ICT-23-2017 - Interfaces for accessibility

a. Research and Innovation Actions

Proposals should cover one of the following themes:

- Support the development of intelligent, affordable and personalised interfaces and affective computing for people with cognitive disabilities to enable them to undertake everyday tasks and in particular to improve communication and facilitate the uptake and use of digital services. Solutions should recognise user's abilities and be able to detect behaviours and recognise patterns, emotions and intentions in real life environments. A mix of expertise is necessary including from relevant social sciences and humanities disciplines (e.g. cognitive sciences, psychology, disability studies) and due attention will be paid to the diversity of users and users' needs (e.g. age, gender, socio-economic status).

- Develop and test solutions, models and algorithms to improve (and act upon) information extraction from brain and neural signals, including through advances on state of the art electrodes and implantable devices.

The Commission considers that proposals requesting a contribution from the EU of about EUR 2 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

b. Innovation Actions

Building on ongoing efforts, develop and demonstrate decision support tools for the assessment of compliance to web sites accessibility standards and guidelines. Research should focus primarily on quality and accuracy of automatic support to assessments, detecting accessibility hurdles and assisting developers in repairing accessibility barriers. Solutions shall enable fast processing of dynamic content and large volumes of web pages/content and data, and more effective hybrid combination of automatic /expert reviews.

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Research on user-driven multimodal interface design has advanced the usability and accessibility of many software and devices to the benefits of all people, especially for those with different functional abilities. However, despite progress, there are still many who are disadvantaged due to lack of accessible and usable systems. Among those are persons with neurological conditions and disorders as well as cognitive disabilities.

More effective solutions, designed with people with disabilities and their carers, are needed to mediate communication experiences or for more natural interactions, including with their environment. Technologies aiming at enhancing cognitive accessibility hold the potential to improve attention, executive functions, knowledge acquisition, communication, perception and reasoning. Furthermore, improving the capacity to decode and use brain signals will help to accelerate the development of solutions for people with communication disorders.

Projects should address the following impact criteria and provide appropriate metrics

For a)
• Improved communication and interaction capability of people with disabilities and facilitate social innovation;
• More affordable technologies and products that support interactions for people with disabilities;
• New generation of services that are highly adaptable and personalisable to individual contexts;
• New approaches to brain computer interfaces.

For b)
• Easier and more cost effective assessment of web accessibility requirements, at scale.