Driving Innovation

### **Results of competition:**

#### Technology-inspired innovation - August 2013 - Collaborative R&D - ICT

Total available funding for this competition was £8m from the Technology Strategy Board.

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
CambridgelP (lead) Royal Society of Chemistry University of Cambridge;	Future of search: enabling big, complex data exploration on next generation devices	£413,905	£270,676

#### Project description (provided by applicants)

CambridgeIP (CIP), the global innovation and intellectual property consultancy, with the University of Cambridge (UoC) and Royal Society of Chemistry (RSC), propose to develop novel touch interfaces to global scientific literature archives, enabling more intuitive search and analysis across multiple devices.

With over 1 billion smartphone users now performing traditionally pc-based activities on their phone, new techniques need to be used for big data analysis. This will be achieved by using the latest advances in touch-screen and mobile interfaces, alongside semantic data analysis.

Touch interfaces to the semantic elements will create an intuitive, accessible search platform enabling high level analysis and exploration of highly complex and specialist data sectors. Interactive data analytics and higher level data visualisations will be created to help view patterns within the data. The project will improve specialist and non-specialist access to valuable information from global scientific literature, enhancing R&D, education and entepreneurship.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Folding Space (lead) Aston University MISL	Big data: digitisation, semantic analysis, topic modelling, visualisation and exploration.	£498,905	£356,457

#### Project description (provided by applicants)

There is significant need across health, care and education for a new, cost effective means by which unstructured data can be presented to professional users. Specifically, to more instantly and easily derive meaning in context from within the content of paper records and digital documents.

There is also a critical need for better access to 'joined-up' relevant information across the medical and social care divide. (e.g. early warning signs for children at risk, early onset risk diagnosis of long term debilitation like dementia). The problem is that much of the information is hidden within the content of documents (unstructured data) rather than in the structured data input to and held within database driven systems.

This project will unlock the hidden meaning from within document collections and provide innovative user experiences to support evidence-based decisions.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
J&L Technology Limited (lead) University of Dundee	Argument analytics	£473,572	£336,393

#### **Project description (provided by applicants)**

Recent research in argumentation technology has matured to the point at which it has started to graduate out of the lab and become suitable for industrial prototyping. This project selects two of the most promising technologies with differing risk profiles – argument mapping and argument mining – and proposes to develop industrial proof of concept demonstrators that integrate them as Argument Analytics platform technologies in a market estimated to be worth £6bn in 2013.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Jaguar Land Rover Limited (lead) Cranfield University HoloVis International Limited	Real-time Remote Collaboration Platform Using Kinect™	£740,746	£469,794

#### Project description (provided by applicants)

This project aims to deliver a revolutionary real-time remote collaboration platform, using a combination of natural gaming interface technologies, such as Microsoft Kinect™, and standard virtual and augmented reality technologies, such as immersive environments.

The proposed platfom will enable two geographically dispersed teams to remotely collaborate in real-time and solve a shared engineering problem by exchanging not only words, videos and images but also their physical interactions with engineering workpieces that will be captured, digitised and exchanged synchronously over the web.

The remote collaboration platform will consist of knowledge capture, knowledge sharing, and knowledge recording and reuse systems. Jaguar Land Rover UK, a partner in this consortium will be the first to adopt the platform to help its product experts collaborate in real-time with their global dealership network to provide remote engineering and training support without the need for the experts to travel. This solution has the potential to impact multiple high-value manufacturing sectors within the UK and the world.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Nquiringminds Limited (lead) Copper Horse Solutions Ltd University Of Oxford	Micro Cross Device Communication Platform (MXD)	£376,005	£263,891

#### Project description (provided by applicants)

The MXD project aims to produce a secure communications platform, optimised for embedded devices that allows devices to communicate with each other over heterogeneous networks, use each others services and run interoperable service code. As such MXD is a critical enabler for Internet of Things deployments.

There exist a number of technologies and protocols in the IOT and cross device space generally (CoAP, MQTT, webinos, AllJoyn, AllShare etc.) however, none of these technologies provides a mechanism for managing security end to end. This is a major omission; many prototypical IOT application such as health or energy have extremely high security requirements, whether these are driven from privacy or anti-fraud concerns.

Building on the state of the art, the MXD project will tackle the following challenges. Define hardware tamper-proof methods to give strong device identity, user identity and application identity and integrity mechanism. Produce an interoperable device scripting technology. Define a cross device users manageable policy framework. Deliver all these technologies on an IOT optimised code footprint.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Ovation Data Services Inc. UK (lead) Imperial College Business School Smoke and Mirrors Film Productions Limited	Media Object Storage Systems (MOSS)	£497,090	£323,441

#### Project description (provided by applicants)

MOSS is a twelve-month project to research and develop object-based 'blob' storage systems that are optimised for the network-based processing, distribution and archiving of very large collections of media files. The project will create a new kind of Functional Object Storage, based on Open Source technologies and standards. It will demonstrate a protptype, working with exemplary applications, and publish a White Paper mapping Functional Object Storage to media industry workflows.

Combining object-based storage and functional programming for professional media data, across networks and in the Cloud, will improve data resilience, permanence and network delivery, and resolve problems of versioning.

The project leader is a SME solutions provider (Ovation Data Services), working with a large creative media facilities company (Smoke and Mirrors Film Productions Ltd), and a research group at Imperial College with a strong track record in distributed computing systems and functional programming. After the project, Ovation expects to bring the results to market in a new generation of storage products and services.

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