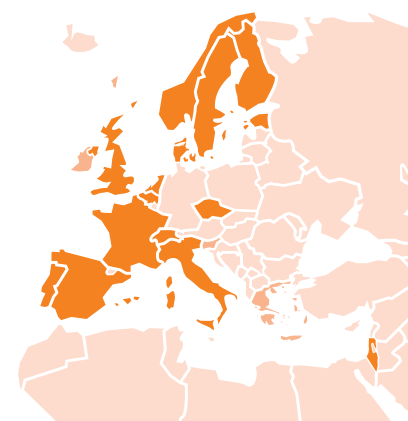
- Capital value: 125 M€
- Operation: 95 M€/year

HEADQUARTERS

Wellcome Genome Campus
 Hinxton
 United Kingdom

WEBSITE

<http://www.elixir-europe.org>



UNITED KINGDOM