



## Innovation, Advice and Guidance

Innovation advice and guidance from experts, providing businesses with expert knowledge and highly specialised and technical skills to innovate and improve performance.

### InfoLab21 Strategic Technology Exploitation Programme (ISTEP)

ISTEP is a project designed to identify and support interactions between the North West's Digital and Creative industries and researchers from InfoLab21's School of Computing and Communications, directly helping businesses to collaborate with the 270+ strong research community at InfoLab21. ISTEP is delivered under the "Innovation, Advice and Guidance" product, part of the Government's Solutions for Business portfolio, a highly targeted, publically funded suite of products and services offering solutions to real business needs.

#### Client Needs

ISTEP is able to help businesses to innovate when they:

- Do not have the specialist expertise & resources to progress & develop a new product, process or application
- Need to raise their technical confidence in new areas of technology
- Require specialist expertise to progress a grant or bid application

By matching up businesses with the experts they need to put ideas into practice and develop new products and processes, ISTEP helps companies overcome barriers to innovation and supports business growth.

Areas of expertise include: **Communications & Networking, Computer Systems, Software Engineering (SE), Intelligent Systems, Human Computer Interaction (HCI)** (Full details and egs overleaf).

Key forms of fully funded collaboration available through ISTEP include **Expert Consultancy, Development Projects, Technical Workshops (Brunch Bytes), Spin out company support** and **Regional Events**. Places are limited to 165 SMEs over 3 years across 5 sub-regions that fit the eligibility requirements below.

#### Eligibility

**Company Size:** Micro and small to medium enterprises (SMEs) with an annual turnover of  $\leq$  €50M or an annual balance sheet total of  $\leq$  €43M and 1 to 249 full time (equivalent) employees.

**Company Location:** The project can assist SMEs based in the Northwest of England- ie anywhere within Cumbria, Lancashire, Cheshire & Warrington, Greater Manchester & Merseyside. Postcode restrictions no longer apply.

**Company Sectors:** The project focuses on companies from the Digital & Creative Sector eg Advertising, PR & marketing, design & branding, digital media, ICT and telecoms, media & creative industries, music & entertainment, science, engineering & technology. Each project must have a significant quantifiable impact on the business eg increased jobs and GVA. We are not able to provide brochure websites, physical network installation or market ready applications.

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## Brief Overview of Expertise at InfoLab21

**1. Communications & Networking:** Research covers the range from theory to implementation of on-chip, optical, wired and wireless communication networks in keeping with emerging trends and requirements.

**Examples:** Network systems, network virtualization, software networking, Relay networks, cooperative networks, error-correcting schemes, Network support for mobility, and for grid and cloud computing, Wireless mesh networking, wireless comms, wireless video distribution, aviation security, Wireless sensor networks, networked embedded systems, Channel protection, Future Internet, network resilience, autonomic networks, QoS, e-Energy, Active content and service-centric networking, autonomic networks and Architectures for quantum computing.

**2. Computer Systems:** A distributed system consists of multiple autonomous computers that communicate through a computer network. The computers interact with each other in order to achieve a common goal and it is now feasible to design and implement computing systems with large numbers of networked computers. **Examples:** Distributed systems, middleware, digital economy, virtual observatories, System software & programming technology for Internet of Things (IoT), Emergent computer systems, Mobile platforms, public display infrastructure, energy-awareness, Ubiquitous information systems, QoE in content networks, Content distribution, IPTV, Dependable computing, large-scale systems.

**3. Software Engineering (SE):** Involves the application of engineering principals to software development. As a profession it is dedicated to utilising the application of a systematic, disciplined, quantifiable approach in designing, implementing, and modifying software so that it is of higher quality, more affordable, maintainable, and faster to build. **Examples:** Service orientation, software reuse, Software product line engineering, Software modularity & composition, digital forensics and internet safety, Systems engineering and requirements, Model-driven SE, self-adaptive systems, social computing.

**4. Intelligent Systems:** this group was established to research and develop applications for intelligent and adaptive systems, which include fuzzy logic, neural networks, genetic algorithms and AI techniques. **Examples:** Computational intelligence, evolving intelligent systems, Context sensing and activity recognition, Location sensing and algorithms, domestic energy flows, Cognitive decision support, networks of participation, Statistical signal processing, image/video proc., localization, Natural language processing, semantic corpus analysis, Digital signal processing.

**5. Human Computer Interaction (HCI):** HCI is the study of interaction between people and computers and can span a variety of disciplines including thinking about the machine through computer science and the human through disciplines such as the social sciences. The basic aim of HCI is to improve the interactions between computers and users through by making them more usable and appropriate to the user's needs and software engineering is a key part of this. **Examples:** Mobile HCI, CSCW, Locative media, Mobile experience, games and social networks, Intelligent internet interfaces, creativity, physicality, visualisation mobile applications, assistive technologies, User interface technology, Visualisation, database technology, database interfaces, Social/Ethnomethodological studies of technology, Mobile user interfaces, User experience, emotions, reflection, assessing/training cognitive skills.

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