

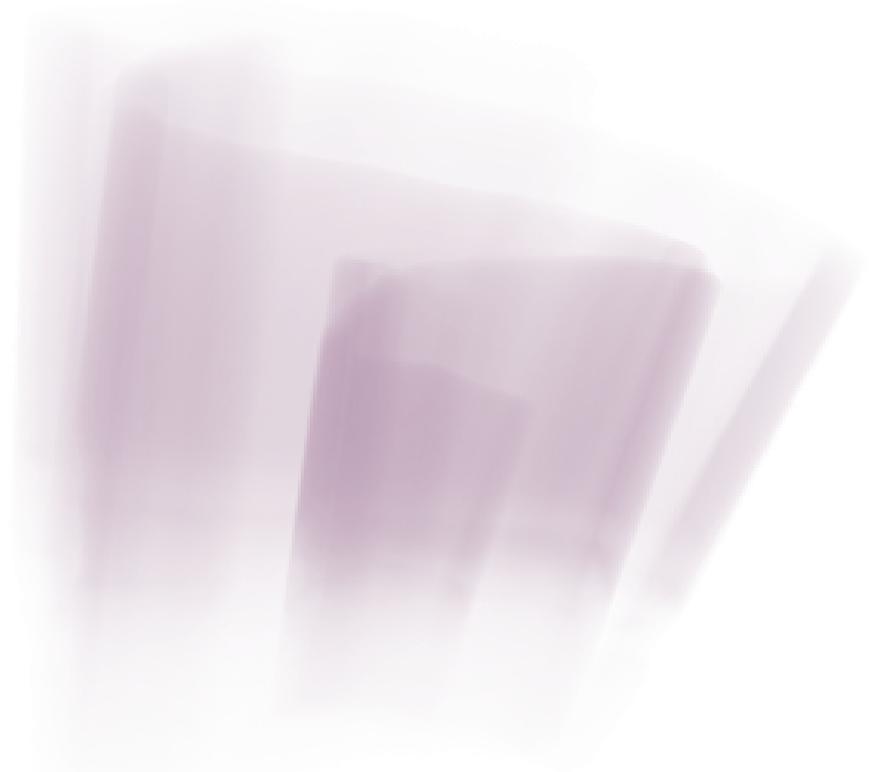
**Technology Strategy Board**

Driving Innovation



# Internet of Things ecosystem demonstrator

**COMPETITION FOR DEMONSTRATOR FUNDING  
OCTOBER 2012**



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## COMPETITION FOR DEMONSTRATOR FUNDING

### Summary

The Technology Strategy Board is investing up to £4m in a competition to stimulate development of an open application and services ecosystem in the Internet of Things (IoT).

The Internet of Things – the trend for environments and objects to become more connected and to have more information associated with them – has the potential to stimulate large scale investment, create jobs and bring substantial economic growth. The number of connected objects is estimated to reach 50 billion by 2020, and the potential added value of services using the Internet of Things is likely to be counted in hundreds of billions of pounds a year, with new business models, applications and services across different sectors of the economy.

For Phase 1 of the demonstrator we have allocated up to £2.4m and we are awarding up to £800k each to consortia to carry out 12-month projects funded at 100% of eligible costs. A further £1.6m is available in the second phase for scaling up the demonstrator.

In Phase 1 we are asking consortia to develop Internet of Things clusters. The clusters can be described as real-world scenarios, which include stakeholders with problems to be solved, application developers, owners of data streams from physical 'things' and technology businesses who can make this data available and usable via open information hubs. These clusters will form the heart of the demonstrator, tackling interoperability by agreeing and sharing data formats and external interfaces to the information hubs, and by co-ordinating and sharing their respective data.

This is a two-stage competition covering both phases of the demonstrator and is open to any consortium. Each consortium should consist of a prime contractor working with partners as sub-contractors

and will need to include use case/ problem owners, data owners, and technology organisations. It opens on **15 October 2012** and the deadline for registering is noon on **14 November 2012**. The deadline for receipt of expressions of interest is noon on **21 November 2012** and full proposals must be received by noon on **30 January 2013**. Applicants should expect to start their projects no later than **1 April 2013**.

### Background and challenge

The Internet of Things describes the trend for environments, buildings, vehicles, clothing, portable devices and other objects to have more and more information associated with them and/or the ability to sense, communicate, network and produce new information. A widespread Internet of Things could transform how we live in our cities, how we travel, how we manage our lives sustainably, how we age and how services and entertainment accompany us and adapt as our surroundings change.

The development of a data-driven, open ecosystem of connected 'things' has the potential to achieve the same exponential rate of innovation and wealth creation as we have experienced with development of the internet.

However, this new revolution is being held back by issues such as cost, lack of interoperability and poor levels of standardisation, incompatible data formats, concerns over ownership and trust, lack of effective mechanisms for sharing data, conflicting incentives to invest and untested business models.

Between March and June 2012 the Technology Strategy Board funded 10 preparatory studies that delved, in a variety of real-world scenarios, into a practical understanding of the barriers to developing these ecosystems and potential ways of addressing them.

In our preparatory studies and discussions with business, we identified a number of features which characterise a successful demonstrator and the challenge being addressed by this competition is to achieve the following outcomes:

- to help organisations to make more data from 'things' discoverable and accessible while taking account of issues such as ownership, security and privacy
- to have 'information hubs' where this data can be aggregated and made accessible at scale for application and service prototyping
- to help drive interoperability with a consensus on data formats, open interfaces and service enablers with buy-in across multiple sectors and application areas
- to focus on a small number of well-defined clusters, geographical or topical, where ecosystem concepts and solutions to the challenges can be developed and demonstrated cross-sectorally and/or geographically
- to proactively and continuously involve problem owners, application and service developers and technology providers.

The summary and the full reports from the studies are available on <https://connect.innovateuk.org/web/iot-convergence-preparatory-studies-2012/> and potential applicants are encouraged to review them.

### Scope

We are inviting proposals from consortia to develop the Internet of Things ecosystem demonstrator.

In **Phase 1** we will be awarding contracts to consortia, each to develop an **IoT cluster** to address the challenges set by this competition. Subject to successful outcomes, we will award a follow-on contract in **Phase 2** to scale up the demonstrator.



Each Phase 1 project will need to develop an IoT cluster which encompasses the following:

- a geographical location such as a shopping centre, campus or neighbourhood or an application which addresses a topical issue such as smart transport or logistics, all with sufficient critical mass and with the full engagement of key stakeholders
- a material amount of data streams from 'things' made available from a variety of sources, including from the other funded consortia
- an information hub with services and interfaces to enable the data to be used for application and service development by parties inside and outside of the consortium
- active engagement and trials of applications and services by other organisations (especially SMEs), using the cluster's data and services via the information hub.

Addressing interoperability in real-world scenarios is one of the primary objectives of the investment. Therefore, as a major part of their projects the funded consortia will need to jointly agree and implement the same open, non-proprietary data formats and external interfaces, including application programming interfaces (APIs), to their information hubs and services. They must co-ordinate and share data so that their interoperability can be tested and the hubs and the clusters can be accessed in the same way by data providers as well as application and services developers.

These interoperable clusters together form the heart of the demonstrator.

Each consortium should consist of a prime contractor working with partners as sub-contractors and will need to include use case/problem owners, data owners, and technology organisations.

We expect the technology organisations to play a central role, having responsibility

for all aspects of their cluster's information hub as well as being directly involved in agreeing data formats, interfaces and services with other consortia.

It is a pre-requisite of this competition that in implementing the services, the open, non-proprietary APIs and data formats the consortia draw on best practice and established standards and that they leverage proven technologies and systems and even fully fledged IoT platforms. Their role is then to adapt, extend and tune them for the aims and purposes of this demonstrator.

Each consortium must also:

- promote and demonstrate publicly, with practical applications by parties external to the consortium (eg, in a 'hackathon'), the value of the cluster and the functionalities of the information hub and the range of data available
- produce a website with a report and outcomes of the work and reference material on the data, services, data formats, interfaces and the API
- submit a proposal for scaling up the demonstrator in Phase 2; it will need to include, among other things, evidence of business support and plans for ecosystem development, partnerships, growing the data assets and demand-led technical enhancements.

Looking for partners to work on your project?

Go to **\_connect** group dedicated to this competition at <https://connect.innovateuk.org/web/internet-of-things-ecosystem-demonstrator>

There will also be consortia-building events and a webinar to help potential applicants.

A summary and the full report on the preparatory study can be found on <https://connect.innovateuk.org/web/iot-convergence-preparatory-studies-2012/>

Additional requirements can be found in the Guidance for Applicants which all prospective applicants must consult to prepare their applications.

## Funding allocation and project details

We are inviting applications from UK-based business-led consortia. We welcome the participation of universities as partners in business-led projects.

For **Phase 1** of the demonstrator we have allocated up to £2.4m and we will award contracts of up to £800k each to consortia to carry out 12-month projects funded at 100% of eligible costs. Contracts will be awarded to the lead organisation, with the consortium partners as sub-contractors. The successful consortia should plan to start their projects on **1 April 2013** and must complete the work by **31 March 2014**.

The project leads will own any intellectual property that arises from this contract but they must grant the Technology Strategy Board an exclusive royalty-free licence to the findings and dissemination of the outcomes. These will include the open, non-proprietary data formats and external interfaces to the information hubs developed as part of the projects.

Follow-on funding of up to £1.6m for Phase 2 will be subject to a successful Phase 1 and a compelling plan of work for scaling up the demonstrator, each of which will be independently evaluated. The assessment is likely to be held in May 2014 and the decision by the Technology Strategy Board on whether to continue with the funding will be final. Phase 2 work would be likely to start on **1 June 2014** and could last between 12 and 18 months.

We encourage applicants to contact their devolved administration, local government, local enterprise partnerships, funding bodies and other organisations to explore opportunities for additional funding or in-kind contributions.

## Application process

This competition opens on **15 October 2012** and involves a two-stage application process. Expressions of interest (EOIs) must be received by noon **21 November 2012** but you must register by noon **14 November 2012**. Applicants should provide a compelling but concise EOI in line with the challenge and scope of this competition and cover all of the key aspects we have outlined. Applications at this stage can be fully formed or developing consortia. EOIs will be independently assessed.

Successful consortia will be invited to the next stage to submit **full proposals**. To help develop full proposals these consortia will attend a mandatory bidders' workshop on **12 December 2012** to gain feedback on their EOI proposals, to discuss requirements and to help establish stronger consortia, ideas and collaboration.

We must receive full proposals by **noon on 30 January 2013**. Consortia will be independently assessed for the quality of their proposals. To maximise the outcomes from the investment, assessors will also be asked to consider how the final portfolio of projects complement each other.

**NB: All deadlines are at noon.**

## More information

To apply for this competition you must first register with us. You can do this by going to our web page for this competition at [www.innovateuk.org](http://www.innovateuk.org) under Competitions. When you register you will get access to all the supporting information you need to read before you apply, including the Guidance for Applicants and the application form.

Competition helpline:  
**0300 321 4357**

Email:  
[competitions@innovateuk.org](mailto:competitions@innovateuk.org)

## Publicity

As part of the application process all applicants are asked to submit a public description of the project. This should adequately describe the project but not disclose any information that may impact on intellectual property, is confidential or commercially sensitive. The titles of successful projects, names of organisations, amounts awarded and the public description will be published once the award is confirmed as final. Information about unsuccessful project applications will remain confidential and will not be made public. E-mail [pressoffice@tsb.gov.uk](mailto:pressoffice@tsb.gov.uk) with any queries.

## Key dates for Phase 1 funding

Competition opens	<b>15 October 2012</b>
Consortia-building event (London)	<b>18 October 2012</b>
Briefing webinar	<b>19 October 2012</b>
Consortia-building event (Manchester)	<b>24 October 2012</b>
Deadline for online registration	<b>14 November 2012 noon</b>
Deadline for receipt of EOI applications	<b>21 November 2012 noon</b>
Decisions to applicants	<b>7 December 2012</b>
Bidders' workshop (London)	<b>12 December 2012</b>
Deadline for full proposals	<b>30 January 2013</b>

## Key dates for Phase 2

Assessment of phase 1 outcomes and phase 2 proposals	<b>May 2014</b>
Phase 2 activity to start no later than	<b>1 June 2014</b>

*The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life.*

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