

T4I Technology for
Independence
Conference
RAatE 2016

T4I2016 Draft Programme

Join us at T4I, the Technology for Independence Conference, with topics around Assistive Technology and service innovation across health, education, employment and daily living.

Open Access
Publications



Monday 28th Nov 2016

08.30 - 17.30

St. Mary's Church & Conference Centre, Sheffield, S2 4QZ

Register now via: www.t4i2016.org.uk

Follow us on Twitter: @T4I_RAatE #T4I2016

Impact
of IoT



Free
Social Event*

Social event on evening of Sunday 27th Nov at Kelham Island Brewery

Steak & Ale Pie, Peas and Local Beer

We will host a pre-event dinner at Kelham Island Brewery (23 Alma St, Sheffield, S3 8SA) with Steak & Ale Pie, Peas and local beer which will take place on Sunday

Free Social Event*

27th November 2016 at 7pm.
*Places were limited and tickets are now allocated.

Kindly sponsored by



t4i@sheffield.ac.uk

Welcome



On behalf of the T4i Board I would like to welcome you to the 2016 T4i (RAatE) Conference. The RAatE Conference ran for over 10 years and I am delighted that we have been able to collaborate with our colleagues at CATCH (Sheffield University) to deliver a refreshed, dynamic and exciting event.

Reflecting the evolving and innovative ways that well designed, appropriate technology can promote and support independence for disabled people, we have changed the conference name to Technology for Independence (T4i). Our aims remain the same; to focus on service and technological innovations, formal research projects and service based research across the broad spectrum of Assistive Technologies (AT) and present these to a wide a range of people working in the field of AT.

I would like to thank all our presenters for submitting such a wide range of excellent papers. This has allowed us to put together a very full and varied programme with something of interest to everyone in our field. A special thanks and a very warm welcome to our plenary speaker Luc de Witte, who is Professor of Technology in Care at both Zuyd University of Applied Science and Maastricht University.

I hope you find the conference stimulating and useful in your field of work. Please also take the time to visit our exhibitors and finally (if you have any spare time on the day) don't forget to network with your colleagues!

Simon Fielden,
Chair T4i Board



When tweeting about the event, please use: #T4I2016

Talks in the Nave:

TIME	TITLE	SPEAKER
08.30	Registration	
09.00	Opening	Simon Fielden
09.10	Plenary: How to close the gap between what is technically possible and practically available?	Luc de Witte
10.00 - 10.30 Coffee break		
10.30	Simplicity is the Ultimate Sophistication	Andrea Kirton
10.50	EyeGaze case study	Darren Hall
11.10	The use of technology to provide physical interaction for cognitively able young people who have complex physical disabilities	Mark Moseley
11.30	Advanced switches and other new developments in access	Neil Fitzgerald
12.00	The potential application of EMG as assistive technology: a usability study	Nasrin Nasr
12.20 - 13.30 Lunch		
13.30	The emergent IoT and the impacts that are expected in Social Care	Stephen Purdham
14.30	Developing Effective Intelligent Assistance for the Powered Wheelchair User	Michael Gillham
14.50	Modifications to Customer Relationship Management (CRM) database system to enable the use of speech recognition software	Manuel Barradas
15.10 - 15.40 Coffee break		
15.40	Novel Navigation of AAC Device	Sally Darley
16.00	DrawTalk, an alternative input method for an AAC aid	Dr. Peter O'Neill
16.20	Personalise, Localise, Globalise: Symbols to enhance Independent Communication	E.A. Draffan
16.40	Digital Talking Mats: a tool to enhance communication	Dr Joan Murphy
17.00	A Case Study Report of Technological Aids for Episodic Memory	Sarah Ward
17.20 - 17.30	Close	Mark Hawley and Simon Fielden

Overview of the conference day

When tweeting about the event, please use: **#T4I2016**

More talks after lunch in the Garden Room:

TIME	TITLE	SPEAKER
13.30	Terminology, understanding AT and practice	Abi James and E.A. Draffan
13.50	Stepping Stones for people with cognitive disabilities and low digital literacy	Steve Lee
14.10	Designing Collaborative Virtual Environments for children on the Autism Spectrum	Bryan Boyle
14.30	STEM Enable: improving STEM accessibility through knowledge sharing	Abi James
14.50	Supplementing face-to-face counselling with guided use of a well-being app in a university counselling setting: A feasibility trial	Emma Broglio
15.10 Coffee break		
15.40	Disabled people crossing the digital divide: Supporting independence with digital skills in the community	Emily Redmond and Tom French
16.30 - 17.20	Open Design: A proposed web service to facilitate sharing of hardware and software solutions in AT	Paul Hewett and Will Wade

Detailed information about the talks

When tweeting about the event, please use: **#T4I2016**

As T4I is intended to be of interest to practitioners as well as innovators we receive quiet different types of abstracts that can qualify for inclusion. Please find below descriptions for the three categories of short articles. The content will be published open access and will be accessible via the T4I website on the day of the conference: www.t4i2016.org.uk.

- Academic/Research: contributions that have taken an academic or formal research approach to their work. Usually involving users.
- Non-research: an investigatory contribution that hasn't necessarily followed a formal research approach. e.g. Audit or Service development, Public Involvement.
- Knowledge Transfer: knowledge sharing of novel information, resources – such as services or products e.g. could be training, education, awareness.

09.10 - 10.00 Luc de Witte, CATCH, University of Sheffield [@CATCHShef](https://twitter.com/CATCHShef)

How to close the gap between what is technically possible and practically available?



In his presentation, Luc will talk about the global challenges in the field of assistive technology. Worldwide the need for AT is growing and the technological possibilities are rapidly increasing. But in the meantime countries tend to minimise the possibilities for people with disabilities to obtain assistive technology through their service delivery systems. These opposing trends create a growing gap between needs and availability of technology. What can be done to close this gap? And what is the responsibility of professionals in AT? These are examples of the questions Luc will address.

Monday, 28th November 2016

10.30 - 10.50 Andrea Kirton, NHS [@AndreaKirton](https://twitter.com/AndreaKirton)

● Simplicity is the Ultimate Sophistication

Finding solutions for adults and children with physical disabilities to access technology can be inherently complex due to their posture, their range or type of movements and their limitations. The highly specialist technology which is used to overcome these barriers often adds further layers of complexity.

10.50 - 11.10 Darren Hall, Kings College Hospital NHS foundation Trust

● EyeGaze case study

This case study outlines and explains the reasoning behind the provision of an EyeGaze system and the design of a custom mounting bracket. To be provided to a client with Motor Neurone Disease (MND). The document outlines the manufacture of a special bracket to hold the EyeGaze system and allow the system to be mounted onto a desk or floor stand.

11.10 - 11.30 Mark Moseley, Bournemouth University

● The use of technology to provide physical interaction for cognitively able young people who have complex physical disabilities

This study aims to develop a tool incorporating an eye gaze controlled robotic arm that provides haptic feedback, to enable young people who have severe physical disabilities and good cognition to experience simulated physical manipulation of objects, and simple play.

11.30 - 12.00 Neil Fitzgerald, Smartbox Ltd. [@Thinksmartbox](https://twitter.com/Thinksmartbox)

● Advanced switches and other new developments in access

This presentation will highlight available EMG and head pointing products suitable for computer access. It will also cover advanced features in Grid 3 which can help with Touch access, voice recognition and environment control.

12.00 - 12.20 Simon Judge and Nasrin Nasr, Barnsley Assistive Technology Team, Barnsley Hospital [@BarnsleyAT](https://twitter.com/BarnsleyAT)

● The potential application of EMG as assistive technology: a usability study

The aim of the study reported in this paper is to examine the potential for the use of a new type of EMG sensor in assistive applications with the end goal of developing an EMG switch that can be placed on the market and used by individuals as an assistive control method.

Monday, 28th November 2016

13.30 - 14.30 Stephen Purdham, 3rings Care Ltd @3ringsUK

The emergent IoT and the impacts that are expected in Social Care

This presentation will look at the potential impact that the expected 50 billion things connected to the Internet by 2020 may have on social care building on experiences gained with the 3rings patented Plug & platform in creating distributed family care.

14.30 - 14.50 Michael Gillham, The University of Kent

Developing Effective Intelligent Assistance for the Powered Wheelchair User

This research is working towards developing a pre-production prototype system which can provide a low-cost real-time adjustable and adaptable driving assistance system for powered wheelchair users. Currently we are seeking to obtain information from user joystick input and their driving quality to identify symptoms and make adjustments to the driving assistance system.

14.50 - 15.10 Manuel Barradas, Care Quality Commission (CQC)

Modifications to Customer Relationship Management (CRM) database system to enable the use of speech recognition software

Adding Accessible Rich Internet Applications (ARIA) HTML elements to web pages enables users to use speech recognition software for data entry and retrieval of information on databases. This in turn minimises the use of the keyboard and mouse which in turn can lead to less repetitive strain injury. We have modified our internal database to make it more accessible to users who use Windows Speech Recognition.

15.40 - 16.00 Sally Darley, NHS

Novel Navigation of AAC Device

When considering access to Assistive Technology the mix of impairments a person has directs and influences the potential solutions. Although a purely physical impairment can have significant challenges when that is combined with a sensory impairment these challenges can increase. This paper presents an innovative solution to such a combined impairment.

16.00 - 16.20 Dr Peter O'Neill, Sheffield Hallam University @Dr_Peter_O'Neill and Andrea Kirton, Barnsley Hospital NHS Foundation Trust

DrawTalk, an alternative input method for an AAC aid

Drawing what we want to communicate goes back to the cave man times. So it should not have been a shock when it was suggested by an Assistive Technology Professional for an Augmentative Alternative Communication aid (AAC). A small group of students implemented this concept using this alternative method of input. ...

Monday, 28th November 2016

13.30 - 13.40 Abi James and E.A. Draffan, University of Southampton @EADraffan

Terminology, understanding AT and practice

A workshop explored common challenges to assistive technology practice across a wide range of service providers and AT disciplines. The authors examine whether a lack of common terminology was hindering cross-sector cooperation.

13.50 - 14.10 Steve Lee, OpenDirective Ltd. @SteveALee

Stepping Stones for people with cognitive disabilities and low digital literacy

The software components presented have been designed to allow people with cognitive disabilities and low digital literacy to easily perform common on-line activities. The components are managed as an open source project to encourage wide contribution and engender innovation.

14.10 - 14.30 Bryan Boyle, School of Computer Science and Statistics, Trinity College Dublin @Bryanboyle

Designing Collaborative Virtual Environments for children on the Autism Spectrum

This paper outlines the examination of the use of Collaborative Virtual Environments (CVE) as a computer aided learning tool for children with symptoms typically associated with a diagnosis at the moderate to severe side of the autism spectrum. Using a participative design approach and rapid, iterative development cycles, a CVE was co-designed with children with autism, their parents, teachers and other caregivers.

14.30 - 14.50 Abi James, University of Southampton @Abijames

STEM Enable: improving STEM accessibility through knowledge sharing

This session will briefly introduce Science, Technology, Engineering and Mathematics (STEM) accessibility issues before considering the potential impact of crowd-sourcing Assistive Technology (AT) knowledge on professional skills and the development of new technologies in other AT fields.

14.50 - 15.10 Emma Broglia, Department of Psychology, University of Sheffield

Supplementing face-to-face counselling with guided use of a well-being app in a university counselling setting: A feasibility trial

This article presents preliminary findings from an ongoing feasibility trial comparing counselling alone, against counselling supplemented with guided use of a well-being mobile phone app in university students experiencing anxiety or depression. Preliminary findings address the implementation, acceptability, usage, and potential implications described during a therapist focus group.

Monday, 28th November 2016

16.20 - 16.40 E.A. Draffan, University of Southampton @EADraffan

Personalise, Localise, Globalise: Symbols to enhance Independent Communication

This research explored the personal preferences of AAC users and those supporting them, in their need to have localised, cultural and religious symbols, that could be used alongside those already found on communication charts in certain multilingual settings.

16.40 - 17.00 Dr Joan Murphy, Talking Mats Ltd @TalkingMats

Digital Talking Mats: a tool to enhance communication

This presentation will explain the background to Talking Mats and the journey from a low-tech method to a digital tool. Talking Mats is a social enterprise whose vision is to improve the lives of people with communication difficulties by increasing their capacity to communicate effectively about things that matter to them. The tool is now being used widely with people of all ages and abilities across the world.

17.00 - 17.20 Sarah Ward, Chailey Clinical Services

A Case Study Report of technological Aids for Episodic Memory

This presentation describes a single case study where technological aids were used to promote independence of a child with significantly impaired episodic memory. In particular, the presentation looks at novel use of existing technologies in route finding and memory logging.

We will co-host our conference next year with #AAATE2017, see you there:

The poster for the 14th AAATE Congress 2017 in Sheffield, UK, features a yellow background with various colored callouts. A large red circle on the right contains the text 'Call now open'. The main headline reads 'Harnessing the power of technology to improve lives.' Below this, a blue box says 'Register your interest at: aaate2017.eu' and a pink box says 'Event Dates: 11th-15th, September 2017'. A small orange box provides more information about the Association for the Advancement of Assistive Technology in Europe (AAATE) and directs to www.aaate.net. Logos for AAATE, CATCH, and the Department of Health are at the bottom.

15.40 - 16.30 Emily Redmond, Tom French, Tinder Foundation @TinderFdn

Disabled people crossing the digital divide: Supporting independence with digital skills in the community

This presentation focuses on research undertaken with community organisations which support disabled people, to find out about the barriers to digital inclusion facing this audience. The research will inform a practical handbook to help such organisations get disabled people online.

16.30 - 17.20 Paul Hewett and Will Wade, Design4Us Lab Ltd/ACE Centre @Paulhewtweet @Willwade

Open Design: A proposed web service to facilitate sharing of hardware and software solutions in AT

A proposal for a web portal will be presented that enables assistive technology projects (both hardware and software), in particular those which are open source, to be collated easily. It enables projects from multiple sources to be searched and located.



All abstracts will be published open access and will be available via www.t4i2016.org.uk from 28.11.2016.

Monday, 28th November 2016

Enjoy
networking
with our
exhibitors

T4 Technology for
Independence
Conference
RAaTE 2016



Centre for Assistive Technology and Connected Healthcare



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