

Research and development work relating to assistive technology 2009-10

Presented to Parliament pursuant to section 22 of
the Chronically Sick and Disabled Persons Act 1970



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Introduction

About this report

Section 22 of the Chronically Sick and Disabled Persons Act 1970 requires a report to be laid before Parliament each year describing the research activity the government has funded to improve equipment for disabled people. In 2000 the term 'assistive technology' replaced 'disability equipment' in the title of the report, reflecting the terminology used in the field.

The definition for assistive technology is as follows: "Assistive Technology is any product or service designed to enable independence for disabled and older people." This UK definition was drafted in 2001 at a King's Fund meeting by a broad group of voluntary sector organisations representing disabled and older people in order to prioritise personal outcomes set by the user of technology within a framework of 'independence'. This broad definition means that a wide range of products and services are eligible for inclusion in the report, both high and low tech. Technological advances mean that the breadth of work covered is constantly expanding. The research covers not only specific products, but also systems, combinations of technologies, and interfaces to new mainstream technology, for example the internet.

The report aims to reflect research and development activity in relation to a wide range of impairments and health conditions and also to reflect the range of government funding programmes across health, social care, education, housing and employment. The report covers any aspect of research and development work in assistive technology, including service provision, research on motivation, cost or patterns of use, as well as technological development.

Who is the report for?

This report is of interest to a broad audience including:

- members of Parliament, government decision makers and research funding organisations who can assess the impact of the investment made in research and development in this area and identify areas that may require future funding;
- the research community and industry who can identify useful activity in their area of interest and who may wish to use the links to the Foundation for Assistive Technology (FAST) website to make contact with partner organisations and avoid duplication of effort;
- service providers and people who use assistive technology or support others to use assistive technology and who wish to understand how advances in technology can directly benefit disabled and older people living actively in the community.

Report format

All the research featured in the report has been started, finished or is being carried out in the UK during the period April 2009-March 2010 and is being funded by the UK government or the European Union (EU). The report features projects that indicate the effectiveness of assistive technology in meeting the needs of a wide range of disabled and older people. These projects

have been selected by the authors as illustrative of the potential benefits of investment in research and development into assistive technology.

The report includes, in Annex A, a listing of government and EU funded research into assistive technology in the UK started, finished or carried out during the year. The listing enables readers to find further information on the FAST website, www.fastuk.org, including participant contact details and project progress. This information is freely available to the public, is regularly updated and provides the online format for this report. Further information on research and development in assistive technology funded by non-government organisations, on events, and service improvement activity can also be found on the FAST website.

Methods used for gathering information

The information provided in this report is gathered by desk research, including regular review of online information provided by research organisations, user representative and funding organisations, as well as information from sector journals, and information solicited directly from the research teams. The criteria for inclusion of projects in this report are that published project aims or progress includes a focus on assistive technology and that funding is through a government source.

FAST is grateful for the support of the research and development community in providing the information included in this report. While all attempts are made to ensure that the information provided is comprehensive, there may be projects which have not been identified and we would be grateful for notification of any such projects.

Numbers of projects featured

In the year from April 2009-March 2010 FAST recorded 174 projects carrying out research and development activity in assistive technology over the year, of which 62 concluded during the year, almost exactly the same levels as last year.

The policy context

As a country we need to use our resources fairly to support the increasing numbers of us who are living into older age, particularly those of us living with ill health. How we do so has become a topic of extensive national debate. In the context of a slowly recovering economy and a requirement to reduce public sector debt, there is growing awareness of the need to decide on priorities for funding and to achieve value for money. The potential to use technology-enabled services to address the budgetary challenge of providing more care with less funding is the focus of much of the research featured in this year's report.

There is also a readiness to accept that services will have to change to meet the needs of a new generation of older people and to make best use of innovative technologies. One way in which services are changing is that many are moving towards internet access only, with Britain's public sector leading the world in e-government and its use of technology. Though there are many experiences that require unmediated, direct contact, the internet provides a convenient way to make the transactions that take up much of our daily lives, with shops, banks and local services available online. New generations of silver surfers are confident to use the internet for social transactions with friends and family but there are still significant numbers of disabled and older people who are digitally excluded. The drive to become an inclusive Digital Britain is reflected in the substantial number of projects reporting this year looking at access for disabled and older people to computers and the internet.

As a result of the 2008 review of services for children and young people with speech, language and communication needs (SLCN) led by John Bercow¹, a number of the projects underway this year focus on the needs of children and young people with spoken communication impairments. In a separate cluster of work, several projects are looking at the use of cutting edge technologies such as robotics to support play and rehabilitation. However the urgency of the need to find ways to support older people with long term health conditions and to provide disabled adults and children with access to the internet has perhaps inevitably meant a reduced focus on other research areas. As a consequence there are a relatively low number of research programmes reporting this year focused on the needs of disabled children and younger adults for non-computer based and 'low-tech' assistive technologies.

There is growing recognition of the right of disabled people to control the services they receive. There is an increasing requirement for services, particularly public services, to ensure they are accessible to disabled people. The White Paper 'Equity and Excellence: Liberating the NHS' published in July 2010 gives a commitment to putting patients at the heart of the NHS, through an information revolution and greater choice and control². This is not just a policy direction in the UK. Several pieces of European legislation will make web accessibility for some services

¹ <http://www.dcsf.gov.uk/bercowreview/docs/7771-DCSF-BERCOW.PDF>

² http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_117794.pdf

increasingly mandatory and, as a result of ratification of the UN Convention on the Rights of Disabled People³, the UK has obligations that include undertaking or promoting the research and development of assistive technology and universally designed products and services, the provision of accessible information about assistive technologies and the promotion of appropriate training of practitioners who are working with disabled people. This policy drive to put the individual at the centre of service planning is reflected in an increased participation by users in setting research strategy and shaping project outcomes.

Personalisation of health and social care services

The initiative to give adults a 'Right to Control' over the social care services they receive is shifting the balance of power from the state to the individual, and assisting disabled people to achieve better outcomes from the personalised services they currently receive. The Office for Disability Issues has published a guide which brings together existing good practice in personalisation and service delivery for disabled people, from across the public and voluntary sector⁴. In June 2010 the Association of Adult Social Services (ADASS) published the results of a survey exploring councils' progress on meeting targets for personalising services⁵. There are now around 170,000 personal budget holders, an increase of 77,000 (83%) on a year ago, and half of these are older people. Around 950,000 people each week receive ongoing council-funded care and support and one in seven of them are now receiving personal budgets. The policy emphasis on supporting people to choose and control their social care services is being extended to support people with long term health conditions to have increased responsibility over their health services.

The Department of Health estimates that the care of people with long term health conditions accounts for 69% of the total health and social care spend in England and this will increase with the ageing population⁶. Fundamental change is needed in order to deliver potential savings and quality improvements. To achieve this, the government has launched the first direct payment scheme, which is designed to offer patients more choice and control over the care they receive. The scheme is designed to help individuals with a range of health conditions including people with diabetes, stroke, heart disease, end of life care and mental health conditions. The aim is to encourage individuals to exercise a more preventative approach to managing their health. In order to meet people's needs, services should be integrated and delivered in the community or at home as far as possible and options should include the provision of equipment and assistive technologies. The Department of Health will run a pilot programme to road test direct payments for personal health budgets, with eight Primary Care Trusts (PCTs) initiating the programme in July 2010, and further PCTs authorised to offer direct payments over the coming year⁷. The pilots are due to end in 2012. The full programme involves around seventy PCTs across England.

³ <http://www.un.org/disabilities/convention/conventionfull.shtml>

⁴ <http://www.odi.gov.uk/working/right-to-control.php>

⁵ <http://www.adass.org.uk/images/stories/PPF%20Progress%202010%20-%20DASS%20May10.pdf>

⁶ http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_082067.pdf

⁷ http://www.dh.gov.uk/en/MediaCentre/Pressreleases/DH_117040

Britain's ageing population

According to official statistics published in February 2010, next year there will be 12,000 people aged 100 or over in the UK⁸. In 10 years time this will have nearly doubled to 22,000 and the number is projected to rise to 280,000 by 2050. In 2010 there will be around 12 million pensioners in the UK, rising to 16 million by 2050. A substantial programme to develop innovative, cost-effective services for older people has been underway over the past three years under the Partnerships for Older People Projects (POPP). The final evaluation programme published in February 2010 found that the 29 local authority-led pilot projects resulted in improved quality of life for participants, savings through reductions in hospital emergency bed days, and better local working relationships⁹. For every extra £1 spent on the POPP services, there was a £1.20 additional benefit in savings on emergency bed days. The projects, which aimed for a shift from institutional and hospital-based crisis care for older people towards prevention and intervention within their own homes and communities, included rapid response teams, falls prevention services, telephone advice services and befriending schemes. Projects involving the provision of "practical help, small housing repairs, gardening, limited assistive technology or shopping" had a particularly high probability (98%) of being cost effective compared with 'usual care'.

The Lifelong Health and Wellbeing (LLHW) initiative is a large collaborative funding programme aiming to address the challenge of an ageing population¹⁰. The LLHW initiative brings together the Arts and Humanities Research Council (AHRC); Biotechnology and Biological Sciences Research Council (BBSRC); Engineering and Physical Sciences Research Council (EPSRC); Economic and Social Research Council (ESRC); Medical Research Council (MRC) in partnership with UK Health Department partners. LLHW is supporting three new 'lifelong health and wellbeing' research centres that will carry out multidisciplinary research on healthy ageing. Each has specific research themes and two of the centres include a focus on assistive technology. The Crucible Centre at University College London (UCL) has been given £3 million to inspire researchers across UCL to work with end users 'to engage in research leading to a comprehensive understanding of all aspects of the ageing process'. Cogworks, based at Queen's University Belfast, has been given £50,000 to fund a new 'cognitive health and wellbeing hub' bringing together 11 investigators from across Queens in education, law, medicine and sociology, along with researchers from the Universities of Ulster, Brunel, Stirling and Oxford Brookes. The idea is to bring about a 'new era' of health for people over 50 years of age.

Designing housing that is fit for older age

Providing housing-related support is proving to be an effective way to enable people to manage their health and remain independent for as long as possible. Research undertaken for the government published in July 2009 estimated that the £1.6 billion invested through the

⁸ <http://www.dwp.gov.uk/previous-administration-news/press-releases/2009/december-2009/dwp080-09-311209.shtml>

⁹ http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_111240

¹⁰ <http://www.mrc.ac.uk/Fundingopportunities/Calls/LLHWPhase3/index.htm>

Supporting People programme saved other services £3.41 billion. For “older people receiving floating support and other older people”, a category which includes home improvement agency services and community alarms, the research estimates that for every £1 spent, savings of £6.45 are achieved across other budgets. This is the highest saving level achieved across all client groups and service categories¹¹. Pointing out that “spending as little as £2,000 on adaptations to help an elderly person stay in their own home can save £6,000 a year on care”, the Audit Commission in October 2009 urged local councils to focus more on upgrading existing homes and less on building new ones¹².

There will be a continuing building programme for publicly funded homes however, and it makes sense to ensure these are fit for an aging population. CAGE (the Commission for Architecture and the Built Environment) and the Department of Health’s Housing Learning and Information Network published a report in October 2009, “Homes for our old age: independent living by design”¹³. This features ten housing schemes for older people, each of which offers “inventive design and management solutions linking home and social care”. Some schemes included telecare and assistive technology.

Managing the impact of dementia

Linked to a concern about the potential costs incurred in caring for an increasingly older population, is awareness of the burden on the individual, on carers and on public sector resources resulting from dementia. According to a report from The Alzheimer’s Research Trust published in March 2010 on the prevalence, economic costs and research funding of dementia, it affects 820,000 people (1.3% of the UK population) and costs the economy £23 billion per year¹⁴. This study estimates that each dementia patient costs five times more than the average cancer patient and most of this cost is met by unpaid carers. Social care costs (mainly long-term institutional care) are £9 billion, health care £1.2 billion and productivity losses £29 million. The report was released a year after the publication of the National Dementia Strategy (NDS) for England. Research on the impact of NDS pilots on peer networks and dementia advisers is currently being funded by the Department of Health Policy Research Programme.

The Ministerial Advisory Group on Dementia Research (MAGDR) was established following the 2009 Summit on Dementia Research with the aim of maintaining the momentum gathered at the Summit towards improvement of the volume, quality and impact of dementia research¹⁵. The Group will help scientists access research funding, and will develop a strategy to increase public support for dementia research. It will also provide advice on government dementia policy, and on wider national and international initiatives. MAGDR comprises the main organisations with a stake in dementia research, including the government, research councils,

¹¹ <http://www.communities.gov.uk/publications/housing/financialbenefitsresearch>

¹² <http://www.audit-commission.gov.uk/SiteCollectionDocuments/AuditCommissionReports/NationalStudies/betterliveshousingassociations.pdf>

¹³ <http://www.cabe.org.uk/files/homes-for-our-old-age.pdf>

¹⁴ <http://www.dementia2010.org/reports/Dementia2010ExecSummary.pdf>

¹⁵ <http://www.dementia.dh.gov.uk/objectivesAndResources/Research/MAGDR/>

charities and the pharmaceutical sector, as well as a former carer of someone living with dementia, and is chaired by the Minister of State for Care Services, Paul Burstow. The Coalition Programme signalled the government's intention to prioritise funding for dementia research¹⁶. The October 2010 spending review confirmed that and committed to real-terms increases in spending on health research¹⁷.

The Scottish government launched in June 2010 its first national dementia strategy, including plans to develop national standards of dementia care and a skills framework for staff¹⁸. Together with the forthcoming Scottish carers' strategy and a strategy on self-directed support, it is intended to help health and social care reshape services for an ageing population in a context of spending cuts. A key aim is to 'ensure that when people with dementia leave hospital they are given every opportunity to return to their own home rather than move to a care home', including support from telecare services.

The use of telecare for people with dementia is a subject of research and of wider debate in terms of the ethics of using new services that are enabled by technology. In January 2010 the Nuffield Council on Bioethics published a report "Dementia: ethical issues" which sets out a six point framework for service providers, people with dementia and carers¹⁹. The report acknowledges the role of assistive technologies such as 'smart' home adaptations, telecare, memory aids and monitoring or tracking devices in enhancing the lives of people with dementia and their close family and friends, by promoting a person's autonomy and well-being and enabling them to live more freely and more independently for longer. However, it also highlights concerns about issues such as intrusion on privacy, stigma (particularly with reference to tracking devices) and the risk of reduced human contact. The report notes 'that it is not so much the technologies themselves that have the potential either to promote or to harm people's interests, as the manner in which they are used' and emphasises the need to involve the person with dementia in choosing or rejecting particular forms of technology.

Exploiting new telecare and telehealth technologies

A key development in assessing the impact of telecare and telehealth in supporting people with long-term conditions is the significant investment by the Department of Health in the Whole System Demonstrator trial based in three large-scale sites (Cornwall, Kent and Newham) and supported by work in the related Action Network²⁰.

The aim of this trial, which began in May 2008 and is scheduled to finish in March 2011, is to provide a rigorous and statistically significant evaluation of the benefits (if any) of telehealth and telecare when used to support integrated care delivery. This is a high profile national project that will inform future health policy. By early 2010, 239 GP practices were actively participating and researchers had sent out 27,000 letters and made 9,000 home visits to recruit

¹⁶ <http://www.conservatives.com/~media/Files/Downloadable%20Files/coalition-programme.ashx?dl=true>

¹⁷ <http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm101102/debtext/101102-0001.htm>

¹⁸ <http://www.scotland.gov.uk/News/Releases/2010/06/01111639>

¹⁹ <http://www.nuffieldbioethics.org/sites/default/files/Nuffield%20Dementia%20report%20Oct%2009.pdf>

²⁰ <http://www.wsdactionnetwork.org.uk/>

6,191 participants to the trial, including 470 carers. Each participant is being followed up at a three month and twelve month interval. Early results suggest improvements in quality of life and in control of long term conditions, coupled with a reduction in emergency hospital admissions. A full evaluation is in progress and will report at the end of the trial.

Vital to the delivery of robust, multi-media telecare and telehealth services is the availability of high-speed broadband. The government has developed plans to increase access to high speed connectivity services (such as 'superfast broadband') for households, business and communities in poorly served areas across the UK. The Universal Service Commitment is designed to bring connectivity to those areas still without a basic level of broadband access, and so provide inclusive services²¹. Broadband Delivery UK (BDUK) has been created within the Department for Business Innovation and Skills as a delivery vehicle for these policies. The first step towards increasing the penetration of high speed connectivity will be the running of three market testing projects in rural areas. The Secretary of State for Culture, Media and Sport, said in July 2010 '...Our goal is simple: within this parliament we want Britain to have the best superfast broadband network in Europe'. An aim of this programme is that next generation broadband will create 'a platform on which a whole generation of new businesses can thrive' and 'open up new opportunities to improve public services such as education and healthcare', including telemedicine.²²

Becoming an inclusive Digital Britain

The UK Digital Champion Martha Lane-Fox has published in July 2010 the Networked Nation Manifesto highlighting the lack of internet access 'among the disadvantaged, unemployed and retired'²³. Of people aged 65 and over, half have no internet access while more than three quarters of those aged 75 or over are not online. The report highlights the benefits of online access as a ways of reducing social isolation for older people. More than 3m over-65s go more than a week without seeing a friend, family or neighbour, while half of all internet users say the web increases contact with friends who live further away. Yet 6.4m over-65s have never used the internet, with 63% of them saying they 'see no reason' to get online. In spite of the benefits in getting online, 59% of non-internet users attribute their failure to go online to a lack of motivation, rising to 63% of those 65-74 and over. Lane-Fox is spearheading a campaign to get the UK's 10m non-internet users online by 2012,

In April 2009 the Engineering and Physical Sciences Research Council (EPSRC) announced a £36 million investment in three Digital Britain 'hubs' based in the Universities of Aberdeen, Nottingham and Newcastle. The Newcastle hub has a specific remit to work to create an inclusive digital economy and researchers' commitment to work with older people to design simple, intuitive interfaces tailored to their needs is already bearing fruit. Further details on the project are included in this year's report.

²¹ <http://interactive.bis.gov.uk/digitalbritain/report/executive-summary/universal-service-commitment/>

²² <http://www.bis.gov.uk/BDUK>

²³ <http://raceonline2012.org/manifesto>

While the government are investing in widening access to digital services, there are moves at a European level to make easy access to web services mandatory. In November 2009 the European Commission proposed legislating to ensure that all European Union (EU) nations adopt rules to ease disabled people's access to the web. Enabling digital inclusion by disabled people is vital not just because of the number of public services moving to internet only access but also due to the current lack of awareness and provision for access by disabled people on the part of web commissioners and designers. In November 2009 the Consumer Expert Group published a "Report into the use of the internet by disabled people: barriers and solutions"²⁴. Issues raised include the availability and affordability of access technology, accessibility in web design, and support for disabled people using the internet. Recommendations include: "Government must ensure a mechanism is put in place through which disabled people can access training, equipment and services, including access technology, and funding to cover the additional costs they face because of their disability".

The government's Home Access scheme is providing funding to give low income families a free computer and free broadband access²⁵. An innovative model for universal provision has been designed which accommodates the needs of disabled students without developing cumbersome assessment and support programmes. The whole range of computer and laptop options available to eligible students include a standard set of assistive technology software. Students and their families can complete a self-assessment form that directs them towards additional options that provides commonly required hardware to access a computer and, for a small number of students, whose needs have not been met through these options, towards personal assessment.

Changes to community equipment and wheelchair services

The government has confirmed that it will be pursuing the pilot programme on the commissioning of wheelchair and seating services, which was proposed by the previous administration. The Care Services Minister has said that: 'wheelchair services is an area that really does require improvement: real improvement in how wheelchair services are commissioned and delivered, and real improvement in extending personalisation to wheelchair services, where there is still far too much off-the-shelf or "like it or lump it" provision'.²⁶

While he agreed that problems with regional variations and waiting times should be subject to 'consistent, national standards, applied by local commissioners to the needs of individual populations', proposals for ring-fenced budgets and centralised targets would 'swim against the tide'. According to the Minister, primary care trusts, councils, NHS trusts and clinicians will examine new ways of commissioning wheelchair services in the two regional pilot sites that have been selected: the east of England and the south-west. They will then make recommendations for new service models underpinned by consistent approaches to eligibility and access, which could be established across the country.

²⁴ http://www.dundee.gov.uk/dundee/uploaded_publications/publication_1679.pdf

²⁵ <http://www.homeaccess.org.uk/>

²⁶ <http://www.publications.parliament.uk/pa/cm201011/cmhansrd/cm100628/debtext/100628-0023.htm>

The Welsh Health Minister made an announcement in April 2010 detailing new measures to speed up delivery of wheelchairs, communication aids, artificial limbs and other equipment²⁷. These include establishing a single organisation with responsibility for managing and delivering equipment to create a specialist, dedicated service; developing new all-Wales indicators to show performance across the country in ensuring fast access to equipment; a review of current waiting list; and a review of the commissioning and provision of wheelchairs for short-term loan purposes. A project board will be established to take forward the measures and will report by June 2010.

The Transforming Community Equipment Services (TCES) project has piloted new ways to supply community equipment, including simple aids to daily living such as eating and drinking utensils, grab rails and raised toilet seats as well as more complex equipment such as beds, hoists and lifts²⁸. The aim has been to create a new service delivery model which is more affordable, flexible and efficient than existing provision. The goal is to move the simple aids to daily living, which account for 90% of current activity, into the retail marketplace. By stimulating the retail marketplace and drawing on the expertise of third party and private sector organisations, it is hoped to create a more responsive approach to providing equipment. Individuals will be prescribed a voucher to exchange for equipment, which they can choose to top up if they wish to select a product more suited to their lifestyle. The project is also working to create a more efficient supply chain for complex aids to daily living. TCES pilot teams are providing briefings during 2010 for local authorities and health partners to ensure they have access to the tools and methodologies to lead their own implementation plans

Investment in innovation

While much policy and related research is focused on shifting services to encourage them to respond to the needs of individuals and local communities, there is also a continuing drive to transform services through bringing innovative products and services to market. Among a range of initiatives to support innovation, Health Innovation and Education Clusters (HIECs) are intended to build partnerships between NHS, higher education, industry and other public and private sector organisations to support the spread of innovation locally²⁹. Investment of £11m in 17 HEICs is resulting in several initiatives that are detailed in the appendix to this report. The emphasis by research funding organisations on the need for researchers to focus on commercialisation of products and services, which was reported on in detail in last year's report, continues in this report with an article on three commercialisation support initiatives that have been active over the past year.

²⁷ <http://wales.gov.uk/newsroom/healthandsocialcare/2010/100304wheelchairs/?lang=en>

²⁸ <http://www.dhcarenetworks.org.uk/csed/TransformingCommunityEquipmentService/>

²⁹ http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Dearcolleagueletters/DH_096927

From the lab to the living room

The market for assistive technology (AT) is growing, as the proportion of older people increases, along with the number of people living with long term conditions or disabilities and the need to make efficient use of healthcare resources. Yet few commercial companies have grasped the opportunity to provide well designed, innovative AT products which meet consumers' needs and are appealing to look at and use.

Three different initiatives are now working to change that situation, Devices for Dignity (D4D) based in Sheffield, the Health Design and Technology Institute (HDTI) at Coventry University, and London-based social enterprise ATcare.

Devices for Dignity (D4D) is one of two national pilot healthcare technology co-operatives created in 2008 at the instigation of the Healthcare Industries Task Force. It has three themes, urinary incontinence, renal dialysis and AT. These



are linked by the focus on improving 'dignity' in care and making a significant impact on people's quality of life.

The AT strand draws on substantial expertise at Sheffield Teaching Hospitals, the Barnsley Hospital

specialist AT team and university research groups, along with a range of other NHS, academic and third sector partners. The aim is for collaboration between clinicians, users or patients, academics and industry.

'Identifying what it is that people need and then finding out how to serve that need is key



to our philosophy. We bring all the stakeholders together to focus on technology pull, rather than simply looking at great examples of technology and wondering what to do with them,' explains

Mark Hawley who leads the AT theme and is Professor of Health Services Research at the University of Sheffield.

D4D's work covers a spectrum of activities from identifying user need to launching a finished device on the market, and can include developing patient priorities, evaluating products, commercialising prototypes and post-market surveillance. It is a national resource, and commercial partners can be any size from a very large company to a new start-up. The AT strand has around 21 research projects at varying stages of completion. One early success is a new design of commode with a wash and dry facility, originally thought up by someone in response to a friend's needs. With D4D support, the concept and prototypes have been trialled in a hospital setting and the commode has now been licensed to a manufacturer and is due on the market in 2011.

Other work includes a study to find out what users think of communication aids and which features they value or would really like to see in a product. 'This illustrates our commitment to discussing with users what their priorities are and how to meet them. We embrace user-centred design methodologies, where we actively involve people in the design process

as we go through iterations to make products better,' Hawley explained.

The team is also working on a web-based tool called the 'Innovation Broker' which will be used to help identify unmet needs and to marry those up with companies that are producing new inventions. This is a complex process, not least because of the intellectual property issues involved, but the aim is to produce a step by step guide that helps make the innovation process work more smoothly.

The Health Design and Technology (HDTI) at Coventry University is similarly interested in the cross fertilisation of ideas. Launched in 2007 with a focus on community-based healthcare and well being, the institute moved into a purpose-built facility in mid 2009 which offers a mock-up area where independent testing of prototypes can take place on behalf of companies, a usability suite where new products can be independently evaluated by users at all stages of the design process, seminar rooms, a design studio, workshops



with equipment for rapid prototyping, and office space for healthcare businesses

with a particular focus on new start-up businesses.

Its remit covers four areas, design and usability support for businesses in the AT market; the development and delivery of undergraduate and postgraduate courses in the field; the provision of short course and CPD events for both healthcare professionals and businesses; and applied research working with Coventry University academics as well as a range of external partners across

the UK and Europe. 'All these areas should, and do, inter-relate with each other. We want to create effective partnerships to build real strengths in AT. So, for example, we have academics and students working alongside businesses that have come to us and want to design products to meet particular needs,' explains HDTI's director Simon Fielden.



With funding from the West Midlands Development Agency, HDTI's services are designed to support businesses across the region who may already be active in the AT market but are seeking help to develop their

innovations, or who may be looking to diversify into the AT sector. That support could include checking that proposals meet a genuine need and are not covered by other products on the market, testing out prototypes with users, and brokering the best way for a company to market their innovation through licensing, selling the idea or manufacturing.

HDTI has worked with around 80 companies so far. A bath manufacturer has tested out new concepts in the mock-up space where designs could be evaluated by users and designers have developed an exercise device for people with multiple sclerosis in conjunction with a user group. 'One company was planning the tooling to manufacture a new product, but our feedback from users collected through an independent usability study showed fundamental flaws in the design. Thus the company was able to stop a potentially disastrous investment of £25,000 in tooling equipment, and rethink their design, so even negative user responses can be very valuable,' Fielden pointed out.

London-based social enterprise ATcare is equally dedicated to making sure products respond to genuine user needs, rather than focusing purely on new technological capability. Established in 2008 with funding from the London Development Agency, the organisation is dedicated to growing the AT market by finding ways to exploit innovative ideas. 'We put the user at the heart of the design process. We engage with users from the start of the project, in prioritising what



products they need and what features are important and we provide their feedback every step of the process, rather than just giving them a new product to test once the design is

finished,' explains ATcare's chief executive Christine Asbury.

In its first year ATcare has assessed more than 50 products. Team members have run workshops with user groups, and are developing new products focusing on cognitive impairment/ dementia care and independence. ATcare is also working with London Region Social Care and Partnerships on a pilot project to develop a diagnostic tool which local authorities can use to track how AT interventions contribute to their ability to meet agreed outcomes and national indicators. The tool will enable local authorities to plan changes in resources and to build the business case for the use of AT, and will allow for sharing of best practice across authorities.

This work is part of ATcare's push to mainstream AT products, a process which

Asbury believes will accelerate as the 'baby boom' generation enter older age. 'There will



be a significant shift in the next five years towards more self-funders of

AT, who will be voting with their wallets and looking to buy well-designed products,' Asbury predicted. The advent of more sophisticated consumers should put pressure on suppliers to look more closely at how they meet demands. The problem is that many of the most innovative ideas come from small companies. Asbury says that almost all the companies who come to ATcare identify financing as the biggest hurdle to be overcome during the long process of creating a new product, and suggests a venture capital fund targeted at AT would be one solution.

Hawley argues that developing robust measures to demonstrate the value of AT products in economic terms is also critical. 'One of the biggest challenges long term is being able to identify not only how AT improves people's quality of life, but also the savings the NHS makes as a result,' he pointed out.

Against this background, ensuring AT products are well-designed and meet real needs is important not only for the individuals who will be using them but also to build up the market as a whole. 'Hopefully we can all influence the market by leading by example and showing that it is possible to produce attractive products that fulfil people's requirements. Our role is to demonstrate that it can be done,' Asbury said.

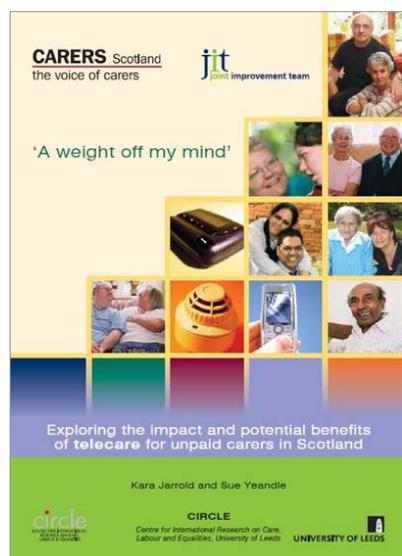
Next generation telecare and telehealth

Many current telecare systems are designed to support us to live at home as independently as possible by providing a response to problems such as a fall or a flood in the bathroom. Increasingly this technology is understood and implemented by health and social care teams across the country, but research is required to document fully the evidence of impact. The Whole System Demonstrator programmes will make a significant contribution to the body of evidence when they report in 2011. One evaluation programme reporting this year looks at the potential benefits for carers and identifies ways to share good practice.

The majority of existing telecare services are reactive; they alert carers of the need for assistance once an event has happened, rather than proactively indicating where difficulties may arise. Research is now focusing on the use of the next generation technology which is able to predict when assistance is required and so prevent problems escalating. Telehealth systems that have the potential to support us to manage our own health by providing information on vital signs such as pulse rate or blood pressure are not commonly used yet. Several of the projects featured in this year's report look at how next generation telecare services and rapidly developing telehealth service can be integrated.

Exploring the impact and potential benefits of telecare for carers in Scotland

The Scottish government has invested £8 million (in 2008-10) to enable local partnerships in Scotland to extend existing telecare services, increase telecare awareness and training, and enhance innovation in telecare. While research has examined the costs and benefits of telecare for the health and social care system, there has been less investigation of the benefits for informal carers and the impact on their caring situation.



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The Centre for International Research on Care, Labour and Equalities at the University of Leeds conducted a study focused specifically on how telecare affects carers living in diverse circumstances. The project took place between January 2009 and December 2009, funded by the Joint Improvement Team (JIT) of the Scottish Government Health Directorate.

All the carers in the study reported positive experiences of using telecare and identified a wide range of positive effects of telecare on their caring role and circumstances. Findings indicated the need to raise awareness amongst carers and professionals about the full range of telecare options, along with the requirement to make charges for telecare more equitable and consistent throughout Scotland. The study concluded that more investment

is still needed to establish telecare as a mainstream component of the health and social care system in Scotland. In addition to exploring the impact of telecare on carers; the project developed a template for use by local partnerships to assist them to implement telecare services.

An evaluation of the potential benefits of proactive preventative telecare and telehealth systems

The Technology Strategy Board (TSB) through its Assisted Living Innovation Platform (ALIP) funded a project between October 2008 and March 2010 to install equipment in people's home to collect data which, combined with the use of intelligent system calculations, could be used to provide 'early warning' of changes in health and wellbeing by detecting variations in the normal pattern of daily living.



Tynetec lead a partnership which included Aidcall, the telecare service provider arm of Age UK, Darlington Borough Council, Your Homes Newcastle and Intrahealth Ltd, a provider of telehealth services to the NHS and Primary Care Trusts.

The project installed selected telecare and telehealth systems in participants' homes for a period of 12 to 18 months. Taking part were 200 people receiving social services, 100 people receiving private care, and 50 people with chronic long term conditions receiving support from their primary care team. To start with, the device simply collected data to build up a picture of the individual's 'normal' activities of daily living, such as how many times certain rooms were used, how often an individual left the house and for how long, the temperature in the main living area, and a person's vital signs (blood pressure, pulse, weight and blood oxygen levels).

As the system developed over the first twelve months, it was used to monitor and highlight changes in the average daily activity pattern. For example, fewer visits to the kitchen might indicate someone is not eating well, while increased use of the bathroom could suggest new health problems. The system could also alert the project team to other conditions such as low temperature in the main living area (hypothermia warning) and increases or decreases in someone's vital signs. As a result of the first stages of the project, the team made improvements to the system. The technology was enhanced so that the home unit software sent data directly to a virtual server that stored all the information securely. For participants taking their vital sign readings, the software was adapted so that the readings would be sent to clinicians within ten minutes of the last reading being taken.

The project is now moving into the enhanced trials stage. Brunel University is undertaking data analysis with the aim of creating intelligent algorithms that can provide early indications and alerts to a carer or healthcare professional of a change in someone's activities. As part of this the 'visualisation', or way the data is displayed, is being designed so that information can be more easily and quickly interpreted by a carer, healthcare professional or family member.

ALMS - Advanced Lifestyle Monitoring Systems

The Assistive Technology Team at the Barnsley Hospital NHS Foundation Trust has been looking at how to build a lifestyle monitoring system that can provide early detection of factors likely to lead to a future requirement for institutional care and to facilitate early intervention to prevent loss of independence.

In a project funded by the National Institute of Health Research (NIHR) Health Technology Devices (HTD) programme, researchers installed personal telecare and telehealth systems based on existing equipment (such as movement sensors and blood pressure monitors) to collect, analyse and evaluate activity and vitality data. The data was transmitted to an expert system which used special algorithms to identify potential wellbeing issues. The objective was to increase and extend current equipment capability in terms of its function, form and price to make this option attractive to both NHS Trusts and to private consumers and so increase market demand. Researchers also undertook user-centred design workshops where older people were encouraged to give their views on this technology.

The research took place between April 2006 and March 2010 and findings indicated that it was possible to analyse complex behaviours in the home using simple technology and for the system to provide alerts that could indicate a decline in someone's health and well-being. In order to see if these results can be replicated at a larger scale, the work is now being carried on in a follow-on project with a larger number of participants.

Telemonitoring and self management in hypertension (TASMINH 2): A randomised controlled trial and qualitative evaluation of the efficacy and acceptability of telemonitoring and self management in the control of hypertension

Over a third of the adult population in the UK have high blood pressure (hypertension), making hypertension the second most common reason for an adult to make an appointment with their GP. Almost half of these patients are on anti-hypertensive medication, yet many remain 'uncontrolled' according to current treatment guidelines. Controlling blood pressure is a key aspect of the prevention of heart disease and strokes, but until recently little responsibility has been given to individuals to manage their own blood pressure monitoring and medication.

The introduction of accurate and easy to use automated measurement instruments (sphygmomanometers) means it is now possible for someone to take their own blood pressure readings at home. Self monitoring of blood pressure in this way has been shown to have small but significant effects on blood pressure control and to be cost effective and well liked by patients. Self management of hypertension, where people adjust their own medication in response to blood pressure readings, takes this concept a step further but has not previously been thoroughly researched.

The University of Birmingham ran a randomised controlled trial based in primary care organisations that was designed to evaluate the costs and effects of increasing patient involvement in blood pressure management. The project was funded by the Department of Health's Information and Communication Technology Research Initiative and ran between February 2007 and November 2009. The trial compared the results for a group of patients undertaking home monitoring and self management of anti-hypertensive medication with results for a group following 'standard' care across a sample of 527 patients. Details of blood pressure readings from the home monitoring participants were transmitted to the research team via a telemonitoring system. A simple colour coded system indicated when results were very low or very high and needed to be checked by the person's GP.

Each participant was given individually tailored two step self-management guidance which covered any changes to be made to their medication in response to their blood pressure measurements. Each step represented a single medication change (either an increased dose or an additional medication) to be made following raised readings in two consecutive months. The results of the trial are currently being analysed and will be presented at the European Society of Hypertension annual scientific meeting in Oslo in June 2010.

Mainstreaming through design

While telecare systems can help support people to live independently for longer there are some disadvantages to the current designs that restrict take up. Many users of pendant alarms find it difficult to remember to wear them at all times and some people feel they are stigmatising, alerting others to their need for care services. Most of telecare and telehealth units are supplied as separate devices which require relatively expensive installation and then sit alongside the mainstream devices, such as telephones, TVs, set top boxes, intercom systems and other electrical products, already in our homes.

Some research projects are articulating a vision for telehealth and telecare systems as seamlessly available within the fabric of our homes and as features in our mainstream devices, ready to plug and play whenever needed. It is envisaged that the ways that we will communicate with these systems will include speech, touch and movement around the home, depending on what is required or desired.

Researchers are now looking at ways to make this vision a reality, including embedding the technology into mainstream equipment and developing body-worn devices which are not stigmatising and may be a pleasure to wear. This is an important issue, because such advances are seen as necessary for community wide take-up of these systems, critical if there is to be a significant change in the way health and social care is delivered.

Health hub: user-centred design, development and integration with the built environment

ALIP is funding a project that runs between September 2008 and July 2011 to resolve how a range of telecare and telehealth systems can work seamlessly together and to provide guidance on the built environment to ensure such systems can work easily anywhere in the home. The project is being led by the Digital Access Provision Forum which includes major ICT providers such as Microsoft and Cisco, working with construction companies and technology suppliers and is co-ordinated by the Building Research Establishment. Other members of the consortium include user representative organisations such as the Foundation for Assistive Technology and Hereward College.



An early output from the project is a demonstrator toolkit which sets a vision for how technology could make a real difference to people's quality of life if widely adopted, and shows manufacturers and suppliers that a new market exists in this area. The vision was the result of widespread consultation with experts across the sector. The toolkit was developed by Microsoft and other project partner

organisations and takes the form of six 'smart home' scenarios showing integrated and interoperable technology being used to help people with long term chronic conditions to live as independently as possible. These include two videos, one describing support for 'Brian', a person with early stage dementia, and the other looking at the use of remote health monitoring for 'Deirdre' who has a number of long term chronic health conditions.

Some 2,500 DVDs have been circulated since June 2009, including a substantial number overseas. The project group held a meeting in March 2010 for the pharmaceutical and medical devices industry which was attended by 16 market leading organisations, including many from Europe. The result of this meeting is that many of these organisations will use the vision for telecare and telehealth services to develop new business models for their companies.

The development of Microsoft's Health Vault solution, which is due to be launched in the UK later this year, has been shaped by the user requirements and technology solutions developed for the demonstrator scenarios. Microsoft will be using 'cloud' computing technology to provide an anywhere, anytime web platform that will allow a wide range of companies to develop integrated telecare and telehealth products and services that can be delivered at mass market scale.

This summer the project will be demonstrating how the sensors used to capture information on chronic conditions can be linked to health databases to allow for monitoring via a range of media, including domestic TVs. Work currently underway within the project aims to develop guidelines for built environment commissioners and designers that will expand existing Lifetime Homes Guidance to encompass integrated digital connectivity as an additional utility.

Easy Line+: Low cost advanced white goods for a longer independent life of elderly people

The European Union (EU) Framework Programme 6 (FP6) programme funded a project which ran between January 2007 and June 2009 to develop prototypes of white goods such as fridges and ovens which can support older people to live independently for longer by compensating for any loss of physical or cognitive abilities. The project consortium included partners in Germany and Spain, and the Centre for Applied Internet Research at Glyndŵr University was responsible for developing the device interfaces, including remote control and internet access.

Researchers marked standard kitchen appliances with Radio Frequency Identification (RFID) tags that could be read by sensors. This enabled the system to recognise individual items of food, clothing and utensils, and additional sensors were used to detect open or closed doors, flood, steam, excessive heat and other environmental factors.



In addition to the intelligence embedded in individual appliances, the project also made use of digital photo frames and mobile phones as a way of communicating information to users. For example, the user could see the contents of the fridge or set the cooker via the TV in their living room, or be informed that the washing cycle or cooking programme has finished either via a message on a photo frame if they were indoors, or by mobile phone text if they were outside in the garden. The devices work in conjunction with an

intelligent 'e-servant' system which recognises and adapts to the users changing needs. Glyndŵr University's work focused on developing interfaces which allowed for users' range of abilities and which conformed to the principles of 'simplicity, consistency, universality and familiarity'. Researchers created standardised buttons on the typical TV remote control and developed novel software which allowed for multi-lingual voice output and for voice recognition systems for people with visual impairment. Extensive testing of the general principles and a range of devices and interface designs has taken place in a purpose-built usability laboratory.

COGKNOW: Helping People with Mild Dementia Navigate Their Day

There have been few studies where people with dementia themselves describe their needs, but those that have been carried out indicate that the most frequently identified unmet needs are in the areas of helping people to remember, helping to maintain social contact, helping with performing daily life and recreational activities, and providing enhanced feelings of safety. Researchers in the EU FP6 project COGKNOW, which took place between September 2006 and August 2009, looked at how technology could help people navigate through their day. The work involved teams from Spain, the Netherlands, Sweden, France, Malta and Estonia. The UK partners included the University of Ulster and Belfast City Hospital/ Queen's University of Belfast.



The project has used commercially available touch screen devices (a large screen for home use and a smaller portable device for use outside the home) which are connected to a remote server which is programmed with the profile and calendar of the people with dementia and carers who use it. The COGKNOW Day Navigator has been trialled at test sites in Belfast, Luleå in Sweden and Amsterdam in the Netherlands. Researchers are evaluating the

usability of the solution and the impact of its use on the perception of autonomy and the quality of life of people with dementia. Discussions focused on exploring commercialisation are underway.

ENABLE - A wearable system supporting services to *enable* elderly people to live well, independently and at ease

This EU project was funded under the framework programme FP6 and it involved ten organisations from seven member states including Austria, Estonia, Czech Republic, Spain, Belgium and Greece, with UK partners at the University of Reading, Docobo Ltd and Cardionetics Ltd. The aim of the project, which took place between January 2007 and June 2010, was to develop a wearable device that could monitor the health status of older people, detect potential problems, provide activity reminders and offer communication and alarm services. Researchers conducted user surveys, carried out use case analysis and developed scenario modelling to determine the specifications and functionality required for development.



One early result is the development of a wrist unit for older people to use inside and outside the home which is able to support and assist with a whole range of activities, rather than simply providing an alarm. The device has a colour user interface, language independent voice commands and a simple five button operation. It currently accepts instructions in English, German, Czech, Greek and Dutch. The design has been registered with the European Product Design centre. Prototype units offer a range of services

including falls prevention and detection, long term condition monitoring, environmental control, emergency call, medication prompting, life style and quality of life assessment. The falls detection software has been specifically designed to detect both hard and soft falls using multiple sensors.

The ENABLE system represents the first device that offers integrated health and social care and is designed to be worn by users in the form of a watch. Units are about to enter the field trial stage in five European member states.

Inclusion through the Digital Economy

The Engineering and Physical Sciences Research Council (EPSRC) is funding three 'digital hubs' for five years beginning October 2009 which will examine how new technologies can be used to enhance quality of life for everyone. The emphasis is on developing innovative, inclusive products and services.

Work by the hub at the University of Newcastle and the University of Dundee will focus on developing a panel of 3,000 people who represent technology end-users. The panel will contribute to research strategy and evaluate research outputs, as well as being engaged in design and evaluation activities to ensure outputs of the research programme are meaningful and usable. Some panel members will represent disabled users, having vision, hearing, mobility, cognitive processing, or literacy impairments that limit their access to much of today's digital economy. In addition, the panel will have a large number of older people who have needs as technology novices as well as impairments associated with ageing.



© D Green, Dr J Wallace, Personhood project,
Newcastle University Digital Hub

Preliminary work in the hub includes a project looking at how digital jewellery can help people with dementia maintain 'personhood', that is a sense of identify for themselves and for the people who care for them. The aim is to provide a way by which someone with cognitive decline can continue to express their personality, retain memories and maintain connections with others. The researcher has developed specific pieces in response to individual users, including a neckpiece, a brooch, jewellery box and a locket holding digital images, and is now working to develop methods whereby generic aspects of the project can be extended to be applicable to greater numbers of people living with dementia.

Enabling confident travel

As well as looking at ways to use technology to help people to live independently in their own homes, researchers are also exploring how technology can support people to keep active outside the home. Being confident and able to get out and about is an important element of health and well-being and can have a significant impact on people's physical and mental health. Research projects reporting this year examined the factors that affect confidence to travel in older people and at the elements in the built environment and transport infrastructure that can create barriers or support confidence in travelling.

New metrics for exploring the relationship between mobility and successful ageing

A study funded by the New Dynamics of Ageing (NDA) research programme between January 2008 and December 2009 examined mobility patterns in successfully ageing adults and assessed the relationship between mobility, health and lifestyle. Researchers at Northumbria University and the University of Newcastle wanted to examine the factors which might predict whether or not someone retained their mobility, as well as looking at the consequences of reduced mobility. Their goal was to identify interventions that could have an impact on the maintenance of mobility with the idea of providing guidance for future generations about these interventions and encouraging them to implement them. The study also aimed to examine the utility and acceptability of mobility tracking technologies as healthcare interventions.



The project used movement and location-aware systems to track older people's activities both indoors and outdoors using services via wearable 'locate' devices. This data was combined with a device that logs activity associated with bodily movements in order to gain a fuller understanding of mobility. A moderately active group of 86 older people completed the study. Analysis of the location monitoring

data on a sample of 27 participants revealed that they did not travel far from their home, covering approximately 23 miles over six journeys in a week.

Patterns of activity suggested that changes do occur as adults age and initiation of activity may be more challenging for older adults, especially later in the day. Younger age and a lower body mass index (BMI) were significant indicators that predicted physical activity. Current health, as measured by the number of medications taken, ease and speed of walking were related to

furthest distance travelled. From previous measures of cognition and well-being it emerged that previous levels of anxiety, social network size and health were important indicators of levels of mobility.

In terms of mapping the usefulness and acceptability of mobility tracking technologies as healthcare interventions, the study did not identify immediate benefits from location monitoring. Participants expressed concern that such devices would limit their control over their own lives, portray them as 'unhealthy' and felt they would be stigmatised by the use of such systems.

Older People's Use of Unfamiliar Space (OPUS)

Most research looking at the impact of their environment on people as they age has concentrated on familiar spaces, mainly around the home. A team lead by Swansea University and funded by the NDA programme has been researching older people's responses to public places and areas which are not familiar to them.

Kingston University, Anglia Ruskin University and Middlesex University were partners on the project, and these research teams explored older people's use and navigation of unfamiliar spaces as pedestrians. This issue is important because landscapes are often changing, turning familiar places into unfamiliar spaces. Unfamiliarity can lead individuals to worry about safety and to feel insecure, which can lead in turn to social exclusion as people choose to avoid locations with these associations.



© OPUS Study, Swansea University

The project recruited older people who were shown films of unfamiliar and familiar places and routes in city centres (Swansea and Colchester) shot from the perspective of a pedestrian and played in a virtual reality 'cave' facility. They were asked to comment on specific items during the journey, for example the use of signage, confusing and helpful cues and the general impression of the route. Participants' heart rates were monitored while in the virtual reality cave along with

their stress levels and other psychological measures. Researchers compared people's physical and perceptual responses when viewing films of familiar places to their response when viewing films of unfamiliar spaces.

A group of ten participants were taken to the unfamiliar area (Colchester) to undertake a replay of the 'walk around town', to compare their responses in the virtual reality setting and in real-life. The findings show that landmarks and distinctive buildings were more important than signage in helping people to navigate around unfamiliar areas; however the meaning of space and memories attached to places was significant, particularly in familiar spaces. Participants had interviews with spatial planners to pass on their perceptions of their requirements in terms of different types of public spaces, signage and environmental 'furniture.'

As a result of this work, which took place between February 2008 and August 2009, researchers are developing a device for GIS/ GPS (Geographical Information System/Global Positioning System) navigation. The prototype was used by older people on actual routes to assess whether it assisted their navigation. This was followed by focus group interviews with the older people involved that showed that using a landscape orientation was valuable, accompanied by a minimum number of menus on the prototype device, to provide specific information.

AUNT-SUE (Accessibility and User Needs in Transport for Sustainable Urban Environments)

Recent research has highlighted the ways in which poor transport and urban design may reinforce the isolation of people who are already disadvantaged, and who may be cut off from the social mainstream. To counter this, there needs to be sustainable and inclusive development of transport and street environments. At the moment, however, there are few resources to support those designers who are working to put such principles into practice.

The purpose of the AUNT-SUE project, which was funded by EPSRC between August 2004 and March 2010, was to develop a comprehensive 'tool kit' that can be used for strategic transport planning and for street-level design of facilities such as vehicles, bus stops, signage and ticket machines.

London Metropolitan University led a consortium of research teams from Loughborough University, University College London, the London Borough of Camden and Hertfordshire County Council. These organisations worked with local and passenger transport authorities from across the UK. Participating in the project were people who experience various degrees of difficulty in negotiating the 'journey chain', as well as practitioners responsible for implementing transport policy and provision.

AUNT-SUE Inclusive Journey Planner

1. **Set my preferences** [Change]

2. **Enter locations** [Change]

3. **Select time and date** [Change]

4. **Choose best journey**

Search by: Changes Cost Time Walking

Option	Score	Depart	Arrive	Duration	Walking	View
A	47.78	13:19	14:41	1:22	22 min	View
B	45.68	13:16	15:56	2:40	36 min	View

Search should include: Trains Tube Tram Light Rail Buses Coach Ferry Wheelchair Access

AUNT-SUE Journey Design Guide - Rules for more inclusive internet journey planners

1. Optimised Personalisation	2. Genuine Journey Choice	3. Rich Journey Plans
Content	Content	Presentation
Your best 3 journey options:		
	1 hr 6 min 43.60' 28 min of walking	
	2 hr 14 min 42.40' 8 min of walking	
	1 hr 20 min 44.80' 15 min of walking	

2.2 Genuine Journey Choice Presentation

2.2.1 Each journey option should be represented by the vehicles in that journey. This will define the journey for the user and they will understand how many changes are involved. Stating the number of changes numerically is always open to misrepresentation.

2.2.2 The graphical representation of the journey should not include walking, except where the whole journey is a walk. This is consistent with how people think of journeys (i.e. walking is assumed). Walks will be fully represented in the actual journey plan.

2.2.3 There should be strong visual distinction between each option. It is important that the user can view each option as a discrete package of information, but also make quick comparisons between options.

2.2.4 Each journey option should have its own "View" button. This should directly follow the option information and only one full journey plan should be shown at a time.

2.2.5 Additional functions for filtering or sorting journey options should visually separate from the options. Such additional functions are non-essential, but may have the added benefit of providing a key for scores in the options.

© Design Ergonomics Group, Loughborough University

Based on interviews and trials with disabled users, researchers have developed an inclusive journey planner, the i-Journey. Journey planners can play an important role in making public transport more accessible for disabled people who want to check their route options in

advance of travelling. The prototype i-Journey is a web interface that offers options that a user would wish to use and which incorporates detailed journey plans with real time updates on factors such as service availability, cost, and anticipated levels of crowding. The project has also produced a number of 'tool kit' deliverables including a Journey Wizard, which is a framework that links seemingly isolated areas of activity in order to focus on someone's journey as a whole. The wizard covers different scenarios and offers ways to measure or model accessibility in the pedestrian environment, on specific journeys from the point of origin to destination, on a particular stretch of street, and on public transport.

Another recent outcome is the Stresstimator tool, which is an add-on to a standard Excel spreadsheet and can be used to simulate the experiences of people over a whole journey and identify areas that are potential 'stressors', that is, elements that could lead to exclusion. This tool uses the HADRIAN software database created by the project team which holds details of 102 real people, including 59 disabled people. The Stresstimator works by comparing stressors that feature in a particular journey with the known capabilities and behaviours of the individuals on the database. This simulates the stress levels that these people would experience throughout the journey.

The team further developed and tested GIS-based techniques that draw on existing design standards and user feedback to identify physical and psychological barriers, which may exclude people from critical journeys e.g. walking from home to the GP surgery. AUNT-SUE insights have also informed the development of the new Transport for London Journey Planner, as well as recent work undertaken in London and New York to analyse environments which discourage exercise and barriers to pedestrian activity. The project has reached its final stage and in March 2010 AUNT-SUE team shared insights on age-supportive built environments in a three-day workshop with an interdisciplinary delegation of Canadian researchers and practitioners.

Looking again at mobility technology

We all need to keep fit and active, and there are a wide range of benefits associated with keeping mobile. Technology to support mobility, in the form of wheelchairs, crutches, prosthetics and orthotics, has been available for many years and these products are, in some respects, well understood. Current research is concentrated on producing easy-to-use, more appealing designs, and on reviewing the benefits and disadvantages of using these technologies, not just for the individual but also for their carer.

Attendant Wheelchair Propulsion

Of the estimated 1.2 million wheelchair users in England, a third rely on someone else pushing them in a manual wheelchair as their primary means of getting around. Yet very little research has been carried out to investigate how much effort and strength is required for someone to push a wheelchair. Such information could be extremely valuable to wheelchair services when deciding whether to prescribe a manual or an electric wheelchair, particularly given that many of the people doing the pushing will be older people who may be risking injury.

The ASPIRE Centre for Disability Science is working with the Pedestrian Accessibility and Movement Environment Laboratory (PAMELA) at University College London to map the forces required to push manual wheelchairs and to develop a Performance:Capacity Ratio for attendant propelled wheelchair use. The work is funded by EPSRC and took place between September 2006 and September 2009.

The first work stream in the project looked at the forces involved in three simple wheelchair tasks (straight line pushing, going up and down a step, and a manoeuvring task). This study, undertaken in collaboration with Croydon PCT wheelchair service, looked at the differences between 8L and 9L manual wheelchairs, and the results will be made available later this year.



The second work stream focused on wheelchair navigation over a crossfall, or gradient across a footpath. Researchers took a detailed look at how the degree of gradient of the crossfall affects attendant pushing patterns, as well as self-propulsion patterns. Using the PAMELA

facility, three lanes were constructed each at a different crossfall ranging from 0% (flat), to 2.5% (current UK guideline for maximum crossfall) and 4%.

Attendants were asked to push a wheelchair occupied by a 75Kg dummy, both in a straight line and on a course which required avoiding an obstacle. Wheelchair users were also asked to self-propel along the same course. Preliminary findings showed that the attendants pushing wheelchairs were very capable on flat footways but had significant problems with crossfalls, where they had to apply large braking movements to the upslope handrim in order to prevent the wheelchair from rolling down the slope. In comparison, the two wheelchair users were able to apply positive force to both handrims, reducing the amount on the upslope side relative to the downslope side, and so negotiate crossfalls successfully. These findings suggest that including crossfalls in the rehabilitation programme for new wheelchair users, and providing guidance on managing crossfalls for people pushing wheelchairs, would be useful. The research has developed into collaboration between UCL and Kansai University in Japan and is being continued with a short-term award from the Japan Society for the Promotion of Science.

Wearable computing for real time monitoring of 3D foot orientation

Wearable sensor technology has potential applications in a number of areas of rehabilitation, for example, by using sensors to gather information about someone's movement patterns. For comfort and in order to ensure accurate readings, sensors need to be designed so that they are easy to use and to put on and off.

In a project funded by the NIHR's New and Emerging Applications of Technology (NEAT) programme, researchers aimed to establish the proof of concept for incorporating knitted energy sensors into a sock in order to measure foot and ankle movement. Researchers used socks which had four sensors in different locations around the ankle and which transmitted data to a gait analysis system. Twenty people were asked to repeatedly perform walks in the gait lab, both when wearing shoes and when just in the sensor socks. At the end of the laboratory session users were asked to comment on the sensor sock using a purpose-designed questionnaire.



Initial tests showed that the relationship between signals from the sensors and the 3D orientation of the foot was much less predictable than had been expected. However, it proved possible to use the signals to detect significant changes in gait to an average accuracy of between 1% and 3.3% of the gait cycle, which is comparable with other currently used measurement approaches. The questionnaire results showed that people found the sock comfortable and easy to get on and off.

The work was based on technology originally developed at the William Lee Innovations Centre at the University of Manchester (now closed), and took place between September 2008 and

January 2010. Researchers are now looking at ways in which the sock could be combined with functional electrical stimulation (FES) technology to offer therapy for foot drop in additional work which is being carried out by Nottingham Trent University.

LIFE (Long-term involvement in fitness enablement) study

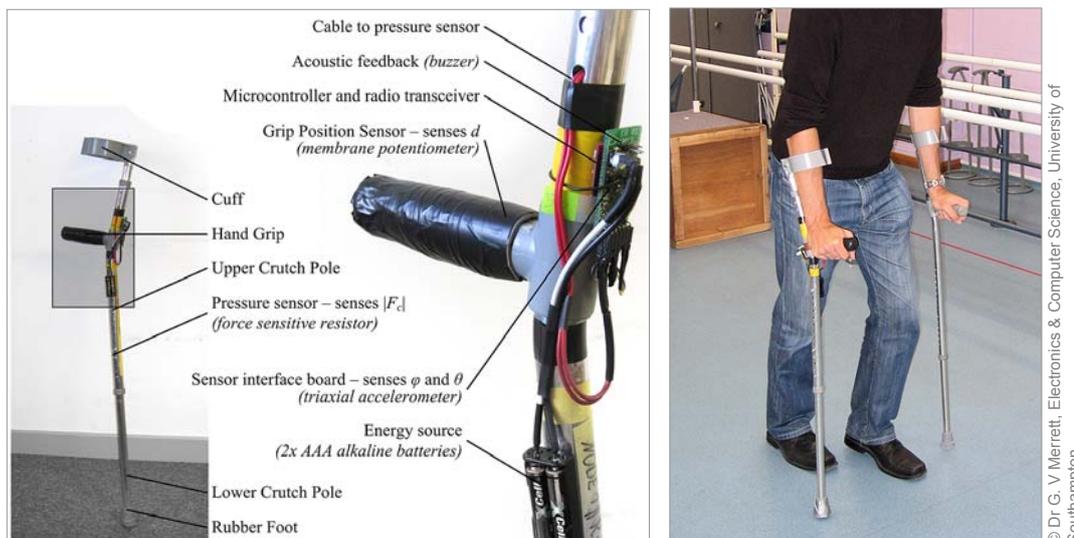
People with neurological disorders such as muscular dystrophy, multiple sclerosis and cerebral palsy, have low levels of participation in physical activities. This means they are at risk of developing secondary diseases caused by inactivity. However they may be reluctant to join local exercise groups that are not specifically designed for disabled people. Current rehabilitation programmes for people with neurological conditions are mainly delivered in hospital by physiotherapists, so do not increase their inclusion in community-based activities.

In a project funded by the Department of Health's Policy Research Programme between January 2007 and June 2009, researchers worked with service users to develop a Physical Activity Support System (PASS) to encourage people with neurological disorders living in Oxfordshire to take part in physical activities at community fitness centres. A randomised controlled trial with 99 participants found that supported community exercise was well tolerated and suggested the need for more work to explore the ability of such a scheme to support activity in the longer term and to identify the health and wellbeing benefits and costs. As part of the work, researchers developed a lightweight, wireless system which provided a quick, easy, valid and reliable method to monitor neurological conditions by analysing people's gait, the pattern of their walking. The system is now subject to a patent application.

Instrumented Forearm Crutches for Patient Rehabilitation

Forearm crutches are frequently used when someone is recovering from an injury to their leg, as they allow the person to reduce or remove the weight borne on the affected leg. Putting too much weight on the limb too quickly can slow healing or cause further damage. The advice given by physiotherapists is to apply a gradually reducing percentage of body weight through the crutch as the individual increases the level of activity undertaken over the period of recovery. This is challenging as there are few objective means of measuring how much weight is being put through a crutch or onto the affected leg. The person's own perception of the loading on their leg is often prone to considerable error, and clinicians can only give subjective feedback as a result of visual inspection.

The EPSRC funded research, carried out by the University of Southampton and Southampton General Hospital between June 2006 and November 2009, to look at how technology could help solve this problem. The project developed a crutch fitted with three accelerometers that detect movement as well as sensors that monitor the force being applied through the crutch in order to obtain an objective estimate of the relative proportion of body weight being put on the leg. To help people learn how to use forearm crutches correctly, the position of the hands on the grip are also measured by sensors. Data is then transmitted wirelessly to a remote computer. If the person is using the crutch incorrectly, they are provided with feedback through the sound of a buzzer.



A small pilot study involving healthy volunteers using one crutch showed that it was possible to estimate weight bearing using the instrumented crutch. The study was also able to document the high levels of error when users were asked to apply 0%, 50% or 75% of their weight through the affected leg. This confirmed the need to provide clear information on the level of weight being put on the leg. This information is needed in order to support people to manage their own rehabilitation and the findings indicate that the device would provide this information. Further studies will investigate the use of two instrumented crutches for better estimation of weight-bearing, along with improvements to the way data is recorded and fed back to users.

Development of a prosthetic foot with adaptable heel heights - Shape&Roll Talon

Developments in the design and manufacture of prosthetic limbs seek to balance two key requirements: the desire to provide improvements in functionality for users and the need to keep costs under control as many healthcare providers have limited funds. The goal is to create a prosthetic foot with excellent performance in walking that is extremely durable, cosmetically pleasing and inexpensive.

Researchers at the National Centre for Prosthetics and Orthotics at Strathclyde University having been developing a prosthetic foot, called the Shape&Roll Talon, which allows for individually tailored heel heights so that the prosthesis can be easily adapted to any individual's personal choice of shoe.

The project took place between April 2007 and April 2010 and was funded under the EU's Marie Curie programme. The research team includes a commercial supplier as well as a researcher at Northwestern University in the United States. The aim of the project was to develop a prosthetic foot that could be made easily without the need for sophisticated machinery. The project also developed a click-release connecting mechanism that allows for an easy interchange between Shape&Roll Talon feet of different heel heights.



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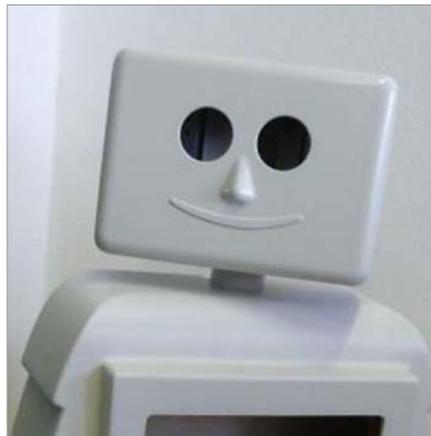
Researchers have produced a first prototype, including the early release mechanism which has passed mechanical tests in accordance with new International Standards Organisation (ISO) standards successfully. A pilot trial with participants testing the prototype in the field is currently underway.

Technology for play and rehabilitation

Researchers are investigating several ways in which technology could be used to support disabled children and adults, and older people, to undertake play and exercise. One option is the use of robot 'companions' and related software applications as a way of encouraging mediated play and therapy programmes. Other work is assessing the benefit of using robotic units in therapeutic settings to support rehabilitation programmes and to explore the use of information provided through ICT to support exercise and rehabilitation.

IROME: Interactive RObotic social MEdiators as Companions

Current thinking emphasises the importance of play in children's development, as a way of learning about themselves, their environment, and to develop social relationships. But some children with cognitive or other impairments are prevented from playing, which can lead to social isolation.



© Adaptive Systems Research Group, University of Hertfordshire

A team from the University of Hertfordshire took part in project funded under the EU FP6 programme in a consortium with partners in Austria, France, the Netherlands, Spain and Italy between November 2006 and October 2009. The project explored how robotic toys can be tailored to become social mediators, empowering disabled children to play and discover the range of play styles from solitary to social and cooperative play. The University of Hertfordshire researchers built a child-sized humanoid robot called Kaspar and developed a number of play scenarios which were tested out with groups of disabled children. The children took part in games with the robot, such as building a tower, fetching a ball and turn taking games.

The main outcome of the project is a framework for a social mediator for children with special needs. This includes a robotic system, a set of play scenarios developed specifically to meet educational and therapeutic objectives, and evaluation tools to help evaluate the child's progress. It is accompanied by a set of guidelines for using robots in educational and therapy sessions for disabled children. In order to make Kaspar feel more appealing to children with autism who are frequently sensitive to textures, the University of Hertfordshire team is now working on a project called RoboSkin, to develop a more natural covering for Kaspar.

iStretch: Intelligent STroke Rehabilitation Exercise TeCHnology

People who have had a hemiparetic (one-sided) stroke which affects an arm usually have great difficulties performing many activities of daily living due to a lack of coordination and weakness in muscle control. These activities may include pushing on a chair to stand up or getting into bed. In order to rehabilitate arm control and increase stability therapists prescribe a 'reaching task' exercise. In the early stages of therapy extensive practice and assistance is required for an individual to regain motor skills. Discussions with experienced therapists have identified a need for efficient supplementary tools to help with these early stage rehabilitation exercises.



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Researchers at the University of Dundee, working with researchers in Canada and Mexico, have received funding from the European Union-Mexico Science and Technology Science International Cooperation Fund, to develop the iStretch Stroke Rehabilitation prototype. This is an intelligent robotic system which uses haptic, or tactile, feedback technology and is designed to conduct the early stages of physiotherapy for

people who have had a stroke that has affected an arm. Work began in January 2009 and will end in December 2012. The device simulates the traditional 'reaching task' therapy, and is able to autonomously adjust to meet the individual's abilities, as well as increasing the difficulty of the exercise as people's performance improves. Feedback is provided to the individual (in the form of graphic motivation and games) and to the therapist (in the form of the user's performance statistics).

The aim of the project is to develop this technology further by making it fully interactive between the individual and their therapist and making it more lightweight for use in the home. The first robotic prototype has been completed and tested. The haptic platform provides resistance and directional guidance for the user during the exercise. Unobtrusive sensors provide data to indicate hand position and abnormal arm posture during the rehabilitation exercise. The system also uses cameras and computer vision to track a person's arm movements in the later stages of rehabilitation. Other data, such as velocity and force, can be calculated by the system to monitor the individual's technique and posture.

SMART 2: Self Management supported by Assistive, Rehabilitation and Telecare Technologies

This EPSRC-funded project is investigating how technologies can be used to help individuals and their families manage the consequences of long-term health conditions and maintain quality of life. The work, which is being carried out by Sheffield Hallam University, the

University of Sheffield, the University of Ulster and the University of Bath, is focused on three common health conditions: chronic pain, stroke and congestive heart failure.

Self-management is central to the government's long term conditions agenda, and researchers are looking at ways in which information on changes in their health can be collated and fed back to users in a meaningful way to help them understand their health conditions. They are also exploring how information can be presented in a way which promotes changes in behaviour, and how a personalised self management system (PSMS) can help people adjust their life goals to accommodate their health needs. The aim is to produce a 'toolkit' of software and sensors to help people assess how best to manage their condition in discussion with their therapists. The project began in January 2008 and is due to end in December 2011. Members of the project team have had consultations with people with stroke, chronic pain and congestive heart failure, from which they have develop scenarios of how a PSMS might be used in the home.



Project meetings were held to further develop the content of the scenarios, which were then used to develop very early 'paper' prototypes of the feedback that a user might receive on a screen in their home and on a mobile device in response to different inputs or commands. The paper screen prototypes were then discussed in detail, incorporating insights from different members of the multidisciplinary team, leading to further modifications. This design work is currently in progress.

Data analysis has revealed some common themes, and a report relating to all three health conditions has been produced. The scenario documents provide some preliminary proposals for the user interaction and feedback. Through the interface in their home, the person will be able to choose the goals that they wish to work on in partnership with their therapist, receive instructions on prescribed exercises and receive feedback on physical activities.

Extending the impact of therapy

There is a growing appreciation of the use of technology to support people with mental health conditions by delivering effective therapy in the individual's home, at the time it is needed. While there are likely to be limitations on what can be achieved using mediated therapy, delivered on a computer screen, several research programmes aim to explore how this format for delivering therapy can complement face-to-face services.

A pilot study to explore the feasibility of computerised cognitive behaviour therapy (Think, Feel, Do) for children with emotional disorders

Emotional problems such as anxiety and depression in children and young people are relatively common and can interfere with everyday functioning, impair educational performance and affect family relationships and friendships. If appropriate treatment is not provided then these problems can persist and increase the risk of future mental health problems in adulthood.

Cognitive Behaviour Therapy (CBT) has been shown to be an effective treatment for the emotional disorders of anxiety and depression, but is not widely practiced within specialist child mental health services. Long waiting lists result in many young people being denied timely and effective interventions. Researchers at the University of Bath collaborated with young people to design and develop an interactive CBT computerised programme. The NIHR Research for Patient Benefit Programme (RfPB) funded a pilot project between September 2008 and February 2010 to assess its feasibility and acceptability.

The research highlighted that, although young people and parents have some reservations about computerised mental health interventions, a number are positive and see advantages in this method of delivery. Clinicians were more cautious but generally felt that computerised interventions could be useful as interventions for children with mild and moderate, rather than severe, mental health disorders. Overall about a dozen children have completed the CBT programme and findings show they like the programme and they highlight many more positives than negatives. Researchers plan to continue recruiting participants and aim to test the programme with about 16 young people.

REEACT - the Randomised Evaluation of the Effectiveness and Acceptability of Computerised Therapy trial

Researchers at the University of York began a study in May 2009 which is scheduled to end in January 2015 to look at the delivery of computerised CBT. The work is funded by the NIHR Health Technology Assessment (HTA) programme.

The study will compare two computerised CBT packages (one free-to-use and one commercial) to see if there are any benefits of offering this treatment compared to the care that people already receive from their GP. Researchers will also examine whether the commercial

package is better than the free-to-use package and whether the extra cost is justified. The project will randomly allocate 600 participants to receive either usual GP care alone, usual GP care plus a commercial CBT package, or usual GP care plus a free-to-use package. Participants will be recruited via their GP Practice in four centres (York, Sheffield, Bristol and Manchester) and followed up for two years.

Designing digital inclusion

Online access is now essential in many areas of life. Online shopping and travel bookings have become the norm, while the government is promoting the online delivery of central and local government services. Although there is an increasingly mandatory requirement for public services to ensure their web services are accessible online, in practice there are multiple barriers to digital inclusion. Disabled people may find it physically challenging to access a computer or to navigate the software application successfully, while older people may lack the necessary skills or confidence. Improving and extending the ways in which people interact with computers and web-based services is a key requirement for ending digital exclusion.

Intelligent Support with Internet Browsing for Older People

The main obstacle for older people in using new technology is the ageing process itself, and the consequent decline in cognitive ability, perception, memory and eyesight. However, the rate of decline varies across the population and older people's abilities are diverse, so personalised help is needed when an individual wishes to learn a new application. Providing this support on a face-to-face basis would be prohibitively expensive and to do so in a timely way would be a logistical challenge.

The aim of the project was to develop an intelligent help facility that automatically assists older users with browsing the internet and which is capable of responding to each person's specific needs and actions. The work was funded by the Department for Employment and Learning in Northern Ireland (DELNI) and took place between October 2006 and September 2009. The aim was to develop a system to recognise individual user interaction patterns and identify when a user needs help. The system would then offer the appropriate level of help and retain details of successful interventions for future use.

The first prototype of the system has been completed and has been tested and evaluated by older people over a period of six months. Preliminary analysis shows that older people benefit from having individual assistance while they are browsing the internet, and the findings will be fed into guidance on providing online support for older people.

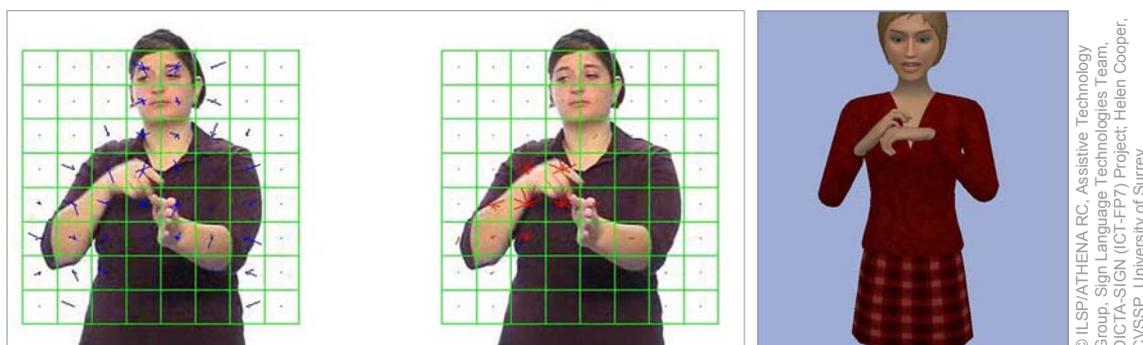
DIADEM - Delivering Inclusive Access for Disabled and Elderly Members of the community

This EU FP6 project brought together a consortium from Norway, Italy and the UK to investigate the issues older people with cognitive impairments have in completing online forms. Older people with cognitive impairment can have poor concentration and loss of short-term memory, which means they are more likely to lose track of where they are in a particular process or get lost in an online transaction. In addition, reduced problem solving skills and loss of mental flexibility means that users are more likely to become frustrated by requests for input that they perceive to be unexpected, irrelevant or apparently out of sequence

The work took place between September 2006 and August 2009, and the UK partner was Brunel University. The consortium developed an adaptable web browser interface that monitors the ability of the user to interact with the system and responds by changing the way the interface looks in order to provide the best fit for that particular user. An experimental version of the software is available which has been through user trials in the UK, Italy and Norway.

Dicta-Sign: Sign language recognition, generation and modelling with application in deaf communication

The internet has become the place where people can constantly interact with others, by posting information (e.g. blogs, discussion forums), modifying and enhancing other people's contributions (e.g. Wikipedia), and sharing information (e.g., Facebook, social news sites). Unfortunately, due to their reliance on the use of written language, all these applications are inaccessible to sign language users. An obvious solution, which is to post sign language videos, has two problems. Firstly, any video is not anonymous, since anyone can recognise from the video the individual who has made a particular contribution, which holds many people back who otherwise would be eager to contribute. Secondly, people cannot easily edit and add to a video that someone else has produced, so a Wikipedia-like web site in sign language is not possible using video.



The goal of this EU Framework Programme 7 (FP7)-funded project, which began in February 2009 and is due to end in January 2012, is to develop the necessary technologies to make web-based interactions in sign language possible. Users sign to a webcam using a dictation style. The computer recognises the signed phrases, converts them into an internal representation of sign language, and then has an animated avatar sign them back to the users. Content on the web is then contributed and disseminated via the signing avatars.

In addition, this form of avatar representation also allows researchers to develop sign language-to-sign language translation services, analogous to the Google translator. This way, the Dicta-Sign project aims to solve both problems that sign language videos have. The avatar is anonymous, and its uniform signing style guarantees that contributions can be easily altered and expanded upon by any sign language user. Researchers at the University of East Anglia and the University of Surrey are collaborating with researchers in Germany, France and Greece on work to locate, track and determine the pose of a signer, and to enhance the timing

and synchronisation features in the avatar to make sure any content is comprehensible. A survey of the current state of the art in synthetic, sign-language animation systems is currently in progress.

Accessible formats for learning

Disabled people often encounter barriers to learning: computer systems may be inaccessible to people with physical or visual impairments, while someone with a learning difficulty may find they cannot use standard textbooks or learning materials. If poorly designed there is the potential for computer technology to create a barrier to learning, but if used well it can provide accessible formats to enable students to engage with learning and training.

Agent-Dysl: Accomodative Intelligent Educational Environments for Dyslexic Learners

Dyslexia is a common learning disorder that affects at least 5% of school children in Europe. The range and severity of the disorder varies, but the main areas of difficulty are reading, writing, spelling, numeracy, personal organisation and time-keeping.

Dyslexia Action was the UK partner on a project funded by the EU FP6 programme aimed at developing an Intelligent Assistive Reading System which could help school-aged readers who have dyslexia to improve their reading. The work involved a consortium of ten partners from six European countries (Spain, Greece and Romania, Denmark, Germany and the UK). The



project, which began in September 2006 and ended in September 2009, has delivered a system which builds and maintains individual profiles by 'observing' each child reading the text on the system's viewing area and by recognising their reading errors.

These individual profiles are used to decide how to present the text in the best way for each child and situation, for example by increasing the font size or altering the colour of the background on the screen. By employing image analysis techniques, the system can assess the child's emotional and physical state and dynamically adapt the document presentation accordingly. The software tool is available in English, Greek, Danish and Spanish versions and the consortium is now planning to make the product commercially available.

Digital interventions for dyscalculia and low numeracy

One significant cause of low maths attainment has had little attention in the mathematics education literature: Developmental Dyscalculia (DD), a specific learning disability involving difficulty in learning or comprehending mathematics which can affect as many as 6.5% of learners in the general population. Special Educational Needs (SEN) teachers who work closely with low numeracy learners have devised highly specialised and effective learning tasks to be undertaken in small group situations which can help learners with numeracy.

The British Educational Communications and Technology Agency (BECTA) funded work at the Institute of Education, University of London, to develop and test pilots of personalised software for learners with dyscalculia and other forms of low numeracy. The aim was that this software could be easily customised by teachers to meet specific needs. Work took place between May 2008 and April 2009 and the project produced a range of prototype games aimed at improving low numeracy which can be downloaded from the project website, along with two examples of customisable software that can be used by teachers for this learner group.

VET4VIP - Vocational English training for visually impaired people

If blind or visually impaired people want to learn a language, they face a problem. Most training materials are based on printed materials or visual information (pictures, whiteboard, etc.). Audio material is available, but almost always designed as an add-on to books and papers. This makes it difficult for people with visual impairment to join classes in language schools because the teachers do not have training materials, nor have they received training to be able to teach people with visual impairment.



© VETVIP Project

VET4VIP is a project funded by the EU Leonardo da Vinci programme that aims to counter these problems. It does so with a package that includes a range of resources, including a train-the-trainer course for language teachers to support them to teach people with visual impairment; guidance on how to use and create teaching materials for this target group using suitable assistive technologies; and adaptable computer-based training modules for teaching Business English.

VET4VIP is a four year project started in December 2009 and involves researchers from Germany, Netherlands, Ireland and Italy. The UK partners are the RNCB and Totnes School of English. The work builds on previous research from the Socrates ALLVIP project, and is using a specially designed joystick which gives feedback to visually impaired users via their sense of touch to enable them to complete language exercises.

AHVITED - Audio Haptics for Visually Impaired Training and Education at a Distance

This project provided an innovative method of delivering visual graphics to people who are blind or visually impaired by using tactile diagrams with integrated sound files using talking tactile technology. The main target group for this project are learners who are blind or visually impaired and who are studying on distance learning programmes. The work was funded by the EU Socrates programme and took place between October 2007 and January 2010. The Royal National College for the Blind (RNCB) was the lead partner in a consortium that included researchers from Denmark, Romania, Austria, and Italy.

The project produced a set of common standards and guidelines for the design and production of talking tactile materials to promote trans-national standardisation. Researchers also developed software for Radio Frequency Identification (RFID) that allows the transfer and updating of information at a distance and improvements in talking tactile technology. Other deliverables were a suite of training and education modules including sex education for use by teachers of visually impaired children, core elements of the curriculum for English, and an introduction to Excel linking to the European Computer Driving Licence (ECDL) qualification.

Communication and control

Technology can provide a means of communication for people with a wide range of impairments. It is clearly vital to all of us to have a voice on issues that matter to us and to be able to communicate with the world around us. Projects reporting this year explored how technology that enables spoken communication is viewed by its users and the factors that make it effective for some and not others. Other projects are exploring the use of cutting edge technologies to understand how individuals with little speech or physical capability can provide commands to control the world around them.

What do users really want from communication aids?

Voice output communication aids (VOCAs) are devices that provide a 'voice' for the user. Although such communication aids are a key tool in the field of augmentative and alternative (AAC) communication, there has been little research into what users think about using them and their design.

The Devices for Dignity Healthcare Technology Co-operative funded a project between January 2008 and January 2010 to investigate what users require from communication aids and how the devices could be improved. The work was undertaken by Assistive Technology Team, Barnsley Hospital NHS Foundation Trust and Sheffield PCT Speech Therapy Department.

In order to report on the priorities of communication aid users a national survey was undertaken, alongside interviews with communication aid users. The data was analysed to provide a rich picture about users' and professionals' perceptions of the features of communication aids. One of the areas identified from initial analysis had been the need for improved decision making in the process of choosing a communication aid. To this end a prototype decision-making tool was developed and it is hoped that further funding will be found to validate this and to develop the prototype further into a tool that will improve the communication aid provision nationally. Researchers believe that results from the project are likely to lead to a better picture about users' requirements for communication aids and that this will impact on the decision making of professionals and product designers.

Outcomes for Children with Complex Needs assessed for Communication Aids: A pilot study

While the benefits of communication aid provision for children has been established in many cases, for others communication aids may not facilitate participation in ways hoped for or expected, and communication aids may be under-used or abandoned. To date there has been little research into the factors that may foster or inhibit the take-up of communication aids and the reasons for children's use or non-use of these technologies. In the absence of clear evidence on the benefits of communication aids it is possible that service provision is falling short, with consequences for children as well as their families, friends and service providers

and commissioners. BECTA funded a pilot study between January 2009 and November 2009 to address this gap in knowledge.

Researchers at University College London developed a questionnaire designed to capture parents' views on how the child's character, environment and type of communication aid influenced their use of the communication aid in informal settings. The findings are currently being analysed. Researchers are now planning the second phase of the project which will involve testing a model which aims to predict how these factors will impact on the successful use of a communication aid for different children.

SPECS - Speech-driven Environmental Control Systems

For some disabled people everyday tasks are impossible without the assistance of an environmental control system (ECS) which allows users to control household devices such as the TV, lights, curtains and doors. However, current ECSs, which are generally operated by a single switch, can often be time-consuming and physically demanding to use. By combining an ECS with automatic speech recognition (ASR) it is possible to overcome these limitations and increase independence for users. However, many ECS users have disordered (dysarthric) speech and there is currently a relatively restricted range of speech-driven ECSs, none of which are sensitive to dysarthric speech. Another challenge to developing a reliable speech-driven ECS is the varying levels of background noise found in most homes.



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“.. it's made life a lot easier and simpler, you know, because there'd be nothing worse than every time you wanted to do a channel change or something having to call your carer.”

Specs project participant

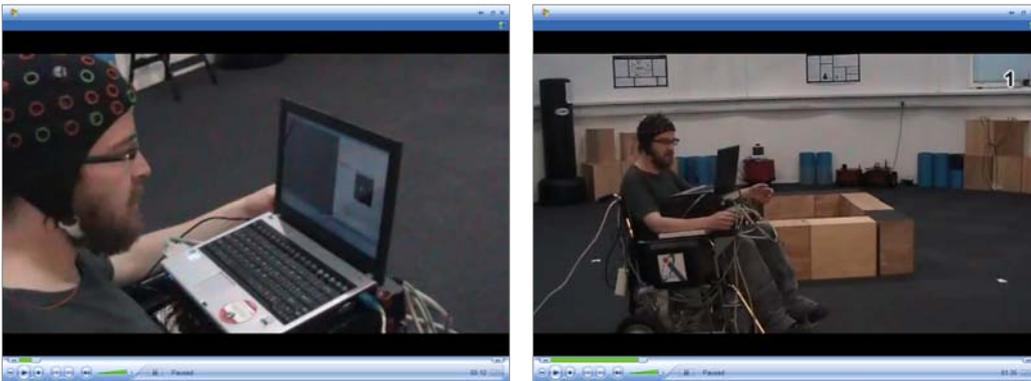
The project, which was funded by NIHR HTD, took place between February 2006 and December 2009, brought together researchers from the Assistive Technology Team, Barnsley Hospital NHS Foundation Trust, with researchers at Sheffield University and two industrial partners (Toby Churchill Ltd and Elpedium Technologies Ltd). As a result of the project the team have developed an ECS that is controlled by ASR and which is sensitive to disordered speech.

The project team involved users at the heart of the design process and the project included an in-depth qualitative investigation into the current use of speech-driven ECS. This investigation enabled the team to learn from the users of current systems and in doing so develop a

specification for the SPECS device. Users highlighted reliability as a key factor in the use or non-use of such a system. The team investigated the use of recent advances in speech technology, such as speaker adaptation and noise robustness, to increase the performance and scope of the system so it can handle larger vocabularies and varying environmental conditions. The research is now focused on improving the user interface, the reliability and appearance of the prototype system, with the aim of developing a commercial product. SPECS is an NHS Innovation Awards Yorkshire and Humber 2010 Finalist.

AABAC - Adaptive Asynchronous Brain-Actuated Control

Researchers at the University of Essex and the University of Oxford were funded by EPSRC from February 2006 to September 2009 to work on a project exploring ways to use brainwaves and thought patterns to control electronic systems via electroencephalography (EEG) based brain-computer interfaces (BCI). A BCI system detects and analyses brain waves and electrical activity inside the brain in order to understand a user's mental state and then translates the mental states into commands for communicating with and controlling computers, robots and other electronic systems.



This project developed new ways to interpret 'self-paced' or asynchronous EEG-based BCI protocols, that is to respond to a person's spontaneous thoughts. An individual produces a distinct pattern of electrical signals by imagining a particular action such as moving a hand or performing a specific mental task. In order to capture these signals, the user wears a cap fitted with electrodes. The computer is able to recognise these signal patterns and interpret them as the user's intention to control an object.

Researchers' work focused on developing new features, new methods for users to choose features, and new online training and adaptation guidance. The aim is that this work will address known areas of difficulty in the use of this kind of 'self-paced' or spontaneous EEG-based BCI system, and will therefore help to improve the accuracy and usability of the system. The work on the AABAC project has resulted in over 30 publications as well as state-of-the-art self-paced BCI systems for real-time wheelchair and robot control.

COGAIN - Communication by Gaze Interaction

For physically disabled people with restricted hand and arm movement, eye gaze technology offers a way of controlling a computer or environmental control system. The current challenge is that these systems do not always work with other communication systems that are on the market. The market for eye gaze software has only recently developed and so there is a range of proprietary solutions emerging, the result of a range of recent research and development initiatives. The result for the end user is that a given software system often works only with one particular eye tracking device, and users may not be able to use their preferred set of communication symbols with their choice of eye-gaze system. The EU's FP6 programme funded a project between September 2004 and August 2009 to create a portfolio of compatible and usable software tools and devices.



The project brought together a forum of researchers, equipment developers, user representatives and users of eye gaze communication technology. There were 20 participants and the UK partners were the ACE Centre and Loughborough University. Research focused on improving the software applications, making it easier to transfer software across different hardware platforms, reducing the costs of the technology and encouraging a high degree of user involvement

in the eye-gaze research community. As a result of this work reports and software downloads, covering user requirements, and communication and leisure applications, are available from the project website. 'Eye control hints and tips' is a multimedia training resource which aims to make the initial assessment process and eye control take-up as successful as possible for as many people as possible, and the website hosts a series of talks and lectures on the development of eye-gaze technology for both researchers and users. The project held two major conferences on eye-gaze technology and offered an annual student prize for work in this area.

Project participants have founded the COGAIN Association which aims to promote research and development in the field of gaze-based interaction in computer-aided communication and control and will continue some of the work started by the project.

Research strategy – mapping the issues

Since publication of the Cooksey review of UK health research funding in 2006, there has been an increasing emphasis on the effective translation of research into health and economic benefits. The need to cite evidence of market needs and gaps has become one of the criteria for funding for projects that are considering prototype development beyond the initial technical feasibility study stage. For academic organisations, taking a product through the development and marketing stages is a complex task, requiring collaboration with industry partners and investment in market research. The consequence has been that, over the past few years there has been a noticeable trend towards the funding of a smaller number of larger collaborative projects that require significant funding amounts.

In order to inform research funding strategy, to manage investment risk and to provide evidence of market gaps and deficits which can be addressed by future academic researchers and developers, a range of 'road-maps' or market mapping exercises have been commissioned that report this year. For similar reasons there has been investment in knowledge transfer events, including workshops, seminars and related training development.

The [AALIANCE - European ambient assisted living innovation alliance](#) project has delivered the Ambient Assisted Living (AAL) Roadmap which provides an in-depth look into the future of AAL application areas, concepts and technologies looking forward to 2025, along with policy recommendations and a standardisation report focusing on interoperability.

The project, which ran from January 2008 to March 2010, set up a network that started with 14 partners and later extended to 35. These partners include technology providers and systems integrators, service providers, research organisations and end user associations. Funding came from the EU FP7 programme, and the UK partner was the University of Newcastle.

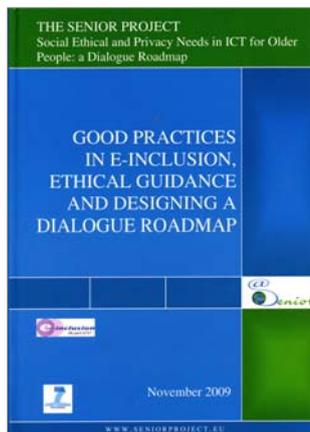
While it is accepted that assistive technology devices may provide support to people with dementia, there are few guidelines on how to implement telecare and telehealth services successfully in the community for people with dementia. In order to map the issues that may create barriers to successful implementation, [An international workshop on the implementation of assistive technology for people with dementia](#), was funded by EPSRC between August 2008 and May 2009. Delegates from academia, local authorities, care homes and industry in the UK and Canada met at workshops organised by the Bath Institute of Medical Engineering (BIME).

The workshops identified key challenges including workforce training and development, commercialisation of research into products, creating a robust evidence base, and the need for appropriate outcome measures. Seven project proposals for collaborative work to address

these issues were drafted as a result of the workshops. Funding for this proposed work is now being sought in Canada and the UK.

In order to overcome barriers to ICT take up, the EU has commissioned research on the market for inclusive and assistive information and communication technology (ICT). The study, [ICT & Ageing: Users, Markets and Technologies](#), was commissioned under the European Commission Framework Programme 7 from Work Research Centre Ltd who worked with partners in Germany, Austria. The first phase of the study focused especially on developing a base line view on the market situation in Europe and beyond, looking at market maturity, costs, who pays and how much, and what players are involved in the service provision supply chain. In January 2010 the project published a report on the ethical issues that arise when considering the application of ICTs to support independent living and home care.

There is concern at a European level that ICT solutions are often designed without taking into



account the needs of older people or disabled people and that older people feel uncomfortable with ICT technologies. [SENIOR - Social Ethical and privacy Needs in ICT for Older people: a dialogue Roadmap](#) was funded by the EU FP7 programme to provide a systematic assessment of the issues involved in ICT and ageing. The consortium included participants from Italy, Romania, Denmark and Belgium. The UK partner was Trilateral Research and Consulting, and the work took place between January 2008 and December 2009.

The project has published several reports on its website, including an Environmental Scanning Report which reviews policy documents, projects and studies dealing with ICT, older people, inclusion, privacy and ethical issues in order to identify key themes, clusters of projects, and gaps. It has convened several workshops and meetings of experts.

Between 2004 and 2009 the University of Glasgow department of Computing Science organised a series of scientific conferences, workshops, seminars, tutorials and meetings, [CWST: Conferences, Workshops, Seminars and Tutorials to support e-inclusion](#). These were organised in partnership with academic and commercial partners in Austria and funded by the European Commission FP6 programme. The consortium included experienced organisations responsible for well established events, journals and other publications which have helped to develop the field.

Members of the [DfA@eInclusion: Design for All for eInclusion](#) led by Collaborative International Research Centre, Middlesex University, have developed curriculum guidelines to support training and education at Bachelor and Masters level and to provide professional development in Design for All in ICT, and Middlesex University is piloting such a course. The project consortium has 23 partners, all of whom are also the national contact centres for the European Design for All eAccessibility Network (EDeAN) in their countries and the project was funded

under European Commission FP6 and ran from January 2007 to December 2009. The project designed and developed a web portal to support the online activities of the network members and serve both as a communication tool and as an information gateway. The project published a report "Accessibility of European Commission Websites - Analysis of current status and recommendations for improvement".

Researchers at the School of Computing, University of Dundee, used a novel methodology to undertake [Requirements Gathering for an inclusive Digital Economy](#). With funding from the EPSRC and working with the IBM Watson Research Centre, University of Miami School of Medicine the project team employed the skills of theatre professionals to facilitate discussions with groups of older workers. This research, which ran from August 2008 to June 2009, was aimed at understanding the needs of older adults when it comes to job performance, and the conceptual challenges in designing appropriate accessible technology for an increasingly ageing workforce. This project examined attitudes of older and retired workers to the introduction of novel technology, doing so from an international perspective, and showed that theatre can be used to facilitate discussion.

As the proportion of retired people amongst the general population increases, there is growing interest in the development of a 'silver economy' and in finding ways of helping retired people leverage their skills and talents for the benefit of society and the economy as a whole. The aim of [ePAL - extending Professional Active Life](#), an EU Framework Programme 7 funded project which took place between February 2008 and January 2010, was to develop a strategic research roadmap which will promote active ageing and help people make the transition to retirement and a balanced active life. The UK partner, White Loop consultancy, collaborated with partners in Netherlands, Portugal and Spain.

The project explored the use of virtual communities as a way of helping older people plan an active retirement. The focus is to find ways of supporting and encouraging older people to remain active by engaging in professional activities, particularly in relation to businesses. By early 2010 the project had finalised a roadmap following an eight month intensive consultation with stakeholders in different regions of Europe in which more than 170 people participated. In February 2010 members of the consortium met with the Confederation of British Industry (CBI) to introduce the ePAL project and learn how project objectives are being addressed by Britain's major employers and industrial sector.

The range and type of AT on offer is growing rapidly, but there are few, if any, appropriate training courses for people who may need to know how to choose, use and assess AT. The [Assistive Technology Vocational Education and Training \(ATVET\)](#) project was funded under the EU Leonardo da Vinci programme to establish European accredited qualifications for those who support users of AT, including care workers, teaching assistants, AT manufacturers, professionals in the AT sector and community support staff.



The work took place between November 2007 and October 2009 in collaboration between partners from Germany, Finland, the Central Remedial Clinic in Ireland and Hereward College and the charity HFT in the UK. Researchers produced a scoping report outlining existing provision of education and training in the AT sector in their countries, based on interviews and questionnaires with AT professionals and staff working in the health and social care industry. Using the underlying principles of an existing UK-based vocational qualification aimed at frontline staff, the ATVET project's final outcome was a blended learning package which combines face-to-face delivery with online interactive modules, which has been tested with groups of pilot users in all four countries.

Online content for nine modules of the English version of the qualification has been produced and can now be hosted on Virtual Learning Environments. The final stage of the project saw the development of a course handbook in English, German and Finnish as well as the dissemination of the project's outcomes at events in the UK and Ireland.

Between April 2008 and June 2009 the independent media regulator Ofcom commissioned a study [Exploring how manufacturers, suppliers and retailers address the needs of older and disabled people: what are the barriers and drivers?](#) carried out by i2 Media Research (a commercial spin off company from Goldsmiths College). The study aimed to understand how manufacturers, suppliers and retailers of domestic electronic communications equipment, products and services address the needs of older and disabled people, with a particular focus on the barriers and drivers within the industry.

The project's final report highlights several barriers to industry better addressing the needs of older and disabled people, including a lack of user research; a lack of knowledge of accessibility requirements; commercial issues including international design and production activities; and the lack of a compelling business case. The report acknowledged the challenges raised by the current economic downturn, and a perceived view that the market for more accessible products was small. Suggestions for improvements included senior level championship of accessibility issues, more user research; the use of financial incentives; and the requirement to report details of accessibility achievement annually to an independent body.

The [COGWORKS - The Cognitive Health and Wellbeing Hub](#) is a collaborative network made up of researchers from a wide range of disciplines including architecture, medicine, sociology and law. Its aim is to create a research strategy focused on what can be done at various stages throughout a person's life to ensure they remain as healthy and alert as possible. The hub was funded for a year from March 2009 by the Lifelong Health and Wellbeing (LLHW)

collaborative funding initiative and led by Queen's University Belfast. Other partners were the University of Ulster, Brunel University and Warwick University.

The group has held focus groups and conferences around four themes: lifelong health and wellbeing: maximising capacity to benefit across the life span; the impact of caring and disability on cognitive and related areas of mental health; the influence of the built environment on cognitive decline and wellbeing; and the provision of new cognitive technologies that support and monitor middle aged and older adults. A major conference was held in spring 2010 in Belfast to share learning. This work has resulted in the development of proposals to be put forward to phase three of the LLHW funding programme.

Evaluation programmes and projects

The NHS Purchasing and Supply Agency (NHS PASA) Centre for Evidence Based Purchasing (CEP) website closed on 31 March 2010 and responsibility for non-clinical goods and service have transferred to the Department of Health, Buying Solutions and NHS Supply Chain. All existing NHS PASA framework agreements remain in place, as do the Terms & Conditions for any current agreements.

Buying Solutions is undertaking a review of the Framework Agreement for telecare services. In March 2010 it placed its Contract Notice in the Official Journal of the European Union (OJEU) for bids from suppliers to be included in the Framework Agreement for the next two years, with possible extension to four. Buying Solutions has divided the market into six parts and has produced lists of elements within each part. They are telecare products; telecare services; telehealth products; telehealth services; telecoaching products and services and managed services (this includes consultancy). With little evidence of effectiveness for telecare and telehealth technologies at the level of specific brands in this rapidly moving market, then inclusion in a Framework Agreement is seen as providing a level of assurance to buyers, although this is not substantiated by an evaluation programme at this point.

Before closing CEP published a couple of assistive technology reports. In March 2010 CEP published an Evidence Review on [Integrated seat-raisers for powered wheelchairs](#). Wheelchair seat-raisers are powered seating mechanisms which may be supplied as after-market additions or integrated into the wheelchair design. These devices raise or lower a seated wheelchair user without changing the angle of the seat relative to the ground. The wheelchair seat-raiser can assist the user to transfer from the wheelchair to other surfaces, to reach surfaces or objects more easily, and to reduce strain on the neck from constantly looking up at other people. It can also help on a psychological and social level, by allowing wheelchair users to adjust their eye-level to that of others, facilitating social interaction.

At the time of the review, there was no specific national guidance on seat-raisers for powered wheelchairs. Four papers were identified and reviewed, and two postal questionnaires were used. One was sent to 94 wheelchair centres, and the second to 308 users of wheelchair seat-raisers to assess their opinion of the device and its contribution to quality of life. The survey of wheelchair centres indicated that seat-raisers are infrequently prescribed, with cost commonly cited as the main reason. However, the user survey indicated support for seat-raisers among current users. Responses suggested users became more socially interactive, less dependent on parents and carers and were able to complete many more everyday tasks.

CEP recommended further user trials and economic modelling to clarify the clinical effectiveness and economic viability of the devices, and said further research should be undertaken to determine the effects of the prolonged use of a wheelchair without a seat-raiser, such as muscle strain from continually reaching or looking upwards.

In February 2010 CEP published a market review and a buyer's guide to [Functional electrical stimulation for drop foot of central neurological origin](#). CEP's study identified a number of technical factors which needed to be considered. These were the comparison between implanted and surface devices; the comparison of heel switches with alternatives such as accelerometers or tilt sensors; the comparison between wired and wireless systems; and the importance of flexibility in electrode positioning.

A review of the published literature on this technology found no studies addressing these concerns, and no major study results have been published since a NICE evidence review of functional electrical stimulation (FES) for people with multiple sclerosis in 2005.

CEP said there is no conclusive evidence on the relative performance of different FES systems, and many of the decisions to be made in choosing equipment are likely to be based largely on user preference and clinical judgement.

As CEP closes, the funding stream from the National Institute of Health Research, the Health Technology Assessment (HTA) Clinical Trials has expanded its remit to become the [HTA Clinical Evaluation and Trials](#) funding stream. HTA fund a wide range of evaluations, many of which relate to pharmaceutical or therapeutic interventions. A small number of these trials relate to assistive technology. One evaluation, published in October 2009, relates to [The effectiveness and cost-effectiveness of cochlear implants for severe to profound deafness in children and adults: a systematic review and economic model](#). This study was carried out by the Peninsula Medical School, University of Exeter. The study found that unilateral cochlear implantation (in one ear) is likely to be safe and effective for adults and children, as well as being cost-effective, and that there are likely to be overall additional benefits from bilateral implantation (in both ears), enabling children and adults to hold conversations more easily in social situations.

Outline proposals for the HTA Clinical Evaluation and Trials work stream to assess the effectiveness of treatments and tests within the NHS are accepted on an ongoing basis, and for assistive technology there will be three relevant calls this year focused on palliative and supportive care, management of disability after trauma and learning disabilities.

Further details on these evaluation projects and links to full information on the FAST database can be found in Annex A.

Research and development work relating to assistive technology 2009-10 – Annex A

Presented to Parliament pursuant to section 22 of
the Chronically Sick and Disabled Persons Act 1970

Annex A: Complete listing of AT research and development activity 2009-10

Glossary of acronyms for funders:

ALIP	Assisted Living Innovation Platform (Technology Strategy Board)
ALL	Ambient Assisted Living Joint Programme
BECTA	British Educational Communications and Technology Agency
D4D HTC	Devices for Dignity Healthcare Technology Cooperative
DCSF	Department for Children, Schools and Families
DELNI	Department for Employment and Learning in Northern Ireland
Department of Health PRP	Policy Research Programme
Department of Health ICTRI	Information Communication Technology Research Initiative
Department of Health TSIP	Third Sector Improvement Programme (previously Section 64)
EPSRC	Engineering and Physical Sciences Research Council
ESRC	Economic and Social Research Council
European Commission CIP	Competitiveness and Innovation Framework Programme
European Commission eTEN	e-services Trans-European Network
European Commission FP6	Framework Programme 6
European Commission FP7	Framework Programme 7
European Commission ISMD	Information. Society and Media Directorate
JISC	Joint Information Systems Committee
JIT	Joint Improvement Team (Scotland)
LLP	European Commission's Lifelong Learning Programme
LLHW	Lifelong Health and Wellbeing. A collaboration between Arts and Humanities Research Council (AHRC); Biotechnology and Biological Sciences Research Council (BBSRC); Engineering and Physical Sciences Research Council (EPSRC); Economic and Social Research Council (ESRC); Medical Research Council (MRC). UK Health Department partners are: Chief Scientist Office of the Scottish Government Health Directorates; Department of Health/ National Institute for Health Research England; Health and Social Care Research & Development Office, Northern Ireland; Wales Office of Research and Development for Health and Social Care, Welsh Assembly Government.
NDA	New Dynamics of Ageing programme. A collaboration between 5 UK Research Councils: ESRC, EPSRC, BBSRC (Biotechnology and Biological Sciences Research Council), MRC (Medical Research Council) and AHRC (Arts and Humanities Research Council)
NIHPSS R&D	Northern Ireland Health and Personal Social Services
NIHR	National Institute for Health Research
NIHR HTA	Health Technology Assessment programme
NIHR HTD	Health Technology Devices programme

NIHR i4i	Invention for Innovation programme
NIHR RfPB	Research for Patient Benefit
Ofcom ACOD	Office of Communications Advisory Committee on Older and Disabled People
SFC	Scottish Funding Council
TLRP	Teaching and Learning Research Programme
TSB	Technology Strategy Board
UKIERI	UK-India Education and Research Initiative
WORD	Wales Office for Research and Development

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>A cluster randomised controlled trial of an occupational therapy intervention for residents with stroke living in UK care-homes</p> <p>Research team: Primary Care Clinical Sciences, University of Birmingham Contact: 0121 414 6764 Funder: NIHR HTA Amount: £1,930,486</p>	<p>This study is evaluating the effects of a targeted course of occupational therapy, including the provision of adaptive equipment and minor environmental adaptations, for people living in care homes with a history of stroke or transient ischaemic attack. The aim is to assess the impact of any such interventions on people's ability to look after themselves and on their mobility.</p> <p>Link to more information on FAST website</p>	<p>01/09/2009 30/08/2014</p>
<p>A multiscale analysis of frictional interaction between human skin and nonwoven fabrics</p> <p>Research team: Continence and Skin Technology Group, University College London Contact: 020 7679 0200 Funder: EPSRC, SCA Hygiene Amount: £60,000</p>	<p>This project aims to develop and validate mathematical models to aid in the development of materials which reduce the skin abrasions caused by wearing incontinence pads. So far three papers have been published.</p> <p>Link to more information on FAST website</p>	<p>01/09/2007 31/08/2010</p>
<p>A pilot study to explore the feasibility of computerised cognitive behaviour therapy (Think, Feel, Do) for children with emotional disorders</p> <p>Research team: Mental Health Research & Development Unit, University of Bath Contact: 01225 38 4356 Funder: NIHR RfPB Amount: £184,349</p>	<p>Researchers are testing a computerised cognitive behavioural therapy (CBT) programme with young people with mental health difficulties. Early findings showed that young people and parents were generally positive and see advantages in this method of delivery, while mental health clinicians felt the programme could be useful for children with mild and moderate, rather than severe, mental health disorders.</p> <p>Link to more information on FAST website</p>	<p>01/09/2008 28/02/2010</p>
<p>A randomised controlled trial of pharyngeal electrical stimulation in the treatment of dysphagia after brain injury</p> <p>Research team: School of Medicine, University of Manchester Contact: 0161 306 0200 Funder: NIHR RfPB Amount: £249,703</p>	<p>This is a large hospital-based randomised controlled trial of a therapy for people who have difficulty swallowing following a stroke. The therapy uses electrical stimulation of the pharynx through a specially designed swallowed tube and is being assessed with 120 people.</p> <p>Link to more information on FAST website</p>	<p>01/07/2009 30/06/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>A Tongue Movement Command and Control System Based on Aural Flow Monitoring</p> <p>Research team: Dept of Mechanical Engineering, University of Bristol Contact: 0117 928 7741 Other partners: University of Southampton Funder: EPSRC Amount: £269,165</p>	<p>Researchers have developed new algorithms which have achieved 97-99% correct classification of four different tongue movements for seven test subjects. These have been used to develop a system which allows people to control a prosthetic arm and a power wheelchair by tongue movements.</p> <p>Link to more information on FAST website</p>	<p>01/10/2007 31/03/2011</p>
<p>AABAC: Adaptive Asynchronous Brain-Actuated Control</p> <p>Research team: School of Computer Science and Electronic Engineering, University of Essex Contact: 01206 872770 Other partners: University of Oxford Funder: EPSRC Amount: £442,401</p>	<p>This project has developed a prototype computer system which learns to recognise changes in the electrical activity produced by neurons in the brain when someone is imagining a particular movement. The prototype allows users to play simple computer games, and research is now focused on using the system to control wheelchair movements and environmental controls.</p> <p>Link to more information on FAST website</p>	<p>01/04/2006 30/09/2009</p>
<p>AALIANCE: European ambient assisted living innovation alliance</p> <p>Research team: School of Civil Engineering and Geosciences, University of Newcastle Contact: 0191 222 6323 Other partners: More than 35 partners in Germany, Belgium, Italy, Finland, Sweden, France, Spain and the Netherlands Funder: European Commission FP7 Amount: £1,650,000</p>	<p>The project has delivered the Ambient Assisted Living (AAL) Roadmap which provides an in-depth look into the future of AAL application areas, concepts and technologies, along with policy recommendations and a standardisation report focusing on interoperability. A network of more than 35 partners has been created.</p> <p>Link to more information on FAST website</p>	<p>01/01/2008 31/03/2010</p>
<p>Accessible Receptive Language Assessment</p> <p>Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Funder: D4D HTC Amount: £7,000</p>	<p>This work is developing a language comprehension assessment suitable for use by children with physical disabilities. The assessment will be computer-based and accessible via a range of input methods including switches, eye gaze and head-mouse. The design of the assessment and pre-assessment access test is currently underway.</p> <p>Link to more information on FAST website</p>	<p>01/01/2010 30/09/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Accessible Resources Pilot Project Research team: Dolphin Computer Access Contact: 01905 754 577 Other partners: University of Southampton, RPM Associates, Inclusive Technology Ltd Funder: DCSF Amount: Not disclosed	This project is developing and trialling alternative formats to printed text for use by visually impaired and dyslexic pupils in order to make recommendations for specialist producers, teachers, parents and children on how to produce and deliver better and more efficient alternative formats. Link to more information on FAST website	01/09/2009 31/12/2010
ACT NoW: Assessing the effectiveness of Communication Therapy in the North West Research team: Human Communication and Deafness, University of Manchester Contact: 0161 275 3389 Funder: NIHR HTA, Stroke Association Amount: £1,487,545	This randomised controlled trial is evaluating the effectiveness, cost effectiveness and service user preferences for communication therapy following stroke. Resources developed so far are the Communication Outcomes after Stroke Scale (COAST) and the Carer COAST. Link to more information on FAST website	01/10/2004 31/10/2010
Adaptive Technologies for Enhancing the Accessibility of Digital TV Research team: School of Computing, University of Dundee Contact: 01382 385597 Funder: BBC Research, EPSRC Amount: Not disclosed	The aim of this work is to evaluate which technologies have the potential to improve the accessibility of digital television for people with cognitive or physical dexterity difficulties. Options under assessment include speech synthesis, speech recognition, gesture recognition and software agents that will find and recommend interesting content for the viewer. Link to more information on FAST website	01/06/2009 31/12/2012
AEGIS: open Accessibility Everywhere: Groundwork, Infrastructure, Standards Research team: Inference Group, Cambridge University Contact: 01223 337200 Other partners: ACE Centre, Royal National Institute for the Blind plus 20 partners from Greece, Czech Republic, Spain, Belgium, Romania, Germany, Switzerland, Sweden and Canada Funder: European Commission FP7 Amount: €8,220,000	The project will identify user needs and the methods of interaction with technology for several user groups, including people with visual, hearing, mobility, speech and cognitive impairments. The goal is to develop open source-based generalised accessibility support for mainstream ICT devices and applications on the desktop, the Internet and for mobile devices. Link to more information on FAST website	01/09/2008 29/02/2012

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Agent-Dysl: Accommodative Intelligent Educational Environments for Dyslexic Learners</p> <p>Research team: Dyslexia Action (Assessment and Evaluation Centre) Contact: 01904 328460 Other partners: Partners in Greece, Romania, Denmark, Germany and Spain Funder: European Commission FP6 Amount: €2,000,000</p>	<p>This project has developed the user requirements and technical specifications for an Intelligent Assistive Reading System, which can help school-aged readers who have dyslexia to improve their reading. Children receive personalised attention through the system, with customised presentation of reading material, based on individual profiles built up through 'observation' of each child reading the text on the system's viewing area and by recognising the types of their reading errors.</p> <p>Link to more information on FAST website</p>	<p>01/09/2006 01/09/2009</p>
<p>AHEAD-EU: Advancing Higher Education Access for Disabled students in Europe</p> <p>Research team: International School for Communities, Rights & Inclusion, University of Central Lancashire Contact: 01772 892780 Other partners: Frankfurt University, University of Gothenburg Funder: European Commission Erasmus Mundus programme Amount: €242,988</p>	<p>This project seeks to promote the inclusion of disabled people in the higher education system and to create a sustainable mechanism to reduce the barriers to access, participation and graduation. Researchers have set up a website and social networking page to encourage user participation.</p> <p>Link to more information on FAST website</p>	<p>01/06/2009 01/06/2012</p>
<p>AHVITED: Audio Haptics for Visually Impaired Training and Education at a Distance</p> <p>Research team: Royal National College for the Blind Contact: 01432 265725 Other partners: Dublin City University plus partners in Denmark, Romania, Austria and Italy Funder: European Commission Socrates Programme Amount: €576,434</p>	<p>Researchers are developing and testing accessible materials and software for distance learning, primarily using 'talking tactile technology'. The project is entering the product evaluation stage where course materials are going to be evaluated by five participants in each of five countries.</p> <p>Link to more information on FAST website</p>	<p>01/10/2007 01/01/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>AIM: Automated Intention Monitoring project: a randomised controlled trial of a new technique for improving organisational abilities in people with acquired brain injury</p> <p>Research team: Oliver Zangwill Centre, The Princess of Wales Hospital Contact: 01353 652165 Other partners: Medical Research Council Cognition and Brain Sciences Unit Funder: NIHR RfPB Amount: £250,000</p>	<p>The aim of the project is to investigate methods for helping patients with acquired brain injury cope with the demands of their day-to-day lives. Research will focus on alerts delivered via mobile phone text messaging, and will assess whether such a service can help improve patients' and carers' emotional well-being and stress. Link to more information on FAST website</p>	<p>01/04/2008 31/03/2011</p>
<p>ALMS: Advanced Lifestyle Monitoring Systems</p> <p>Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Other partners: University of Sheffield, Medipex Ltd Funder: NIHR HTD Amount: £770,700</p>	<p>This project developed a lifestyle monitoring system to assess the well-being of older people living at home. The research showed that it was possible to analyse complex behaviours using simple technology and for the system to provide alerts that could indicate a decline in someone's health and well-being. This research is being carried on in a follow-on project with a larger number of participants. Link to more information on FAST website</p>	<p>01/04/2006 31/03/2010</p>
<p>An advanced FES rehabilitation tool for upper limb therapy after stroke</p> <p>Research team: School of Computing, Science and Engineering, University of Salford Contact: 0161 295 5986 Other partners: National Clinical FES Centre, University of Leeds, Woodend Hospital, University of Aberystwyth Funder: NIHR i4i Amount: Not disclosed</p>	<p>The aim of the research is to create a muscle stimulation system to provide hand and arm therapy for people who have had a stroke. The approach combines electrical stimulation for hand opening and robot-assisted shoulder and elbow exercise. Link to more information on FAST website</p>	<p>01/09/2009 30/08/2012</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>An evaluation of the potential benefits of proactive preventative telecare and telehealth systems</p> <p>Research team: Tynetec Contact: info@isfocus.co.uk Other partners: Aid-Call Ltd; Darlington Borough Council; Intrahealth Ltd; Your Homes Newcastle; Brunel University Funder: ALIP Amount: £1,213,754</p>	<p>The project team installed equipment in people's homes to collect data which, combined with the use of intelligent system calculations, could be used to provide 'early warning' of changes in health and wellbeing. Early findings show it is possible to monitor and highlight changes in average daily activity patterns which could indicate problems, and work is now focused on creating intelligent algorithms to support this approach.</p> <p>Link to more information on FAST website</p>	<p>01/10/2008 01/03/2010</p>
<p>An Evolvable Computer Interface for Elderly Users</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Funder: DELNI Amount: £39,000</p>	<p>Researchers have built a prototype intelligent help facility that assists older users with browsing activities by responding to each person's specific needs and actions. The system has been tested and evaluated by older people over a period of six months and results are currently being analysed; however preliminary findings show that older people benefit from having individual assistance.</p> <p>Link to more information on FAST website</p>	<p>01/10/2006 30/09/2009</p>
<p>An international workshop on the implementation of assistive technology for people with dementia</p> <p>Research team: Bath Institute of Medical Engineering Contact: 01225 824103 Other partners: University of Bath, University of York, University of Stirling, University of Ulster, University of St Andrews, Sheffield Hallam University, University of Reading, plus UK non governmental agencies and academic and non governmental partners in Canada Funder: EPSRC Amount: £19,962</p>	<p>Two workshops identified key challenges in implementing assistive technology for people with dementia, including workforce training and development, commercialisation of research into products, creating a robust evidence base, and the need for appropriate outcome measures. Funding is now being sought in Canada and the UK for seven collaborative project proposals to address these issues.</p> <p>Link to more information on FAST website</p>	<p>01/08/2008 31/05/2009</p>
<p>Analogue Evolutionary Brain Computer Interfaces</p> <p>Research team: School of Computer Science and Electronic Engineering, University of Essex Contact: 01206 872770 Funder: EPSRC Amount: £370,346</p>	<p>This project is investigating ways of allowing people to control computer access devices via brain waves. Researchers have produced a prototype brain-computer interface mouse capable of full 2-D motion control.</p> <p>Link to more information on FAST website</p>	<p>01/06/2008 31/05/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
ASPIIS: A Secure Platform for IPTV Systems Research team: Global Security Intelligence Limited Contact: 0207 993 4431 Other partners: Commercial partners in Cyprus and Greece Funder: EUREKA's Eurostars Programme Amount: Not disclosed	The aim of this project is to develop a technical solution that will allow users to share their personal details in an easy, controlled and secure manner on an IPTV platform. This is significant in particular for older people, who may not have any existing internet access or who may not be comfortable interfacing via a PC, but who will be able to make use of all types of e-services, thus increasing social inclusion. Link to more information on FAST website	01/07/2009 30/06/2011
Assistive Technology Innovations Broker Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Other partners: Funder: D4D HTC Amount: £21,000	This project is creating an online resource to bring assistive technology innovators, manufacturers and users together to lead to improved and increased assistive technology innovations being available in the market place. The site is almost ready to be piloted. Further funding is sought to take the design forward by revisions based on feedback and to add value by adding new features addressing complementary activities. Link to more information on FAST website	01/05/2008 01/05/2010
ASTERICS: ASsistive TEchnology Rapid Integration and Construction Set Research team: Sensory Software Ltd Contact: Other partners: Partners in Poland, Czech Republic, Austria, Spain, France, Cyprus Funder: European Commission FP7 Amount: €3,380,000	Researchers are developing flexible and affordable 'actuators' which enable people with different disabilities to interact with standard computer systems, mobile phones or smart home devices using emerging sensor techniques like brain-computer interfaces and computer vision. Link to more information on FAST website	01/01/2010 31/21/2012
AT Information Network for the Future Research team: Disabled Living Foundation Contact: 0845 130 9177 Other partners: FAST, Assist UK, Ricability Funder: Dept of Health TSIP Amount: £100,000	This network of organisations within the assistive technology (AT) sector is working to improve the provision of information about AT products and services to older and disabled people. The alliance has produced a report on the state of provision of AT information and is developing a web portal to provide a 'one stop shop' of resources for people wanting to know more about AT. Link to more information on FAST website	01/04/2008 31/03/2011

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>ATRAS: Assistive Technologies for Rehabilitation of the Arm following Stroke</p> <p>Research team: National Clinical FES Centre Contact: 01722 425138 Other partners: Keele University, University of Southampton, Royal Bournemouth and Christchurch Hospital NHS Foundation Trust, Salisbury NHS Foundation Trust, Stoke on Trent NHS Primary Care Trust Funder: NIHR Programme Grant for Applied Research Amount: £803,231</p>	<p>This programme of research seeks to make significant improvements to the rehabilitation of the hand and arm following a stroke by investigating the use of different types of assistive technology, including functional electrical stimulation and the use of orthotics and robot-assisted therapies. The final outcome will be a Care Pathway for use in stroke units around the UK. Link to more information on FAST website</p>	<p>01/01/2009 31/12/2013</p>
<p>Attendant Wheelchair Propulsion</p> <p>Research team: Aspire Centre for Disability Sciences Contact: 020 8954 2300 Other partners: University College London Funder: EPSRC, NHS London Amount: £25,000</p>	<p>The aim of the project is to assess how difficult everyday tasks are when pushing an occupied standard 9L wheelchair. Researchers have completed a study looking at the handle forces and ground reaction forces generated when the rolling resistance of the wheelchair is increased. They are now looking at predicting the forces on the lumbar spine and shoulder whilst pushing on flat and sloped surfaces, and whilst going up and down stairs. Link to more information on FAST website</p>	<p>25/09/2006 15/09/2009</p>
<p>ATVET</p> <p>Research team: Hereward College Contact: 024 7646 1231 Other partners: Central Remedial Clinic, Dublin, plus partners in Finland and Germany Funder: European Commission Leonardo da Vinci Programme Amount: €398,000</p>	<p>This project has developed accredited (where applicable), blended learning programmes which include an online interactive medium for people working directly to support users of assistive technology. Part of this package has been translated into partner languages. Link to more information on FAST website</p>	<p>01/11/2007 31/10/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>AUNT-SUE: Accessibility and User Needs in Transport for Sustainable Urban Environments</p> <p>Research team: Transport Research And Consultancy, London Metropolitan University Contact: 020 7133 3932/5188 Other partners: Loughborough University, University College London, plus local councils, passenger transport authorities and user groups across the UK Funder: EPSRC Amount: £296,702</p>	<p>Researchers have developed a 'tool kit' to support the integration of policy, design and operations to make travel more inclusive. The project has reached its final stage, but all consortium members will continue to report any new insights or developments on the project website. Link to more information on FAST website</p>	<p>01/07/2007 31/03/2010</p>
<p>Automatically-determined unit inventories for unit selection text-to-speech synthesis</p> <p>Research team: Centre for Speech Technology Research, University of Edinburgh Contact: 0131 650 4434 Funder: EPSRC Amount: £238,471</p>	<p>The aim of this project is to develop methods which will make it much quicker and cheaper to create new voices for speech synthesisers and which will also allow non-experts to carry out this work. Link to more information on FAST website</p>	<p>01/06/2006 31/05/2009</p>
<p>Biomechanical and sensory constraints of step and stair negotiation in old age</p> <p>Research team: Institute for Biomedical Research into Human Movement and Health, Manchester Metropolitan University Contact: 0161 247 5593/5581 Other partners: Funder: NDA Amount: Not disclosed</p>	<p>Researchers are looking at how musculoskeletal and sensory functions affect the ability to take steps safely, and how they deteriorate with age. Fifty older participants, including people with a history of falls, and fifty younger participants are being tested on a staircase with adjustable step-going and step-rise to see how design changes could improve performance. Link to more information on FAST website</p>	<p>01/09/2009 30/08/2011</p>
<p>BRAIN: BCIs with Rapid Automated Interfaces for Nonexperts</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Other partners: Cedar Foundation, plus partners in Netherlands, Spain, and Poland Funder: European Commission FP7 Amount: €4,000,000</p>	<p>The aim of this project is to improve the reliability, flexibility and accessibility of brain-computer interfaces (BCIs). The goal is to develop lightweight, inexpensive sensors which do not require significant preparation or cleanup times, or uncomfortable electrode gel, and which do not need exposed wires or cables, expert assistance or laboratory conditions in order to work. Link to more information on FAST website</p>	<p>01/09/2008 31/08/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>BRIDGE: Building Relationships with the 'Invisible' in the Digital (Global) Economy</p> <p>Research team: University of Edinburgh Business School Contact: 0131 651 3198 Other partners: University of Leeds, Middlesex University Funder: EPSRC Amount: £767,623</p>	<p>Researchers plan to build a 'Bridge' from the needs of technologically excluded users to the capabilities of suppliers of products and services. Current work is focused on mapping the 'digital' view large global corporations typically hold about their current customers and markets. Link to more information on FAST website</p>	<p>01/05/2009 31/10/2011</p>
<p>Bug-free prostheses: Reducing infection risk and improving reliability</p> <p>Research team: Department of Civil Engineering, University of Strathclyde Contact: 0141 548 3277 Other partners: National Centre for Prosthetics and Orthotics, University of Strathclyde Funder: EPSRC Amount: £20,308</p>	<p>This feasibility study will collect data on the microbial populations present on the skin and within the liner of the prosthetic limbs with the aim of designing new lining materials and prosthetic interface systems to reduce the risk of bacterial infection in the socket, which can affect 50% of users. Link to more information on FAST website</p>	<p>01/11/2009 30/04/2011</p>
<p>CAPSIL: international support of a Common Awareness and knowledge Platform for Studying and enabling Independent Living</p> <p>Research team: School of Computer Science & Informatics, University College Dublin Contact: 353 1 716 2483 Other partners: Queen's University Belfast, Imperial College London, plus partners in US, Italy and Japan Funder: European Commission FP7 Amount: €786,618</p>	<p>The research team is a coalition of university and industrial partners that already have extensive teams developing hardware/software/knowledge solutions to promote independent living based on established clinical requirements. It has produced a draft CAPSIL Roadmap and developed a website and 'wiki' to disseminate knowledge to help policy makers in the EU, US and Japan coordinate research agendas and funding. Link to more information on FAST website</p>	<p>01/04/2008 01/04/2010</p>
<p>COGAIN: Communication by Gaze Interaction</p> <p>Research team: ACE Centre Advisory Trust Contact: 01865 759800 Other partners: Loughborough University, De Montfort University, plus 20 participants, predominantly European Funder: European Commission FP6 Amount: €2,900,000</p>	<p>The project created a forum for bringing together researchers, equipment developers, user representatives and users of eye gaze communication technology to develop standards, tools and multimedia training resources and to raise awareness and research in the area of eye gaze technology. This work is being carried forward by the Cogain Association. Link to more information on FAST website</p>	<p>01/09/2004 31/08/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>COGKNOW: Helping People with Mild Dementia Navigate Their Day</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Other partners: Partners in Spain, Sweden, Malta, Norway, France, Estonia and the Netherlands Funder: European Commission FP6 Amount: €2,700,000</p>	<p>The project has used commercially available touch screen devices (a large screen for home use and a smaller portable device for use outside the home) which are connected to a remote server which is programmed with the profile and calendar of the people with dementia and carers who use it. The COGKNOW Day Navigator has been trialled at test sites in Belfast, Sweden and the Netherlands and researchers are evaluating the usability and efficacy of the solution on feelings of autonomy and quality of life for people with dementia.</p> <p>Link to more information on FAST website</p>	<p>01/09/2006 01/08/2009</p>
<p>COGWORKS: The Cognitive Health and Wellbeing Hub</p> <p>Research team: School of Planning, Architecture and Civil Engineering, Queens University of Belfast Contact: 028 9097 4006 Other partners: Stirling University, Ulster University, Brunel University, Warwick University Funder: LLHW Amount: £50,000</p>	<p>This is a collaborative network made up of researchers from a wide range of disciplines including architecture, medicine, sociology and law. Its aim is to create a research strategy focused on what can be done at various stages throughout a person's life to ensure they remain as healthy and alert as possible. Focus group discussions have looked at what aspects of the built environment make most difference to people with dementia and their carers, the application of assistive technologies for brain training, and obstacles to the use of assistive technologies.</p> <p>Link to more information on FAST website</p>	<p>01/05/2009 28/02/2010</p>
<p>CommonWell: Common platform services for ageing well in Europe</p> <p>Research team: Tunstall Group Ltd Contact: 01977 661234 Other partners: Work Research Ltd, Milton Keynes Council, plus partners in Germany and Spain Funder: European Commission CIP Amount: €2,680,000</p>	<p>This telecare project aims to support independent living and improve quality of life for older people and those living with long-term conditions through better integration of health and social care. A total of 400 users across four locations in Europe will receive the newly integrated services for at least twelve months, and the results from the evaluation of the pilot project will be used to extend service provision and promote the wider uptake of this model of care. Milton Keynes is piloting management of chronic disease for older people with Chronic Obstructive Pulmonary Disease (COPD).</p> <p>Link to more information on FAST website</p>	<p>01/10/2008 01/10/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>CompanionAble: Integrated Cognitive Assistive & Domotic Companion Robotic Systems for Ability & Security</p> <p>Research team: School of Systems Engineering, Reading University Contact: 0118 378 8617 Other partners: Partners in Germany, France, Spain, Austria, Netherlands, Belgium Funder: European Commission FP7 Amount: €7,800,000</p>	<p>This project aims to combine robotics with ambient intelligent technologies to create an assistive environment for care givers which will enhance their efforts to provide cognitive stimulation and therapy for the people they are supporting. Researchers have demonstrated Hector, the mobile robotic companion, helping an older person find things around the house and setting up video-conferencing and cognitive stimulation sessions.</p> <p>Link to more information on FAST website</p>	<p>01/01/2008 31/12/2011</p>
<p>Companions: persistent multi-modal interfaces to the Internet</p> <p>Research team: Dept of Computer Science, University of Sheffield Contact: 0114 22 21800 Other partners: Oxford University, University of Teeside, Napier University, plus academic and industrial partners in Czech Republic, Sweden, Finland, US, Italy Funder: European Commission FP6 Amount: €12,880,000</p>	<p>This project aims to combine advanced technologies to create personal 'agents' or 'Companions'. This will be a 'presence' that communicates and develops a relationship with its user, primarily by understanding and using speech. The project has developed two trial demonstrators, the Senior Companion and the Health and Fitness Companion.</p> <p>Link to more information on FAST website</p>	<p>01/11/2006 31/10/2010</p>
<p>Creating artificial sensation by tactile sensing and innervations through nerve endings</p> <p>Research team: School of Design, Engineering and Computing, Bournemouth University Contact: 01202 524111 Other partners: Royal Bournemouth NHS Foundation Trust, Poole Hospital NHS Foundation Trust, Salisbury NHS Foundation Trust Funder: Royal Bournemouth NHS Foundation Trust, Bournemouth University Amount: £40,200</p>	<p>Researchers plan to design tactile gloves and socks which can sense and transmit touch and force information to areas of skin with normal sensation, and use this as augmented feedback to allow patients to learn to compensate for the areas of sensory loss. Researchers have identified the technology required for this application and are progressing with the basic interface testing.</p> <p>Link to more information on FAST website</p>	<p>01/10/2009 30/09/2012</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Crucible Centre Research team: Accessibility Research Group, University College London Contact: 020 7679 7009 Other partners: Funder: LLHW Amount: £3,000,000	<p>The Crucible Centre will inspire researchers across UCL to integrate the search for longevity with the aspiration to improve levels of wellbeing. The Centre will challenge discipline boundaries, combining the knowledge and experience of UCL's scientists and academics and end users to engage in research leading to a comprehensive understanding of all aspects of the ageing process from philosophy, through biology, economics, and clinical practice to design of the built environment.</p> <p>Link to more information on FAST website</p>	01/10/2009 30/09/2014
CWST: Conferences, Workshops, Seminars and Tutorials to support e-inclusion Research team: Dept of Computing Science, University of Glasgow Contact: 0141 330 8430 Other partners: Academic and commercial partners in Austria Funder: European Commission FP6 Amount: £449,995	<p>The project team organised a series of high quality scientific conferences, workshops, seminars, tutorials and meetings to support the objectives of eInclusion in relation to eAccessibility and Design for All. The consortium included experienced organisations responsible for well established events, journals and other publications which have helped to develop the field.</p> <p>Link to more information on FAST website</p>	01/07/2004 30/06/2009
Design evaluation of older people's extra care housing: development and testing of an assessment tool Research team: School of Architecture, University of Sheffield Contact: 0114 222 0399 Other partners: Personal Social Services Research Unit, University of Kent Funder: EPSRC Amount: £553,906	<p>This study aims to produce a tool that can describe the range of extra care housing, quantify the experience of the people living and working there, and identify environmental features that are associated with higher quality of life. It will build on an existing evaluation tool developed for residential care homes for Design in Caring Environments (DICE), a project funded in the EPSRC EQUAL programme.</p> <p>Link to more information on FAST website</p>	01/10/2007 30/09/2010

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Design for Ageing Well: Improving the quality of life for the ageing population using a technology enabled garment system</p> <p>Research team: Smart Clothes and Wearable Technology Research Group, University of Wales Contact: 01633 432432 Other partners: University of Ulster, University of the Arts, London, University of Salford Funder: NDA Amount: £767,264</p>	<p>The aim of this project is to investigate the application of smart textiles in a clothing system which promotes self-monitoring of well-being amongst older people. The investigators and wider team have been active in attending conferences and international academic and trade events, representing the breadth of disciplines within the project, to present papers, stage exhibitions and hold workshops to disseminate information about the project. Link to more information on FAST website</p>	<p>01/01/2009 31/12/2011</p>
<p>Developing educational software to assess if autistic children can benefit from access to open learner models and emotional feedback on learning</p> <p>Research team: Dept of Psychology, University of Bath Contact: 01225 383843 Other partners: Dept of Computer Science, University of Bath Funder: EPSRC Amount: £491,413</p>	<p>This project aims to develop and evaluate ways in which technology can be used to help children with autism to learn. Researchers will assess options in partnership with children with autism, including the use of an interface persona displaying emotions whilst providing feedback and help on the children's learning achievements. Link to more information on FAST website</p>	<p>01/07/2009 30/06/2012</p>
<p>Development of a new reusable absorbent incontinence garment (Pantegral) for women</p> <p>Research team: Continence and Skin Technology Group, University College London Contact: 020 7679 0200 Other partners: Southampton University, Leeds University, plus commercial companies Funder: NIHR HTD Amount: £266,884</p>	<p>This project aims to develop a new type of Pantegral (reusable/washable pant with integral absorbent pad) with significantly improved leakage performance that will better serve the many existing users and extend the benefits to women with heavier incontinence. Advanced prototype products are currently out for clinical evaluation. Link to more information on FAST website</p>	<p>01/06/2007 30/05/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Development of a prosthetic foot with adaptable heel heights - Shape&Roll Talon</p> <p>Research team: National Centre for Prosthetics and Orthotics, University of Strathclyde Contact: 0141 548 3433 Other partners: Elegant Design and Solutions Ltd, Northwestern University Funder: European Commission Marie Curie Programmes Amount: €80,000</p>	<p>This project aims to develop a prosthetic foot that allows for individually tailored heel heights so that the prosthesis can be easily adapted to any individual's personal shoe. Researchers have developed a first prototype, including an early release mechanism, which have passed the mechanical tests in accordance with the new ISO standards successfully. A pilot trial involving participants willing to test the prototype in the field is expected to be completed by spring 2010.</p> <p>Link to more information on FAST website</p>	<p>01/04/2007 01/04/2010</p>
<p>DfA@eInclusion: Design for All for eInclusion</p> <p>Research team: Collaborative International Research Centre, Middlesex University Contact: 020 8411 5789 Other partners: The project consortium has 23 partners, all of whom are also the national contact centres for the European Design for All eAccessibility Network (EDeAN) in their countries Funder: European Commission FP6 Amount: €1,650,000</p>	<p>The project designed and developed a web portal to support the online activities of the network members and serve both as a communication tool and as an information gateway. Members developed curriculum guidelines to support training and education at Bachelor and Masters level and to provide professional development in Design for All in ICT, and Middlesex University is piloting such a course. The project published a report "Accessibility of European Commission Websites - Analysis of current status and recommendations for improvement".</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 31/12/2009</p>
<p>DIADEM: Delivering Inclusive Access for Disabled and Elderly Members of the community</p> <p>Research team: School of Information Systems and Computing, Brunel University Contact: 01895 203397 Other partners: Sheffield City Council, plus partners in Norway, Italy Funder: European Commission FP6 Amount: €3,000,000</p>	<p>This project developed software designed to help older people who have difficulty using online forms find it easier to navigate the internet. User trials in the UK, Italy and Norway provided proof of the concept and the system has been presented at a number of public events in the UK and other parts of Europe.</p> <p>Link to more information on FAST website</p>	<p>01/09/2006 31/08/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Dicta-Sign: Sign language recognition, generation and modelling with application in deaf communication</p> <p>Research team: School of Computing Sciences, University of East Anglia Contact: 01603 592847 Other partners: University of Surrey, plus partners in Greece, France, Germany Funder: European Commission FP7 Amount: €3,920,000</p>	<p>The goal of this project is to develop the necessary technologies to make web-based interactions in sign language possible. Users sign to a webcam using a dictation style. The computer recognises the signed phrases, converts them into an internal representation of sign language, and then has an animated avatar sign them back to the users. Work is underway to locate, track and determine the pose of a signer, and to enhance timing and synchronisation features.</p> <p>Link to more information on FAST website</p>	<p>01/02/2009 31/01/2012</p>
<p>Digital interventions for dyscalculia and low numeracy</p> <p>Research team: Institute of Education, University of London Contact: 020 7612 6000 Funder: BECTA Amount: £50,000</p>	<p>The project developed and tested pilots of personalised software for learners with dyscalculia and other forms of low numeracy which can be easily customised by teachers to meet specific needs. A list of prototype games for low numeracy can be downloaded from the project website.</p> <p>Link to more information on FAST website</p>	<p>01/05/2008 30/04/2009</p>
<p>DTV4All: Digital Television for All</p> <p>Research team: School of Engineering and Design, Brunel University Contact: 01895 265814 Other partners: Red Been Media Ltd, plus partners in Germany, Denmark, Spain, Italy Funder: European Commission CIP Amount: €2,930,000</p>	<p>The aim of this project is to identify the enablers that will allow a core set of access services for second generation digital television to be offered in all EU member countries in the near future. The partners have demonstrated a speaking programme guide, the acoustic playback of teletext pages and an improved form of subtitling for digital television that will be offered in Germany with the start of the HDTV service in late 2009/2010.</p> <p>Link to more information on FAST website</p>	<p>01/07/2008 01/01/2011</p>
<p>Dynamic orthosis with virtual electrodes for the lower limb</p> <p>Research team: Centre for Health, Sport and Rehabilitation Sciences Research, University of Salford Contact: 0161 295 2275 Other partners: Sheffield Hallam University, Royal Hallamshire Hospital, Dynamic Movement Orthotics Funder: NIHR HTD Amount: £740,000</p>	<p>This project aims to combine two approaches to develop a practical lower limb rehabilitation garment for people with foot drop which offers the passive support and ease of use of orthotic garments together with the active muscular contraction produced by functional electrical stimulation. Following a series of consultations with the user-panel, a prototype stimulator design concept has been designed and manufactured. Link to more information on FAST website</p>	<p>01/05/2008 31/12/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>EAR: Eye-based Activity Recognition</p> <p>Research team: Computing Department, Lancaster University Contact: 01524 510311 Funder: EPSRC Amount: £147,233</p>	<p>This project is designed as an initial investigation of the feasibility and potential of eye-based activity recognition in order to gain insight into what eye movement reveals about everyday activity, and to develop methods for extraction of features from eye movement patterns that may be useful for activity and context recognition. The plan is to develop two practical demonstrators, looking at applications in health and lifestyle monitoring and in task assistance.</p> <p>Link to more information on FAST website</p>	<p>01/10/2009 31/03/2011</p>
<p>Easy Line+: Low cost advanced white goods for a longer independent life of elderly people</p> <p>Research team: School of Computing and Telecommunications Technology, Glyndwr University Contact: 01978 293439 Other partners: Partners in Germany, Spain Funder: European Commission FP6 Amount: €1,450,000</p>	<p>The aim of the project is to develop white goods which can support older people with or without disabilities to have a longer independent life and which will compensate for their loss of physical and/or cognitive abilities. The team has developed a working prototype using commercially available fridge/freezer, washing machine/oven and hob which are linked via communication systems, sensors and RFID tags.</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 30/06/2009</p>
<p>eCAALYX: enhanced Complete Ambient Assisted Living Experiment</p> <p>Research team: Faculty of Health and Social Work, University of Plymouth Contact: 01752 600600 Other partners: University of Limerick, plus partners in Spain, Germany, Portugal Funder: AAL Amount: €4,000,000</p>	<p>The aim of this project is to monitor the health of older people with multiple chronic conditions, both at home and on the move, in order to improve their quality of life by increasing their freedom and safety. The goal is to prevent deterioration in people's condition by providing continuous support, guidance and health education. A journal paper presenting a detailed overview of the project in the context of five other related European projects, including the original CAALYX FP6 project, has just been published.</p> <p>Link to more information on FAST website</p>	<p>01/06/2009 01/05/2012</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>ECHOES II: Improving Children's Social Interaction through Exploratory Learning in a Multimodal Environment</p> <p>Research team: Human Communication Research Centre, University of Edinburgh Contact: 0131 650 4665 Other partners: University of Sussex, University of Birmingham, University of Wales, University of Edinburgh, University of Strathclyde, University of Dundee Funder: TLRP Amount: £1,500,000</p>	<p>ECHOES II aims to develop an adventurous technology-enhanced-learning (TEL) environment in which both typically developing children and children with Asperger Syndrome (AS) at Key Stage 1 (ages 5-7) can explore and improve social interaction and collaboration skills. The first working prototype has been completed, integrating multi-touch, gaze estimation, and learning activities. Link to more information on FAST website</p>	<p>17/11/2008 16/11/2011</p>
<p>Effectiveness and feasibility of intensive short-term graded exercise programmes, using either treadmill or static exercise bicycle, for non-ambulant children and young people with cerebral palsy.</p> <p>Research team: Chailey Heritage Clinical Services Contact: 01825 722112 Funder: NIHR RfPB Amount: £64,258</p>	<p>This study will focus on children and young people with severe cerebral palsy and will randomise them to receive either standard care, or a 6 week exercise bicycle programme, or a 6 week treadmill programme. The study is fully recruited and researchers are currently analysing the data. There will be focus groups in April 2010 for the children, parents and physiotherapists to collect their experiences of the exercise programme. Link to more information on FAST website</p>	<p>01/09/2008 31/08/2010</p>
<p>Effects of reverberation on conversation in rooms</p> <p>Research team: School of Psychology, Cardiff University Contact: 029 20874523 Other partners: Arup Acoustics, Ecophon, Square One Research Funder: EPSRC Amount: £349,691</p>	<p>The project is aimed at first achieving a basic understanding of listeners' ability to cope with noise and reverberation combinations and to assess the effects of reverberation on speech understanding. The goal is then to provide architects with tools to help make appropriate design modifications, and to suggest improvements to hearing aid design. Link to more information on FAST website</p>	<p>01/02/2006 30/06/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>EFORTT: Ethical frameworks FOR Telecare Technologies</p> <p>Research team: Department of Sociology, Lancaster University Contact: 01524 593148 Other partners: Age Concern, Lancashire County Council, Chubb Ltd, Just Checking plus academic partners and user groups in Norway, Spain, Netherlands Funder: European Commission FP7 Amount: €1,020,000</p>	<p>This research examines the ethical, social and gender implications of technological interventions for older citizens in 'preventive' and 'responsive' telecare. The project has conducted research in all four countries. Participants include technology developers/manufacturers; providers and installers of telecare devices in domestic settings; professionals and volunteers working with telecare users; telecare users and their families; and retired people who may be considering future options for their own independence or care.</p> <p>Link to more information on FAST website</p>	<p>01/03/2008 28/02/2011</p>
<p>ELExDis</p> <p>Research team: School of Electronics and Computer Science, University of Southampton Contact: 023 8059 5000 Funder: JISC Amount: Not disclosed</p>	<p>Researchers have created a publicly available online searchable database of information about support for students with disabilities.</p> <p>Link to more information on FAST website</p>	<p>01/03/2007 30/09/2010</p>
<p>ENABLE: A wearable system supporting services to *enable* elderly people to live well, independently and at ease</p> <p>Research team: School of Systems Engineering, Reading University Contact: 0118 378 8617 Other partners: Docobo Ltd, Cardionetics Ltd plus partners in Austria, Czech Republic, Estonia, Spain, Greece, Belgium Funder: European Commission FP6 Amount: €2,800,000</p>	<p>The project has developed a wrist unit for older and vulnerable wearers to use in and outside the home to support and assist delivery of social and health care services through a single integrated system. The design has been registered with the European Product Design centre. Prototype units offer a range of services including falls prevention and detection, long term condition monitoring, environmental control, emergency call, medication prompting, life style and quality of life assessment, and are about to enter the field trial stage in four European member states.</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 01/06/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Enabling health, independence and wellbeing for psychiatric patients through Personalised Ambient Monitoring (PAM)</p> <p>Research team: Institute of Sound & Vibration Research, University of Southampton Contact: 023 8059 2294 Other partners: University of Nottingham, University of Stirling Funder: EPSRC Amount: £380,000</p>	<p>This project aims to provide new technology to help monitor the mental health of people with bipolar disorder. Researchers have developed a system that supports the collection of data from three types of source: sensors in the home, sensors worn by the individual and a mobile phone that collects information from individuals on activities and mood. This system is currently being tested in four homes.</p> <p>Link to more information on FAST website</p>	<p>01/10/2007 30/09/2010</p>
<p>ePAL: extending Professional Active Life</p> <p>Research team: White Loop Contact: 020 7432 0565 Other partners: Partners in Portugal, Netherlands, Spain Funder: European Commission FP7 Amount: €1,200,000</p>	<p>The aim of this project is to develop a strategic research roadmap which will promote active ageing and help people make the transition to retirement and a balanced active life. The first version recognises ICT collaboration platforms as a way to continue to include older people, by developing virtual team working. A series of consensus building workshops is now discussing and improving on this approach.</p> <p>Link to more information on FAST website</p>	<p>01/02/2008 31/01/2010</p>
<p>EU4ALL</p> <p>Research team: Human-Computer Interaction Research Group, University of York Contact: 01904 432722 Other partners: Partners in Spain, Italy, Germany, Greece, Netherlands, Germany Funder: European Commission FP6 Amount: €7,400,000</p>	<p>The project is investigating technology that accommodates the different ways in which people, including those with disabilities, interact with technology, content and services. Researchers have organised a number of seminars across Europe and the University of York team has sought responses to an online questionnaire looking at learning issues for students with disabilities.</p> <p>Link to more information on FAST website</p>	<p>01/10/2006 30/10/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Exploring how manufacturers, suppliers and retailers address the needs of older and disabled people: what are the barriers and drivers?</p> <p>Research team: i2 Media Research Contact: 020 7919 7884 Other partners: Funder: Ofcom - Advisory Committee on Older and Disabled People (ACOD) Amount: Not disclosed</p>	<p>The project's final report highlights several barriers to industry better addressing the needs of older and disabled people, including a lack of user research; a lack of knowledge of accessibility requirements; commercial issues including international design and production activities; and the lack of a compelling business case. Suggestions for improvements included senior level championship of accessibility issues, more user research; the use of financial incentives; and the requirement to report details of accessibility achievement annually to an independent body.</p> <p>Link to more information on FAST website</p>	<p>01/04/2008 01/06/2009</p>
<p>Exploring Human Hand Capabilities into Multifingered Robot Manipulation</p> <p>Research team: School of Creative Technologies, University of Portsmouth Contact: 023 9284 5461 Other partners: Project partners are Bristol Robotics Laboratory; Shanghai Jiao Tong University and Tokyo Metropolitan University Funder: EPSRC Amount: £295,150</p>	<p>This project will investigate artificial intelligence (AI) methodologies and practical solutions which will allow robotic hands to automatically adapt to human environments and thus to enable them to autonomously perform useful manipulation tasks involved in daily living, potentially for health care and rehabilitation applications.</p> <p>Link to more information on FAST website</p>	<p>28/08/2009 27/08/2012</p>
<p>Exploring the impact and potential benefits of telecare for carers in Scotland</p> <p>Research team: Centre for International Research on Care, Labour and Equalities, University of Leeds Contact: 0113 343 4418 Funder: JIT, Scottish Government Health Directorate, Carers Scotland Amount: Not disclosed</p>	<p>All carers in the study identified a wide range of positive effects of telecare on their caring role and circumstances. Research also showed the need to raise awareness amongst carers and professionals about the full range of telecare options, along with the requirement to make charges for telecare more equitable and consistent throughout Scotland. The study concluded that more investment is still needed to establish telecare as a mainstream component of the health and social care system in Scotland.</p> <p>Link to more information on FAST website</p>	<p>01/01/2009 31/12/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Extracare: meeting the needs of fit or frail older people?</p> <p>Research team: School of Human Sciences, Swansea University Contact: 01792 295318 Funder: WORD Amount: £231,560</p>	<p>This project is exploring some of the claims typically made about 'extracare' housing. The quantitative section of the project has been completed and initial analysis has been conducted. The qualitative data collection has been completed in South Wales and the North Wales collection is well underway, and full analysis will begin in spring 2010.</p> <p>link to more information on FAST website</p>	<p>01/03/2008 01/02/2010</p>
<p>Facilitating Wider Uptake of Inclusive Design</p> <p>Research team: School of Engineering and Design, Brunel University Contact: 01895 265814 Other partners: University of Cambridge, Alloy Total Product Design, Rood Industrial Design Ltd, Easy Living Home, Wright Design, Pearson Matthews Design Partnership, Ricability, Granta Design Ltd, Factory Design, Sprout Design Funder: EPSRC Amount: £244,067</p>	<p>The aim of this project is to explore the unmet needs of experienced designers and to develop a prototype Inclusive Design Support Tool (IDST) which integrates anthropometric data in a novel way. Researchers have prototyped a number of tools and organised two evaluation workshops.</p> <p>Link to more information on FAST website</p>	<p>31/03/2008 30/03/2011</p>
<p>Future bathroom: A study of user-centred design principles affecting usability, safety and satisfaction in bathrooms for people living with disabilities</p> <p>Research team: Art and Design Research Centre, Sheffield Hallam University Contact: 0114 225 2686 Other partners: Sheffield Elders, Sheffield 50+, University of the Third Age Funder: EPSRC Amount: £409,952</p>	<p>This project aims to improve the quality and design of bathroom furniture for older people with the goal of producing products which all bathroom users find acceptable as well as meeting the specific needs of older and disabled people. This work was included in the 2009 EPSRC Pioneers exhibition at Olympia, where it was praised for its innovative research methodology and its focus on the training of older people as community researchers.</p> <p>Link to more information on FAST website</p>	<p>01/04/2008 31/03/2011</p>
<p>Gait Trainer</p> <p>Research team: Bath Institute of Medical Engineering Ltd Contact: 01225 824103 Other partners: European Technology for Business Ltd, The London Knee Clinic Funder: ALIP Amount: £426,741</p>	<p>Older people, disabled people and people who are recovering from an injury often have unsteady gait which can put them at a higher risk for falls and accidents. Researchers have built a system using sensors which can determine gait characteristics which is being trialled in falls prevention.</p> <p>Link to more information on FAST website</p>	<p>01/09/2008 01/08/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>HAPPY AGEING: a Home Based Approach to the Years of AGEING</p> <p>Research team: Global Security Intelligence Limited Contact: 0207 993 4431 Other partners: Partners in Italy, Spain, Hungary, Netherlands Funder: AAL, TSB Amount: €1,674,695</p>	<p>The aim of this project is to develop a user friendly device which can support older people in performing some of their daily activities. UK partner GSI has completed a review of the market for assistive technologies for older people, examining both supply and demand side issues driving innovation and adoption across Europe.</p> <p>Link to more information on FAST website</p>	<p>01/04/2009 30/03/2011</p>
<p>HAPTIMAP: Haptic, Audio and Visual Interfaces for Maps and Location Based Services</p> <p>Research team: School of Electronics, Electrical Engineering and Computer Science, Queen's University Belfast Contact: 028 9097 4669 Other partners: University of Glasgow, BMT Group, plus academic and commercial partners in Sweden, Spain, Germany, France, Finland, Netherlands Funder: European Commission FP7 Amount: €7,800,000</p>	<p>The aim of this project is to embed accessibility into digital mainstream maps and mobile location based services by including non-visual interaction methods like touch and hearing to access information. Researchers have carried out initial user studies, started design work, started building the toolkit architecture, and published the Hapti Map user study guidelines. Hapti Map was disseminated widely in 2009, for instance at the European Ministerial e-Inclusion Conference. There will be a workshop at the 2010 Pervasive conference.</p> <p>Link to more information on FAST website</p>	<p>01/09/2008 30/08/2012</p>
<p>Health hub: user-centred design, development and integration with the built environment</p> <p>Research team: Building Research Establishment Contact: 01923 664000 Other partners: FAST, Hereward College, Wates Living Space, Microsoft; NXP Semiconductors UK, Medilink West Midlands i-Health, Royal Institute of British Architects, Willmott Dixon Construction Ltd, Cisco Systems, Sasie Ltd, Tunstall, Centihealth Funder: ALIP Amount: £1,646,127</p>	<p>The aim of this project is to develop a framework to advance the provision of assisting living facilities within the UK to the point where barriers of scale have been removed, and where user-centred design, legacy planning and future building needs have all been identified.</p> <p>Link to more information on FAST website</p>	<p>01/09/2008 31/12/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Hearing dummy Research team: Dept of Psychology, University of Essex Contact: 01206 873802 Funder: EPSRC Amount: £357,790	This project will develop a computer model of hearing to represent the particular deficit of an individual patient. The model (or 'hearing dummy') can then be used to evaluate objectively the potential benefit of different hearing aid designs and to indicate a 'best-buy' prescription. Link to more information on FAST website	17/09/2007 16/09/2010
HEARTCYCLE: Compliance and effectiveness in HF and CHD closed-loop management Research team: Postgraduate Medical Institute, University of Hull Contact: 01482 346311 Other partners: Partners in research, academia, medicine and industry in Greece, Finland, Switzerland, Germany, Spain, Netherlands, Italy Funder: European Commission FP7 Amount: €2,199,000	The HeartCycle consortium will work to improve the quality of care available for heart patients by developing systems for monitoring their condition at home and involving them in the daily management of their disease. Decision support algorithms have been developed and clinical pathways. These are now being implemented in a system that should be deployed in 2011. Link to more information on FAST website	01/03/2008 29/02/2012
HERMES: Cognitive Care and Guidance for Active Ageing Research team: Digital Media & Systems Research Institute, University of Bradford Contact: 01274 23369 Other partners: Partners in Austria, Spain, Israel, Greece, Italy Funder: European Commission FP7 Amount: €2,800,000	The aim of this project is to develop an integrated system providing cognitive support and training for older people. The prototype system includes data capture hardware in the form of multiple cameras for 3D information analysis, microphone arrays for reliable speech capture at distance, as well as user interfaces and intelligent processing tools allowing users to search and explore captured data. Development of tools for the second integrated prototype system is already underway. Link to more information on FAST website	01/01/2008 31/12/2010
Home-based training for patients with visual field deficits Research team: Cognitive Neuroscience Research Unit, University of Durham Contact: 0191 334 0013 Funder: NIHR RfPB Amount: £194,659	This project aims to develop a training programme for people who experience sight loss following a stroke. This involves computer-based training tasks which are user friendly, will adapt to each person's performance, and will provide regular and easy-to-understand feedback so they can be used in the person's own home. The training software and assessment procedures have been developed and ten patients have so far completed the training. Link to more information on FAST website	01/11/2008 30/04/2011

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Horizon: Digital Economy Hub at the University of Nottingham</p> <p>Research team: School of Computer Science and Information Technology, University of Nottingham Contact: 0115 951 4254 Other partners: Commercial partners from the broadcasting, advertising and entertainment industry; telecoms suppliers; representations from automotive industry Funder: EPSRC Amount: £13,102,938</p>	<p>Horizon will conduct a five-year programme of research into the key scientific challenges involved in the widespread adoption of ubiquitous computing and provide a focal point for international, national and regional research in this area. Researchers will collaborate with over 30 users from different sectors of the digital economy with an initial focus on the creative industries and transportation sectors.</p> <p>Link to more information on FAST website</p>	<p>01/10/2009 30/09/2014</p>
<p>How was School Today? in the Wild</p> <p>Research team: School of Computing, University of Dundee Contact: 01382 385597 Other partners: Tayside University Hospital Trust, Communication Matters Funder: EPSRC Amount: £286,256</p>	<p>Researchers will be building on work from a feasibility study in which they constructed a proof-of-concept system for helping children with communication disabilities to construct and tell stories about their day at school. This project will address several issues raised in the feasibility study: the system needs to be able to support children with very diverse capabilities and impairments; it needs to be tailored to fit into the school environment and curriculum; and it needs to be attractive to teachers as well as students. It also needs to be able to run 'in the wild' without the need for the constant technical support from the research team.</p> <p>Link to more information on FAST website</p>	<p>01/01/2010 30/06/2011</p>
<p>ICT & Ageing: Users, Markets and Technologies</p> <p>Research team: Work Research Centre Ltd Contact: 042 353 14927 Other partners: Partners in Germany, Austria Funder: European Commission FP7 Amount: Not disclosed</p>	<p>The main aim of the study is to identify the market barriers which currently hinder uptake of ICT for independent living in Europe. The project has published a report on the ethical issues that arise when considering the application of ICTs to support independent living and home care.</p> <p>Link to more information on FAST website</p>	<p>01/01/2008 31/12/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
i-DEAL: Intelligent Design Engine for Assisted Living Research team: Medilink West Midlands Contact: 0121 452 5630 Other partners: Coventry University, University of Ulster, Icue Care, Giga Systems Ltd, Safe Surgery Systems Ltd, Health Exchange CIC Ltd., Hereward College, Technik 2 Funder: ALIP, EPSRC Amount: £1,500,000	This project focuses on involving users, carers and health professionals throughout the design and development cycle of different assisted living technology-based products. This novel approach aims to map technology requirements against end user needs and develop user performance specifications for each product or concept put through the evaluation cycle. Link to more information on FAST website	01/10/2008 30/09/2010
IDGO TOO: Inclusive Design for Getting Outdoors 2 Research team: Research Institute for the Built and Human Environment, University of Salford Contact: 0161 295 4600 Other partners: Oxford Brookes University, Edinburgh College of Art, plus industrial partners and non governmental agencies Funder: EPSRC Amount: £900,000	IDGO TOO focuses on particular policies and strategies in areas such as sustainability, urban renaissance, integrated communities and inclusive environments. The project will investigate how well outdoor environments built in line with these policies contribute to older people's health and well-being. Researchers have conducted a range of independent measures and audits of people's outdoor environments on sites around Britain. Link to more information on FAST website	02/01/2007 01/04/2011
INCLUDIS: designing INCLUusive proDucts with Image Schemas Research team: Dept of Engineering, University of Cambridge Contact: 01223 332600 Funder: European Commission FP7 Amount: €86,784	The aim of this project is to develop and test a framework model of cognitive abilities that will help practitioners design more inclusive products. Link to more information on FAST website	01/07/2009 30/06/2010
Inclusion through the Digital Economy Research team: School of Computing Science, Newcastle University Contact: 0191 2227972 Other partners: University of Dundee Funder: EPSRC Amount: £12,632,447	This user-centred and user-driven programme of research will address key research questions, yielding innovations, across technology, social science and business. Devices under development include a navigation system for use by older people in supermarkets to locate commonly purchased items; digital jewellery; and a telecare system for rural residents that monitors heartbeat, temperature and breathing rates and sends the information wirelessly to a clinician. Link to more information on FAST website	01/10/2009 30/09/2014

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Innovations in Intelligent Assistive Robotics Research team: School of Computing and Intelligent Systems, University of Ulster Contact: 028 7137 5616 Other partners: Indian Institute of Technology Kanpur Funder: UK-India Education and Research Initiative Amount: £145,000	The three areas of research are a brain-computer interface (BCI) that allows a disabled person to control a smart wheelchair and robotic manipulator combination by thinking; a visual tracking system for operating the wheelchair as an automated guided vehicle (AGV) to provide mobility; and a new technology architecture for a robot manipulator which will undertake actions desired by its disabled user. Link to more information on FAST website	01/04/2008 31/03/2011
Instrumented Forearm Crutches for Patient Rehabilitation Research team: School of Electronics and Computer Science, University of Southampton Contact: 023 8059 5000 Other partners: Southampton General Hospital Funder: EPSRC Amount: £16,000	Researchers have developed a crutch which includes instruments to monitor the force being applied through its axis in order to obtain an objective estimate of how much weight is being put on the leg over the full period of recovery. This is important for people who have to limit weight bearing during rehabilitation. Further studies will investigate the use of two instrumented crutches for better estimation of weight-bearing, along with improvements to the way data is recorded and fed back to users. Link to more information on FAST website	01/06/2006 30/11/2009
Integrating mobility vehicles and devices with smart homes Research team: Department of Computing and Informatics, University of Lincoln Contact: 0116 207 8968 Other partners: Funder: Transport iNet Amount: £40,000	The aim of this project is to develop an electronic device that fits neatly into a standard mobility scooter, and which can monitor the user's location and well-being. The device will connect to the person's care provider using mobile phone technology and a tracker device will be used to locate users. Once people return home, the device will then connect the mobility scooter into the user's home telecare network. Link to more information on FAST website	01/12/2009 31/12/2012

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Intelligent Pre- and Post-Processing Algorithms for Autonomous Multiclass Brain-Computer Interfaces</p> <p>Research team: School of Computing and Intelligent Systems, University of Ulster Contact: 028 7137 5616 Other partners: Funder: EPSRC Amount: £101,963</p>	<p>Brain-Computer Interface (BCI)-based assistive technology for alternative communication, control and mobility is currently being trialled through a strategic partnership with the National Rehabilitation Hospital of Ireland, which has extensive experience in working with spinal cord injury, stroke and head trauma patients. The research underway is at a stage where extensive clinical trials are required to validate and emphasise the importance of the R&D to date and to develop innovative tools and products for BCI related applications.</p> <p>Link to more information on FAST website</p>	<p>01/10/2009 30/09/2011</p>
<p>IROMEC: Interactive RObotic social MEdiators as Companions</p> <p>Research team: Adaptive Systems Research Group, University of Hertfordshire Contact: 01707 286083 Other partners: Partners in Austria, France, Italy, Netherlands, Spain Funder: European Commission FP6 Amount: €2,140,000</p>	<p>This highly interdisciplinary initiative combined robotics, ICT, cognitive sciences, developmental psychology, pedagogy, and human-machine interface in order to research how robotic toys can be tailored to become social mediators, empowering children with disabilities to play and discover the range of play styles from solitary to social and cooperative play. The project's results include guidelines for the development of appropriate robot and interaction systems, the definition of exemplary play scenarios and their mapping to particular objectives and finally guidelines for the appropriate use in education and therapy. Researchers have also produced a small series of dedicated IROMEC robots which will be evaluated in several centres during 2010.</p> <p>Link to more information on FAST website</p>	<p>01/11/2006 31/10/2009</p>
<p>iStretch: Intelligent STroke Rehabilitation Exercise TeCHnology</p> <p>Research team: School of Computing, University of Dundee Contact: 01382 385597 Other partners: University of Toronto, National Institute of Astrophysics, Optics and Electronics, Mexico Funder: European Union-Mexico Science and Technology Science International Cooperation Fund; Canadian Institutes of Health Research Amount: £282,880</p>	<p>The project is designing an intelligent haptic robotic system able to conduct the early stages of physiotherapy for upper-limb stroke patients. The device simulates traditional 'reaching task' therapy, and is able to adjust automatically to meet the specific abilities of different patients, as well as increasing the difficulty of the exercise as people's performance improves. Feedback is provided to both the patient and therapist. The first robotic prototype has been completed and tested.</p> <p>Link to more information on FAST website</p>	<p>01/01/2009 31/12/2012</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
I~design 3: extending active living through more effective inclusive design Research team: Dept of Engineering, University of Cambridge Contact: 01223 332600 Other partners: Loughborough University, Helen Hamlyn Centre Funder: EPSRC Amount: £280,332	This project is seeking to encourage industry and government to take on board the principles and practice of inclusive design. Researchers have developed a range of practical tools and resources for designers to motivate and equip them to put inclusive design into practice. These include the Inclusive Design Toolkit; impairment simulation tools; and an exclusion audit application which assesses the inclusivity of a product or service. Link to more information on FAST website	01/10/2006 31/03/2011
KT-EQUAL: Putting ageing and disability research into practice Research team: School of Construction Management & Engineering, Sheffield Hallam University Contact: 0114 225 5854 Other partners: University of Cambridge, University of Bath, Edinburgh College of Art, University of Salford, University of Loughborough, University of Reading Funder: EPSRC Amount: £1,873,016	The focus of this consortium is to develop the evidence and knowledge to inform solutions to enable older people to maintain their independence, to continue to be active in the workplace for as long as they choose, and to benefit from emerging technologies. KT EQUAL brings together experts in engineering, construction, architecture, participatory and inclusive design, rehabilitation, psychology, change management and public engagement to work collaboratively with each other and with older people to promote knowledge transfer in innovative and effective ways. Link to more information on FAST website	01/06/2009 31/01/2013
Landscapes of Cross-Generational Engagement Research team: Art and Design Research Centre, Sheffield Hallam University Contact: 0114 225 2686 Other partners: Goldsmith's College London, University of York Funder: ESRC, NDA Amount: £403,662	This project is investigating how interactive technologies can promote older people's engagement with their physical and social environments and encourage new forms of interaction with younger people. Researchers are working with two communities of older people, the residents and staff of a residential care home and the cloistered nuns in a Roman Catholic Abbey. The design for the convent is called the Prayer Companion and provides news feeds and other web-based items to support intercessory prayers. At the residential home researchers are working on a digital frame to support social activities around internet-based media. Link to more information on FAST website	01/01/2008 30/06/2010

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>LIFE (Long-term involvement in fitness enablement) study</p> <p>Research team: School of Life Sciences, Oxford Brookes University Contact: 01865 483600 Funder: Department of Health PRP Amount: £243,889</p>	<p>This project involved the use of sophisticated technology to measure and monitor the mobility of people with different neurological conditions. It led to the development of the Physical Activity Support System (PASS), a handbook and the involvement of fitness trainers and physiotherapists. Preliminary findings indicate that participants adhered well to the programme, but that individuals did not necessarily increase their overall activity levels.</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 01/06/2009</p>
<p>LIREC: Living with Robots and intErative Companions</p> <p>Research team: Dept of Computer Science, Queen Mary University of London Contact: 020 7882 5200 Other partners: Heriot-Watt University, University of Hertfordshire, plus academic, research institute and commercial partners in Belgium, Germany, Hungary, Poland, Sweden, Portugal Funder: European Commission FP7 Amount: €8,200,000</p>	<p>The aim of this project is to establish the theory behind the use of artificial long term companions (that is, the memory, emotions, cognition, communication and learning capabilities that are required). Work at the University of Hertfordshire has assessed the privacy and security issues surrounding storage of personal information by robots.</p> <p>Link to more information on FAST website</p>	<p>01/03/2008 31/08/2012</p>
<p>Living rooms 2: Cross cultural investigation of how design can support independence in later life</p> <p>Research team: Art and Design Research Centre, Sheffield Hallam University Contact: 0114 225 2686 Funder: British Council Amount: £32,000</p>	<p>The aim of this project is to investigate the design of homes in both Asia and the UK that increase older people's independence and quality of life, and that can support changing healthcare needs as people age, but which also reflect differing tastes and lifestyles. The project team is holding a series of workshops. Design ideas emerging from the dialogue will be used as tools and prompts to gain further insights.</p> <p>Link to more information on FAST website</p>	<p>01/06/2008 01/06/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
LLM: Long Lasting Memories Research team: Global Security Intelligence Limited Contact: 0207 993 4431 Other partners: Milton Keynes Council, plus partners in Greece, Germany, Austria, Spain, France Funder: TSB Collaborative Research and Development, EU ICT Policy Support Programme Amount: €4,720,000	The aim of this project is to combine environment and health monitoring systems, state-of-the-art cognitive exercises and physical activity in an integrated technology platform. The UK pilot sites are in Milton Keynes in day centres for older people. The UK partner GSI is developing the pilot methodologies. Link to more information on FAST website	01/06/2009 30/11/2011
Maavis Knowledge Transfer project Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Other partners: Full Measure Funder: University of Sheffield Knowledge Transfer Projects Fund Amount: £10,000	Maavis (Managed Access to Audio, Visual and Information Services) is specialist software which makes it easier for someone with limited mobility or dexterity to use a computer. This project is adding specific features to the software to enhance its suitability for use in adult education in the community with people with learning disabilities. Link to more information on FAST website	01/02/2010 31/07/2010
Maavis@school Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Other partners: Full Measure Funder: Barnsley Health and Social Care Research & Development Alliance Amount: £7,000	The project's goal is to offer children with severe physical disabilities, with or without a learning disability, a means to make better use of IT. This is primarily being achieved through adding scanning functionality to the Maavis software so it can be used by children who use switch scanning (or pointing devices). The software is being trialled in three schools. Link to more information on FAST website	01/06/2010 31/08/2010
MAPP-MAL: Multidisciplinary Approach to a Prototype for Prevention of MALnutrition in older people: products, places, people and procedures Research team: Institute for Ageing and Health, Newcastle University Contact: 0191 222 6707 Other partners: University of Reading, Glasgow School of Art, Loughborough University, plus user groups and professional bodies Funder: NDA Amount: £1,086,000	The aim of this project is to rethink and test new ways that food can be produced and delivered to older patients using a 'joined-up' approach that considers all stages of the food journey, from production to consumption. Audits of current practice and interviews with older people, carers and hospital staff have been conducted and researchers are considering options such as assistive technology to support feeding regimes. Link to more information on FAST website	01/10/2008 30/09/2011

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>MATCH: Mobilising Advanced Technologies for Care at Home</p> <p>Research team: Dept of Computing Science and Mathematics, University of Stirling Contact: 01786 467423 Other partners: University of Glasgow, University of Dundee, University of Edinburgh, plus commercial, local government, non governmental agencies Funder: Scottish Funding Council Amount: £1,274,324</p>	<p>The goal of MATCH is to develop a research base for advanced technologies in support of social and health care at home. The project has run workshops, a summer school and a number of presentations. Researchers have developed a number of initiatives including software 'companions' for older people and an ultra-mobile activity monitor for the home. MATCH is moving into a new phase where the project's aims are to enable further research and development by helping its members gain new research funding from funding bodies or companies, and to encourage the use of MATCH technologies by companies and user groups.</p> <p>Link to more information on FAST website</p>	<p>01/05/2005 31/10/2012</p>
<p>MATCH: Renewal of IMRC Award</p> <p>Research team: School of Information Systems and Computing, Brunel University Contact: 01895 203397 Other partners: University of Birmingham, University of Ulster, University of Nottingham Funder: EPSRC Amount: £6,941,929</p>	<p>This is the second stage of a major project looking at the economic evaluation of healthcare technologies and its impact in decision-making by companies, governments and procurement agencies. MATCH has already shown that the consortium can provide useful tools for, and attract significant levels of funding from industry, and this work will continue.</p> <p>Link to more information on FAST website</p>	<p>03/11/2008 02/11/2013</p>
<p>MATCH-Plus</p> <p>Research team: School of Information Systems and Computing, Brunel University Contact: 01895 203397 Other partners: University of Birmingham, University of Ulster, University of Nottingham, King's College London Funder: EPSRC Amount: £1,764,282</p>	<p>This project addresses the specific need of including more users in the evaluation of healthcare technologies. In addition, project members will make MATCH methods available to the communities that are bidding for government-funded research programmes, so there will be a set of conferences that will train the academic and other bid communities, in the use of economic assessment and other evaluation techniques in relation to medical devices.</p> <p>Link to more information on FAST website</p>	<p>03/11/2008 02/11/2013</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>MonAMI: mainstreaming on AMbient Intelligence</p> <p>Research team: Personal Social Services Research Unit, London School of Economics Contact: 020 7405 7686 Other partners: Open Hub Ltd, plus academic and commercial partners in France, Germany, Spain, Sweden, Belgium Funder: European Commission FP6 Amount: €8,699,478</p>	<p>The MonAMI project will demonstrate that accessible, useful services for older persons and persons with disabilities living at home can be delivered in mainstream systems and platforms. This will be done in close cooperation with users and by involving key mainstream suppliers throughout the whole process. Researchers have attended a number of conferences and UK partner LSE held a seminar at a specialist congress in Paris on the subject "Why older people are e-excluded".</p> <p>Link to more information on FAST website</p>	<p>01/09/2006 01/09/2010</p>
<p>Monitoring/analysis of patients with motion disorders</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Other partners: Charles University, Prague Funder: European Commission Marie Curie Programmes Amount: €40,000</p>	<p>This project is developing a novel hybrid system for monitoring and interpreting bodily movements based on visual and mechanical motion sensing, using a network of wireless cameras positioned within the home and accelerometers attached to the body.</p> <p>Link to more information on FAST website</p>	<p>01/10/2007 01/07/2010</p>
<p>Motivating Mobility: Interactive Systems to promote Physical Activity and Leisure for people with limited mobility</p> <p>Research team: School of Computer Science and Information Technology, University of Nottingham Contact: 0115 951 4254 Other partners: University of Southampton, University of Dundee, Sheffield Hallam University, University of Sussex, University of Oxford Funder: EPSRC Amount: £493,359</p>	<p>This project aims to motivate people to extend or maintain their activities using a combination of mobile technology and interactive personalised games, presented in familiar ways. Researchers are developing and assessing a monitoring system to encourage people who have had a stroke to undertake rehabilitation exercises. Current work is looking at the use of on-body sensors and is trialling technology such as webcams.</p> <p>Link to more information on FAST website</p>	<p>01/07/2007 30/06/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Motorised walking frame for stroke rehabilitation Research team: Centre for Health, Sport and Rehabilitation Sciences Research, University of Salford Contact: 0161 295 2275 Other partners: Butters Innovation, Medilink North West, PDS Engineering Funder: NIHR i4i Amount: £331,000	The aim of this project is to develop a motorised walking frame which will support the legs of people who have had a stroke and enable them to learn to walk again. The frame will allow people who cannot take their own weight to practice stepping and walking much earlier in their rehabilitation. Link to more information on FAST website	01/04/2009 31/03/2011
MPVS: Mobile Phone-based Video Streaming system in providing home-support for patients with early Alzheimer's Disease Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Other partners: Funder: NIHPSS R&D Amount: £422,858	This project addresses the memory problems which are the most common cognitive deficits in Alzheimer's disease by developing a mobile phone-based system which provides a wide range of memory cues. A key objective of the research is to provide an opportunity for a 'virtual carer' to be a regular presence in the home, as a means of improving the independence and quality of life for people with dementia. A prototype device is under development. Link to more information on FAST website	01/12/2007 30/11/2010
MultiMemoHome: Multimodal Reminders Within the Home Research team: Dept of Computing Science, University of Glasgow Contact: 0141 330 8430 Other partners: Queen Margaret University, University of Edinburgh Funder: EPSRC Amount: £775,085	This project aims to develop user-friendly and effective reminder systems in order to improve home care and support for people who require regular care or assistance at home, with a special emphasis on supporting people with sensory impairments. Work so far has concentrated on a web survey and focus groups with older people to determine requirements and design issues. Link to more information on FAST website	01/09/2009 28/02/2013
MUSICC - Multi-sensory information on climate change Research team: Royal National College for the Blind Contact: 01432 265725 Funder: EU Leonardo da Vinci Amount: €370,966	This project is applying audio haptics coupled with talking tactile technology to the science involved in global warming and climate change with the aim of giving people with visual, hearing or cognitive impairment truthful scientific information in order to allow them to participate in the global debates on global warming and climate change. Link to more information on FAST website	01/11/2008 01/10/2010

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
MyHealth@Age Research team: Faculty of Computing and Engineering - University of Ulster Contact: 028 9036 6305 Other partners: Academic, commercial and local government partners in Sweden, Norway Funder: European Commission - Northern Periphery Programme Amount: €1,098,296	The aim of this project is to develop products and services which make it possible for older people to feel safer and to lead a more active and healthy life. Products and services have been delivered and field trials have started in all regions. Link to more information on FAST website	01/01/2008 01/12/2010
NANA: Novel Assessment of Nutrition and Ageing Research team: School of Psychology, University of St Andrews Contact: 01334 462152 Other partners: Bath Institute of Medical Engineering, University of Reading, University of Sheffield, Sanctuary Care Funder: NDA Amount: £847,016	The aim of this project is to develop an assessment toolkit which uses data collected in an older person's home and analyses this in order to establish likely causes of malnutrition. The package will monitor events over time so that changes and rates of decline or improvement can be detected. Link to more information on FAST website	01/01/2009 31/12/2011
Narrative and children using aided communication Research team: School of Allied Health Professions, University of East Anglia Contact: 01603 456161 Other partners: Funder: University of East Anglia Amount: £39,000	The researcher is analysing the use of narrative language between children using augmentative and alternative communication (AAC) and their teaching staff, and will observe the key features of the communication roles taken by the teacher and the AAC-using pupil when developing both personal and fictional narrative. Link to more information on FAST website	01/10/2009 01/12/2011
New metrics for exploring the relationship between mobility and successful ageing Research team: School of Psychology & Sport Sciences, University of Northumbria Contact: 0191 227 3571 Funder: NDA Amount: £241,000	This project used movement and location-aware systems to track older people's activities both indoors and outdoors via wearable 'locate' devices. This data is then combined with information from a device that logs activity associated with bodily movements in order to gain a fuller understanding of mobility. Preliminary results identified predictors for decline in mobility, and also found that users were reluctant to accept location monitoring. Link to more information on FAST website	01/01/2008 01/01/2010

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>No speech but lots to say!</p> <p>Research team: ACE Centre North Contact: 0161 684 2333 Funder: Department of Health Amount: £40,526</p>	<p>The ACE Centre North is working with adults with neurological conditions who are unable to speak, together with their families, carers and voluntary sector staff to plan, trial and evaluate different systems and strategies to promote the meaningful involvement of adults, aged 16 or over, with little or no speech in planning and developing their local services.</p> <p>Link to more information on FAST website</p>	<p>01/08/2007 01/08/2010</p>
<p>NOCTURNAL: Night Optimised Care Technology for UserRs Needing Assisted Lifestyles</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Other partners: Fold Housing Association, Northern Health and Social Care Trust Funder: EPSRC, ALIP Amount: £112,721</p>	<p>People with dementia often tend to get out of bed a lot of times during the night, and may become confused or disoriented as a result. Technology may also be able to help reduce anxiety and improve quality of life in such situations. The aim of this project is to provide new technological offerings which offer guidance and support to people at the early stages of dementia during the hours of darkness.</p> <p>Link to more information on FAST website</p>	<p>01/09/2008 31/08/2011</p>
<p>OASIS: Open architecture for Accessible Services Integration and Standardisation</p> <p>Research team: School of Civil Engineering and Geosciences, University of Newcastle Contact: 0191 222 6323 Other partners: OASIS Consortium is composed of 33 Partners from 11 countries and includes large industrial corporations, SMEs, universities, research centres, non-profit organizations, public organizations and healthcare centre Funder: European Commission FP7 Amount: €12,410,000</p>	<p>OASIS aims to utilise ICT and other key technologies in order to provide holistic services to older people to support their physical and psychological independence, stimulate their social or psychological engagement and foster their emotional well being. The integrated systems and services are currently being tested in four sites Europe-wide (UK, Germany, Italy and a combined eastern site in Greece, Romania and Bulgaria).</p> <p>link to more information on FAST website</p>	<p>01/01/2008 31/12/2011</p>
<p>Objective-based Iterative Learning Control for Robotics and Rehabilitation</p> <p>Research team: School of Electronics and Computer Science, University of Southampton Contact: 023 8059 5000 Funder: EPSRC Amount: £237,845</p>	<p>The project is developing and significantly enhancing the use of electrical stimulation as a way of helping people who have had a stroke regain arm function. Theoretical derivation and experimental evaluation of the control framework is underway and yielding promising results. Plans for small studies involving stroke participants have commenced.</p> <p>Link to more information on FAST website</p>	<p>01/03/2000 28/02/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>OPUS: Older People's Use of Unfamiliar Space</p> <p>Research team: School of Human Sciences, Swansea University Contact: 01792 295318 Other partners: Kingston University, Anglia Ruskin University, Middlesex University, Welsh Assembly Government, Colchester Borough Council, Castleoak Care Partnerships, Age Concern Cymru, Swansea Network 50+, Swansea U3A, Clinical Research Collaboration Cymru Funder: NDA Amount: £300,000</p>	<p>Researchers worked with a group of older people who were shown routes around an unfamiliar area using a virtual reality simulator and also asked to navigate around an actual town. A prototype for GIS/GPS navigation is under development, taking into consideration analyses gathered from these activities.</p> <p>Link to more information on FAST website</p>	<p>03/02/2008 30/08/2009</p>
<p>Oldes: Older People's e-services at home</p> <p>Research team: Centre for Knowledge, Innovation, Technology and Enterprise, Newcastle University Contact: 0191 243 0800 Other partners: Partners in Italy, Czech Republic, Germany, Canada Funder: European Commission FP6 Amount: €250,000</p>	<p>The aim of the project is to plan and implement an innovative technological platform which is both low cost and easy use, and which can provide a wide range of services to older people in their own homes. The Newcastle University team's involvement has been focused on two areas: the development of an initial set of service and user requirements, and the development of a range of tools and techniques to ensure the application of user-centred design principles</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 31/08/2010</p>
<p>OPT-in - Older People and Technological innovations</p> <p>Research team: Faculty of Health & Social Care, Open University Contact: 01908 653420 Other partners: University of Stirling, partners in Slovenia, Germany, Netherlands Funder: LLP Amount: €25,000</p>	<p>The aim of this study is to investigate how older people deal with new innovations and technology in their everyday lives, and how this could be improved. The Open University is working with Age Concern Milton Keynes to maximise engagement with older people</p> <p>Link to more information on FAST website</p>	<p>01/08/2009 31/07/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Outcomes for Children with Complex Needs assessed for Communication Aids: A pilot study</p> <p>Research team: Division of Psychology and Language Sciences, University College London Contact: 020 7679 2000 Other partners: ACE Centre Funder: BECTA Amount: £5,732</p>	<p>This project looked at the relationships between the multiple and varied factors that may foster or inhibit the take-up of communication aids and children's participation. The pilot of a questionnaire for parents and children and analysis of results has been completed successfully and researchers are planning a second stage.</p> <p>Link to more information on FAST website</p>	<p>01/01/2009 30/11/2009</p>
<p>PAL: Personal and social communication services for lifestyle monitoring</p> <p>Research team: Cambridge University Computer Lab Contact: 01223 763500 Other partners: University of Essex, BT, Ericsson Funder: TSB, EPSRC Amount: £804,252</p>	<p>Current assistive living scenarios, where technology is used to support people to live independently, mostly only work in certain environments and are not able to provide a continuous support to users. This project is investigating what a future system able to provide a seamless and continuous experience in assistive living scenarios should look like, and what current and future solutions are required.</p> <p>Link to more information on FAST website</p>	<p>01/07/2009 30/06/2012</p>
<p>PD REHAB: Randomised controlled trial to assess the clinical- and cost-effectiveness of physiotherapy and occupational therapy in Parkinson's disease</p> <p>Research team: Dept of Clinical Neuroscience, University of Birmingham Contact: 0121 414 3943 Other partners: Funder: NIHR HTA Amount: £1,354,031</p>	<p>This is a large, multicentre, randomised controlled trial of physiotherapy and occupational therapy versus no therapy in 750 people with Parkinson's disease from around 40 care homes and neurology units across the UK. It will evaluate the clinical and cost effectiveness of therapy interventions, including assistive technology, in order to improve people's quality of life and help in the planning of services and the development of new treatment protocols.</p> <p>Link to more information on FAST website</p>	<p>01/01/2009 01/01/2015</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>PEACE: - PErsonAI Care Environments delivering support for vulnerable people</p> <p>Research team: Docobo UK Ltd Contact: 01372 459866 Other partners: Southampton City PCT, HW Communications Ltd, Age UK, Hywel Dda local health board, Carmarthenshire Division, Chubb Electronic Security Systems Ltd Funder: ALIP Amount: £1,740,335</p>	<p>The aim of this project is to provide a seamless integration between telehealth and telecare deployments by incorporating functions which have been proven in other domains. The project is user led and the technical design requirements are evolving through an extensive series of focus groups.</p> <p>Link to more information on FAST website</p>	<p>01/10/2008 01/10/2011</p>
<p>PEACEanywhere: PErsonAI Care Environments anywhere at any time</p> <p>Research team: Docobo UK Ltd Contact: 01372 459866 Other partners: Southampton City PCT, HW Communications Ltd, Age UK, Hywel Dda local health board, Carmarthenshire Division, Guidance Monitoring Ltd, Glenside Manor Healthcare Services Ltd. Funder: ALIP Amount: £2,428,909</p>	<p>This work will expand the current PEACE project to enable the care environment to be extended to support people anywhere and at anytime. This will be achieved by the development and integration of 'in house' and 'out of house' technologies for seamless service provision, location detection and monitoring, plus communication with those who can provide assistance if required.</p> <p>Link to more information on FAST website</p>	<p>01/10/2009 30/06/2012</p>
<p>PERFORM: A sophisticated multi-parametric system for the continuous-effective assessment and monitoring of motor status in Parkinson's disease and other neurodegenerative diseases</p> <p>Research team: Oxford Computer Consultants Contact: 01865 305200 Other partners: University of Westminster, Kingston Computer Consultants, plus partners in Spain, Poland, Greece, Italy, Cyprus, Czech Republic Funder: European Commission FP7 Amount: €7,000,000</p>	<p>This project aims to research and develop an innovative, intelligent system for monitoring the progress of someone with a neurodegenerative disease by using a wide range of wearable micro-sensors. These will be attached to everyday personal gadgets (e.g. cloths, accessories) and will be able to 'sense' the user's behaviour and motor status and store the recorded data in a local portable/handheld computer. This data will then be processed and seamlessly transmitted to the centralised system for further monitoring and evaluation.</p> <p>Link to more information on FAST website</p>	<p>01/02/2008 31/01/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Promoting physical independence by involving users in rehabilitation through dynamic visualisations of movement data</p> <p>Research team: Health Qwest, University of Strathclyde Contact: 0141 548 3032 Other partners: Glasgow Caledonian University, Glasgow School of Art Funder: LLHW Amount: £1,300,000</p>	<p>This project is developing an innovative method of visualising biomechanical data so that people can learn to perform rehabilitation exercises to the best of their ability. Researchers also aim to make biomechanical data available to a much broader range of health professionals, clients and carers and to deliver clinical biomechanics as a discipline at the centre of rehabilitation healthcare service delivery.</p> <p>Link to more information on FAST website</p>	<p>05/01/2010 04/07/2013</p>
<p>Pro-Sense</p> <p>Research team: School of Electronic, Electrical & Computer Engineering, University of Birmingham Contact: 0121 414 5630 Other partners: Partners in Ireland, France, Poland, Slovenia, Greece, Serbia, former Yugoslav republic of Macedonia Funder: European Commission FP7 Amount: €900,000</p>	<p>The project's objective is to improve the research potential and capability of research centres in Skopje and Belgrade, and to develop them into wireless sensor networking centres of excellence capable of driving the research agenda and serving as a seed for development of other similar centres in the region. One particular area of activity will be the development of personal health monitoring systems, including systems for support of independent living.</p> <p>Link to more information on FAST website</p>	<p>01/03/2008 28/02/2010</p>
<p>Randomised controlled trial of continuous positive airway pressure treatment in older people with obstructive sleep apnoea hypopnoea syndrome</p> <p>Research team: Faculty of Medicine, Imperial College Contact: 020 758 95111 Other partners: Funder: NIHR HTA Amount: £1,507,799</p>	<p>This study will measure the effect of treating obstructive sleep apnoea hypopnoea syndrome on daytime sleepiness in patients over 65 years. It will also investigate whether a technology called continuous positive airway pressure (CPAP) is cost effective in this age group.</p> <p>Link to more information on FAST website</p>	<p>01/08/2009 30/09/2013</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>REACH112 - REsponding to All Citizens needing Help</p> <p>Research team: Centre for Deaf Studies, University of Bristol Contact: 0117 9546900 Other partners: AuPix, RNID, Avon and Somerset Police Authority, Avon Fire and Rescue Service, plus partners in Italy, Belgium, Greece, France, Finland, Spain, Sweden and the Netherlands Funder: ICT Policy Support Programme (EU funding) Amount: €4,400,000</p>	<p>The aim of this project is to deploy a new text, voice and video communication solution to allow disabled people direct access to emergency services. RNID has run a project asking people who are deaf or hard of hearing to fill in an online questionnaire about their experiences and requirements when contacting the police, ambulance and fire services and the coast guard.</p> <p>Link to more information on FAST website</p>	<p>01/07/2009 01/06/2012</p>
<p>Recent developments in lower-limb prostheses: To gain full advantage of improved mechanical function are sensorimotor control features necessary?</p> <p>Research team: School of Engineering, Design and Technology, University of Bradford Contact: 01274 233721 Funder: EPSRC Amount: £102,238</p>	<p>Researchers are analysing the extent to which control of a prosthetic limb or foot is reliant on vision versus the sense of "feel" from the prosthetic limb.</p> <p>Link to more information on FAST website</p>	<p>01/02/2010 31/01/2012</p>
<p>REACT: the Randomised Evaluation of the Effectiveness and Acceptability of Computerised Therapy trial</p> <p>Research team: Dept of Health Sciences, University of York Contact: 01904 321344 Other partners: Funder: NIHR HTA Amount: £1,621,924</p>	<p>The purpose of this study is to compare two computerised CBT packages (one free-to-use and one commercial) to see if there are any additional benefits of offering this treatment to the care that people already receive from their GP. Recruitment of 600 participants from GP practices in four areas (York, Sheffield, Bristol and Manchester) is underway.</p> <p>Link to more information on FAST website</p>	<p>01/05/2009 01/01/2015</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>REFINE: REducing Falls in IN-patient Elderly Study</p> <p>Research team: Nottingham University Hospitals NHS Trust Contact: 0115 924 9924 Funder: NIHR RfPB Amount: £248,769</p>	<p>This research is building on a pilot study which used sensors placed on the bedside chair and on the bed to monitor patient movements. Researchers will measure how large and significant the effects are and which groups benefit most. The project will also assess the benefits of reducing falls on people's health and evaluate the cost-effectiveness of using sensors.</p> <p>Link to more information on FAST website</p>	<p>01/08/2008 31/03/2011</p>
<p>REPAIRS: Realistic Environments for Personalised And Interactive Rehabilitation Systems</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Funder: DELNI Amount: Not disclosed</p>	<p>The aim of this project is to investigate the effectiveness of designing games for upper limb motor rehabilitation using the principles of game design theory. In addition, the use of novel input technologies (such as web cameras, Nintendo Wii, haptics and electromagnetic sensors) will be explored, as well as the use of the internet to allow for remote monitoring and online support from clinicians or physiotherapists.</p> <p>Link to more information on FAST website</p>	<p>01/10/2007 30/09/2010</p>
<p>Requirements Gathering for an inclusive Digital Economy</p> <p>Research team: School of Computing, University of Dundee Contact: 01382 385597 Other partners: IBM Watson Research Centre, University of Miami School of Medicine Funder: EPSRC Amount: £61,815</p>	<p>This research was aimed at understanding the needs of older adults when it comes to job performance, and the conceptual challenges in designing appropriate accessible technology for an increasingly ageing workforce. A methodology involving the skills of theatre professionals to facilitate discussions with groups of workers was used.</p> <p>Link to more information on FAST website</p>	<p>01/08/2008 30/06/2009</p>
<p>Rural Digital Economy Research Hub</p> <p>Research team: Geography & Environment, University of Aberdeen Contact: 01224 272350 Other partners: Funder: EPSRC Amount: £12,360,027</p>	<p>Working with communities, businesses and policy-makers on initiatives in tourism, healthcare, accessibility, conservation of natural resources, and enterprise and culture, the University of Aberdeen researchers will use their expertise in information technology applications, rural economy and society, to initiate innovative projects in rural communities and businesses across the UK. There will be some use and development of assistive technology in order to facilitate this.</p> <p>Link to more information on FAST website</p>	<p>01/10/2009 30/09/2014</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
SAFER (Support and Assessment for Fall Emergencies Referral) Trial Research team: School of Medicine, University of Swansea Contact: 01792 513400 Funder: Department of Health Research and Development Directorate Amount: £99,000	This project is a randomised controlled trial which aims to provide an evaluation of the costs and benefits of computerised on-scene decision support for emergency ambulance personnel to assess and plan appropriate care for older people who have fallen. The trial went live in Wales in November 2009 and in the East of England in December 2009. Data is being collected and the initial feedback from the pilot period is being incorporated. Link to more information on FAST website	01/08/2007 31/10/2010
SENIOR: Social Ethical and privacy Needs in ICT for Older people: a dialogue Roadmap Research team: Trilateral Research & Consulting LLP Contact: 0207 244 7284 Other partners: Global Security Intelligence Ltd, plus partners in Italy, Romania, Belgium, Denmark Funder: European Commission FP7 Amount: €950,000	The aim of this project was to provide a systematic assessment of the social, ethical and privacy issues involved in ICT and ageing. Researchers organised a series of workshops and meetings of experts, and in Nov 2009, published a report 'Social, Ethical and Privacy Needs in ICT for Older People: a dialogue roadmap.' Link to more information on FAST website	01/01/2008 31/12/2009
Sensor Distribution Optimisation for Smart Homes Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Funder: DELNI Amount: Not disclosed	The aim of this project is to investigate the problem of how to optimise the distribution of sensors, with the ultimate goal of developing a model which could be used to determine the optimal device configuration for any smart home implementation. The model will consider the type, amount and location of any sensing devices required, taking account of factors such as furniture placement, energy consumption, cost and scalability, along with the individual requirements of the person in their own home. Link to more information on FAST website	01/03/2007 01/07/2010
SERA: Social Engagement with Robots and Agents Research team: School of Health and Related Research, University of Sheffield Contact: 0114 222 5454 Other partners: Partners in Austria, Germany, the Netherlands Funder: European Commission FP7 Amount: €1,150,000	Researchers are undertaking real-life extended field studies of the ways in which users engage with robotic devices, and are investigating ways to build in sociability into robot architectures from scratch. Link to more information on FAST website	01/01/2009 31/12/2010

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>SESAME: Sensing for Sport and Managed Exercise</p> <p>Research team: Dept of Computer Science, University College, London Contact: 020 7679 7214 Other partners: University of Cambridge, Royal Veterinary College, University of Wales Institute Cardiff, UCL Funder: EPSRC Amount: £971,747</p>	<p>This multidisciplinary group is investigating the use of wireless sensor-based systems to enhance the performance of athletes, but the technical approach and solutions are generic, to enable their subsequent application to a wider range of training and health care scenarios including, for instance, the rehabilitation of patients following surgery, stroke or injury, and support for people with physical disabilities. Researchers are trialling pressure sensors in shoes and ultra-lightweight body sensors which are connected to trackside computers for analysis.</p> <p>Link to more information on FAST website</p>	<p>01/07/2006 01/07/2010</p>
<p>ShareIT</p> <p>Research team: Computing Department, Open University Contact: 01908 858642 Other partners: University of Sussex Funder: EPSRC Amount: £1,000,000</p>	<p>This project is using a range of new technologies, such as gesture-based wall displays, multi-touch tabletops and interactive objects, to encourage small groups to work together better and to examine how such technologies can be used to improve social skills in children with autism.</p> <p>Link to more information on FAST website</p>	<p>01/10/2008 30/09/2010</p>
<p>SMART 2: Self Management supported by Assistive, Rehabilitation and Telecare Technologies</p> <p>Research team: Faculty of Computing and Engineering, University of Ulster Contact: 028 9036 6305 Other partners: Bath University, Sheffield Hallam University, Barnsley Hospital NHS Foundation Trust, BT Laboratories, Philips Research Laboratories, Teler Ltd Funder: EPSRC Amount: £2,300,000</p>	<p>This project is looking at how technologies can be used to help individuals and their families manage the consequences of long term conditions and maintain quality of life, supported by professionals. Consultations with people with stroke have led to the development of two scenarios of how someone with stroke might use the personalised self management system (PSMS) within their homes which are currently being assessed by different members of the multi-disciplinary team, and by people with stroke.</p> <p>Link to more information on FAST website</p>	<p>01/01/2008 31/12/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Smart Distress Monitors</p> <p>Research team: Division of Psychology and Social Change, Manchester Metropolitan University Contact: 0161 247 2569 Other partners: InfraRed Integrated Systems Ltd Funder: TSB Amount: £203,893</p>	<p>The project's aim is to develop an affordable, accessible and user centred automatic monitoring and alarm system to detect and locate vulnerable people when in need of assistance, in real time and without the need for positive action on their part. Pilot home trials with the system prototype, which was designed with input from older people's advisory groups, began in September 2009. Early findings highlight the need for a flexible, unobtrusive system which can prioritise people's wishes and which is reliable.</p> <p>Link to more information on FAST website</p>	<p>01/10/2008 31/03/2011</p>
<p>SMILING: Self Mobility Improvement in the eLderly by counteractING falls</p> <p>Research team: Dept of Mechanical Engineering, University of Strathclyde Contact: 0141 548 4851 Other partners: Partners in Ireland, Italy, Switzerland, Netherlands, Slovakia Funder: European Commission FP7 Amount: €2,870,000</p>	<p>This project aims to develop and construct an advanced prototype of a wearable non-invasive computerised system for older people which improves their gait patterns in order to counteract tendencies to fall. Working systems have been developed and completed, and user trials will commence shortly.</p> <p>Link to more information on FAST website</p>	<p>01/01/2008 30/06/2010</p>
<p>SomnIA: Optimising quality of sleep among older people in the community and care homes: an Integrated Approach</p> <p>Research team: Centre for Research on Ageing and Gender, University of Surrey Contact: 01483 683964 Other partners: King's College London, Bath Institute of Medical Engineering, University of Loughborough, Healthtalkonline, Age UK, Nottinghamshire HealthCare NHS Trust, Philips Lighting, Relatives & Residents Association Funder: NDA Amount: £2,400,000</p>	<p>This collaborative research project addresses practice and policy issues arising from the nature, impact and management of the sleep-wake balance in later life. One work package is exploring technological solutions to help improve sleep, and initial design work is taking place on a number of products to facilitate sleep for residents in care homes.</p> <p>Link to more information on FAST website</p>	<p>01/12/2006 01/12/2010</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>SOPRANO: Service Oriented Programmable Smart Environments for Older Europeans</p> <p>Research team: Tunstall Group Ltd Contact: 01977 661234 Other partners: Consortium of 20 partners, including academic researchers, local authorities and equipment suppliers in Spain, the Netherlands, Greece, Slovenia, Germany, Ireland, Canada Funder: European Commission FP6 Amount: €7,000,000</p>	<p>This project is designing and developing highly innovative, context-aware, affordable smart services with natural and comfortable interfaces for older people which promote independence and improve quality of life. Prototypes have been lab-tested at four sites, including West Lothian and Newham, with more than 50 users. Components packages tested included digital TV with remote control, touch screen applications, avatars, and speech generation and speech recognition.</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 30/04/2010</p>
<p>SPECS: Speech-driven Environmental Control Systems</p> <p>Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Other partners: University of Sheffield, Toby Churchill Ltd, Medipex, ELPedium Technologies Ltd Funder: NIHR HTD Amount: £400,000</p>	<p>Researchers developed an environmental control system for disabled and older people which is controlled by automatic speech recognition. Work is now focused on improving the user interface, the reliability and appearance of the prototype system in conjunction with users.</p> <p>Link to more information on FAST website</p>	<p>01/02/2006 31/12/2009</p>
<p>SSHOES: Special SHOES Movement</p> <p>Research team: Centre for Health, Sport and Rehabilitation Sciences Research, University of Salford Contact: 0161 295 2275 Other partners: Soletec Systems Ltd plus consortium of 11 partners in Spain, Italy, Germany Funder: European Commission FP7 Amount: €4,874,025</p>	<p>This project aims to devise methodologies and manufacturing systems for the production of footwear and insoles which are adapted to the requirements of individual customers. The team at Salford University is working on activity monitoring algorithms to investigate activity patterns in people with diabetes in order to assess how the level of physical activity is related to the development of diabetic foot ulcers.</p> <p>Link to more information on FAST website</p>	<p>01/07/2009 30/06/2012</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Supporting People to Choose and Use Technology for Self Care Research team: FAST Contact: 0207 264 8955 Other partners: Assist UK, Age UK Funder: Dept of Health TSIP Amount: £47,500	Assistive technology (AT) has an important role to play in helping older and disabled people live independently, but many potential users are not aware of the technology available or of how they could use it to support their daily activities. The aim of this project is to provide training and information about the use of AT for people living with long term conditions. Focus groups have been held with older and disabled people to explore their understanding of AT and ways in which training could be delivered. Link to more information on FAST website	01/04/2008 31/03/2011
Surface Textures for Affective Communication Research team: School of Mechanical Engineering, University of Leeds Contact: 0113 34 32155 Funder: EPSRC Amount: £323,624	Researchers have constructed a tactile measurement system consisting of artificial fingertips and different sensors. With the help of mathematical models, this system is able to measure how people feel when they touch different surfaces. This work has applications in improving quality of life for people with visual impairments. Link to more information on FAST website	01/08/2006 31/07/2009
SUS-IT: SUsTaining IT use by older people to promote autonomy and independence Research team: School of Architecture, Design and the Built Environment, Nottingham Trent University Contact: 01509 223052 Other partners: Nottingham Trent University, University of Dundee, Lincoln University, Anglia Ruskin University, University of Surrey Funder: NDA Amount: £1,106,342	This work seeks to investigate the actual and potential barriers to sustained and effective use of ICTs by older people, and to explore a range of potential social and technical solutions. Close and sustained engagement with older people, through user panels, is a central feature of this research. Link to more information on FAST website	01/01/2009 31/03/2012

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>TACT3: Tackling Ageing Continence through Theory Tools and Technology</p> <p>Research team: Institute of Bioengineering, Brunel University Contact: 01895 274000 Other partners: Sheffield Institute for Studies on Ageing, University of West of England, Sheffield Hallam University, University of Manchester, Helen Hamlyn Research Centre, BioMed Healthcare Co-operative Funder: NDA Amount: £1,295,586</p>	<p>The project will investigate the problems older people have in finding and using toilets when they are away from home and consider more inclusive designs. The team will develop two products which have been requested by continence pad users. One is a urine odour detector that will warn the pad needs changing before any odour is detected by the human nose. The other product is smart underwear that can detect a pad leak immediately and warn the wearer or carer</p> <p>Link to more information on FAST website</p>	<p>01/11/2008 30/04/2012</p>
<p>Teenage Worlds, Different Voices: an ethnographic study of identity and the lifeworlds of disabled teenagers who use AAC</p> <p>Research team: UCL Centre for International Health and Development Contact: 020 7905 2122 Funder: ESRC Amount: £17,000</p>	<p>In this PhD study the researcher followed ten augmented alternative communication (AAC) users aged 10-16 during the course of a year. The aim was to reveal the views of a group who are usually excluded from research. It is hoped that funding will be found to produce a user friendly summary of the project, which will be distributed to participating families and schools and to other interested parties.</p> <p>Link to more information on FAST website</p>	<p>01/10/2006 01/09/2009</p>
<p>Telemetric supported self-monitoring of long-term conditions</p> <p>Research team: Division of Community Health Sciences, University of Edinburgh Contact: 0131 650 6194 Other partners: Napier University Funder: Chief Scientist Office, Scottish Centre for Telehealth, NHS Lothian, Edinburgh City Council Amount: £1,000,000</p>	<p>The aim of the project is to investigate whether or not home monitoring is a safe and effective way for people with a range of long term conditions, including high blood pressure and diabetes, to manage their condition. Researchers have recruited 230 patients to the randomised trial in telemetric management of blood pressure and around 70 to the trial of COPD.</p> <p>Link to more information on FAST website</p>	<p>01/04/2008 01/04/2012</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Telemonitoring and self management in hypertension (TASMINH 2): A randomised controlled trial and qualitative evaluation of the efficacy and acceptability of telemonitoring and self management in the control of hypertension</p> <p>Research team: Primary Care Clinical Sciences, University of Birmingham Contact: 0121 414 6764 Funder: Department of Health ICTRI Amount: £330,000</p>	<p>The project is a primary care-based randomised controlled trial designed to evaluate the costs and effects of increasing patient involvement in blood pressure management. It compares home monitoring and self measurement of anti hypertensive medication with usual care. Results are expected in mid 2010. Link to more information on FAST website</p>	<p>01/02/2007 30/11/2009</p>
<p>The Changing Health Care Paradigm and User Involvement in AT-assessment</p> <p>Research team: Division of Applied Biomedical Research, Kings College London Contact: 020 7848 8102 Funder: EPSRC Amount: £60,000</p>	<p>The purpose of this study is to identify the level of involvement in the decision-making process as perceived by the user when choosing an AT-device and the level of satisfaction with the perceived involvement. In addition, factors influencing the AT-provision decision-making process will be analysed. Link to more information on FAST website</p>	<p>01/01/2008 01/01/2011</p>
<p>The clinical and cost-effectiveness of bone anchored hearing aids (BAHAs) for people who are bilaterally deaf</p> <p>Research team: Southampton Health Technology Assessment Centre Contact: 023 8059 5591 Funder: NIHR HTA Amount: £178,793</p>	<p>The benefits and costs of bilateral compared with unilateral bone anchored hearing aids (BAHAs) and of BAHAs compared with conventional aids or surgery is not known. This research aims to develop an economic model to examine the costs and benefits of BAHAs within the UK. Data is currently being gathered from a literature review of studies, advice from clinicians and patient representatives and recognised sources. Link to more information on FAST website</p>	<p>01/05/2009 30/04/2010</p>
<p>TiKL: Transitions in Kitchen Living</p> <p>Research team: Faculty of Health & Social Care, Open University Contact: 01908 653420 Funder: NDA Amount: Not disclosed</p>	<p>This project is investigating the experience of the kitchen for older people living in a variety of 'ordinary' and 'supportive' housing in urban and rural locations in England. The aim is to develop resources for older people, occupational therapists and kitchen designers that provide an understanding of user requirements for inclusive kitchen design or adaptation. Link to more information on FAST website</p>	<p>01/09/2009 30/08/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>TOBI: Tools for brain-computer interaction</p> <p>Research team: Multimodal Interaction Group, University of Glasgow Contact: 0141 330 4256 Other partners: Partners in France, Germany, Austria, Italy, Switzerland Funder: European Commission FP7 Amount: €12,000,000</p>	<p>The project is developing non-invasive brain-computer interfaces (BCI) based on electroencephalogram (EEG) signals. Researchers will be looking at a hybrid approach whereby users can fuse brain interaction and muscle-based interaction or can switch between different channels naturally (based on monitoring of physiological parameters or mental states). The project is currently looking for a commercial partner to take ideas forward. Link to more information on FAST website</p>	<p>01/11/2008 31/10/2012</p>
<p>TOTALCARE: a digital health-care framework integrating secure personal monitoring with P2P medical condition community support focused on ageing & obese</p> <p>Research team: Centre for Vision and Robotics Research, University of Lincoln Contact: 01522 882000 Other partners: Imperial College London, Capita, O2, Dynamical Systems Research, Phrisk, e2v technologies, Tactical Systems Designers, Wifore, Cambridge Silicon Radio Funder: EPSRC Amount: £300,000</p>	<p>The aim of this project is to deliver a demonstrator of a new type of digital healthcare service and monitoring framework, based on an integrated in-home sensor system capable of detecting human presence and communicating with an external database for decision making. The main goal is to reduce the amount of data that needs to be transmitted to a central server for both short and long term decision making. The project will focus mainly on older people, with a special focus on deteriorating health conditions and mobility. Link to more information on FAST website</p>	<p>01/09/2009 28/02/2011</p>
<p>TrAHVIIT - Transfer of audio-haptics for visually impaired information technology</p> <p>Research team: Royal National College for the Blind Contact: 01432 265725 Other partners: Partners in Romania, Austria, Turkey, Malta, Bulgaria Funder: EU Leonardo da Vinci Amount: €299,825</p>	<p>This project is developing work using talking tactile technology to support distance learning for people with visual impairment which began on the earlier EU-funded AHVIIT project. The new research will transfer the technology to new countries in the EU and to new subject areas and will also work to overcome the some of the extant problems of teaching with audio haptics information technology. Link to more information on FAST website</p>	<p>01/10/2009 01/09/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>T-Seniority: expanding the benefits of information society to older people through digital TV channels</p> <p>Research team: DigiTV Contact: 01484 221000 Other partners: Partners in France, Spain, Italy, Greece, Cyprus, Finland Funder: ICT Policy Support Programme (EU funding) Amount: €2,670,000</p>	<p>The aim of this project is to improve the quality of life for older people and to offer efficient health and social care through the use of innovative IT products and services. Pilots have been carried out in Spain using the Wii as an interface, and the project was a finalist in the ACCESS-IT 2009 competition.</p> <p>Link to more information on FAST website</p>	<p>01/07/2008 01/07/2010</p>
<p>TV-based Video Telephony Platform for Assisted Living and Tele-Health</p> <p>Research team: Advanced Digital Institute (ADI) Contact: 01274 510 220 Other partners: Red Embedded Design Ltd, BTL Group Ltd, Airedale NHS Trust Funder: ALIP Amount: £1,500,000</p>	<p>The aim of this project is to provide affordable two-way video technology in people's homes which can be used to provide support, consultations with health professionals and to supply health information. The internal trialling phase is complete and the project is progressing to patient trials.</p> <p>Link to more information on FAST website</p>	<p>01/07/2008 31/12/2010</p>
<p>UK-Japan Neural Interfaces N+N Workshop</p> <p>Research team: Institute of Neuroscience, University of Newcastle Contact: 0191 222 6648/5731 Funder: EPSRC Amount: £7,957</p>	<p>Researchers in the UK and Japan are working on new applications for neural interfaces, such as brain-machine interfaces to allow paralysed patients to control computers or assistive devices. This project will organise a two-day workshop which will allow ten leading UK researchers and ten Japanese counterparts to present reports on their work.</p> <p>Link to more information on FAST website</p>	<p>15/01/2010 14/06/2010</p>
<p>UMSIC: Usability of Music for Social Inclusion of Children</p> <p>Research team: Institute of Education, University of London Contact: 020 7612 6000 Other partners: University of Central Lancashire, plus partners in Finland, Switzerland, Greece Funder: European Commission FP7 Amount: €2,130,000</p>	<p>The aim of this project is to develop and use a music-oriented product called JamMO which offers sound synthesis, sampling, sequencing and touch-screen virtual musical instruments in an educational format for children with specific needs. Researchers have been developing prototype software based on tests conducted in schools last year.</p> <p>Link to more information on FAST website</p>	<p>01/09/2008 01/08/2011</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>VenUS IV (Venous leg Ulcer Study IV): A randomised controlled trial of compression hosiery versus compression bandaging in the treatment of venous leg ulcers</p> <p>Research team: Dept of Health Sciences, University of York Contact: 01904 321344 Other partners: Funder: NIHR HTA Amount: £1,012,624</p>	<p>The project will focus on a randomised controlled trial comparing four layer compression bandaging (4LB) with compression hosiery. Around 400 patients with venous leg ulcers will be recruited from community and outpatient clinics, home settings, nursing and residential homes. The primary outcome to be assessed will be the time the ulcer takes to heal.</p> <p>Link to more information on FAST website</p>	<p>01/05/2009 01/05/2013</p>
<p>VET4VIP - Vocational English training for visually impaired people</p> <p>Research team: Royal National College for the Blind Contact: 01432 265725 Funder: EU Leonardo da Vinci Amount: €529,779</p>	<p>This project is developing a train-the-trainer course for language teachers on dealing with people with visual impairment and how to use and create teaching materials for this target group using suitable assistive technologies as well as adaptable computer-based training modules for business English designed for blind and visually impaired adult learners.</p> <p>Link to more information on FAST website</p>	<p>01/12/2009 01/06/2012</p>
<p>VirtEx</p> <p>Research team: Tunstall Group Ltd Contact: 01977 661234 Other partners: Fold Housing Association, Housing 21, DigiTV, University of Sheffield Funder: ALIP Amount: £2,003,128</p>	<p>The aim of this project is to create a 'virtual community' of connected carers, older people and people living with long-term conditions. Such an approach can reduce social isolation and help people maintain a healthier and independent lifestyle by encouraging a change in behaviour.</p> <p>Link to more information on FAST website</p>	<p>01/10/2008 01/10/2011</p>
<p>Vital: Vital Assistance for the Elderly</p> <p>Research team: Derwentside District Council Contact: 0300 123 7070 Other partners: Consortium of nine partners from Czech Republic, Germany, France, Spain Funder: European Commission FP6 Amount: €2,100,000</p>	<p>The project developed a new interface based on the concept of the personal 'intelligent' assistant which can communicate with users, interpret their demands and respond. This 'Total Assistance' concept will ensure that services evolve as the user ages, without the user needing to master a new set of commands. There were two pilot sites for the Vital platform, one in Spain, and the other in county Durham in the UK.</p> <p>Link to more information on FAST website</p>	<p>01/01/2007 31/12/2009</p>

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
Vital Mind: VM Research team: School of Computing, University of Dundee Contact: 01382 385597 Other partners: i2 Media, plus partners in Czech Republic, Italy, Netherlands Funder: European Commission FP7 Amount: €2,750,000	The project will examine the impact on cognitive status of 'brain training' and physical exercise elements delivered to older adults via the television. It will also investigate innovative developments in the detection of hand movements and non-vocal responses, as well as developing a remote control which allows users to participate independently in a cognitive training program. Link to more information on FAST website	01/01/2008 30/06/2010
What do users really want from communication aids? Research team: Assistive Technology Team, Medical Physics Department, Barnsley Hospital NHS Foundation Trust Contact: 01226 432159 Other partners: Sheffield Speech & Language Therapy Service Funder: D4D HTC Amount: £10,000	The aim of this work is to report on the priorities of communication aid users; to provide tools to assist in the decision-making process for considering communication aids; and to inform and work with manufacturers to influence the design of new devices. Results are likely to lead to a better picture about users' requirements for communication aids that will impact on the decision making of professionals and designers. Link to more information on FAST website	01/01/2008 01/01/2010
Whole System Demonstrator (WSD) for telecare and telehealth Research team: London Borough of Newham, Cornwall County Council, Kent County Council Contact: wsdnetwork@kingsfund.org.uk Funder: Department of Health Amount: £31,000,000	The Whole System Demonstrator (WSD) trial aims to provide information about the extent to which integrated health and social care supported by appropriate technologies can promote individuals' long term well-being and independence, improve quality of life for them and their carers, improve the working lives of health and social care professionals, and provide an evidence base for more cost effective and clinically effective ways of managing long term conditions. WSD is believed to be the largest randomised control trial of telehealth and telecare to date anywhere in the world. Early results suggest improvements in quality of life and in control of long term conditions, coupled with a reduction in emergency hospital admissions, but a full evaluation is in progress and will report later this year. Link to more information on FAST website	01/05/2008 31/10/2010

Project title Organisation(s) Contacts Funding	Project summary	Start and finish dates
<p>Working Late: Strategies to Enhance Productive and Healthy Environments for the Older Workforce - collaborative research project</p> <p>Research team: Dept of Human Sciences, Loughborough University Contact: 01509 223036 Other partners: Royal Society for the Encouragement of Arts, Manufacturers and Commerce (RSA), The Age and Employment Network (TAEN), COPE Occupational Health Services, plus industrial partners including Engineering Employers Federation, the Major Contractors Group, E.on, PPG, I-Smart Funder: NDA Amount: £1,500,000</p>	<p>This project will address practice and policy relevant issues associated with later life working and develop interventions and design solutions to promote health and productivity and improve the quality of working life of older people. A survey assessing physical activity, job attitudes, work ability and occupational health experiences is live in a number of organisations. Recruitment of organisations for the health intervention phase is underway.</p> <p>Link to more information on FAST website</p>	<p>01/11/2008 01/11/2012</p>

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