Big data PPP: privacy-preserving big data technologies

Research and Innovation actions will advance the state of the art in the definition of methods that will support protection of personal data for harvesting, sharing and querying data assets. The personal data protection methods shall be implemented in secure and robust software modules and be exposed to publicly administered penetration/hacking challenges, open to participants the world over. Cross-disciplinary consortia are required to conduct legally and methodologically sound field work and coordinate with the CSA to determine i) if the various formal notions of personal data protection implemented are consistent with EU legislation and with the ethical intuitions of the EU citizens such methods are designed to protect; ii) to what extent privacy protection measures can be personalised in a way that remains intelligible to the data subject while remaining consistent with EU legislation. The diversity (e.g. in terms of age, sex, gender, socio-economic class) of data subjects should be taken into account, as appropriate. The data experimentation and integration projects (ICT-14) are likely to provide real-world challenges and data to validate the privacy-preserving technologies. The Commission considers that proposals requesting a contribution from the EU of between EUR 2 and 4 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Coordination and Support Actions will complement the research by exploring the societal and ethical implications and provide a broad basis and wider context to validate privacy-preserving technologies. The CSA is expected to liaise with a broad and multidisciplinary community of stakeholders (including public administrations, research community, companies, civil society, citizens) to advise the research and innovation in privacy-preserving (Big) Data technologies, promoting an integrated societally and ethically valid approach. Another task is to observe, map and report on ethical and Responsible Research and Innovation
(RRI) issues in the field of Big Data, including technology, research, markets and education. The action is expected to organise networking, awareness-raising and consultation among its communities, connect with the technical RIAs to inform their thinking and issue reports, analyses and recommendations. The Commission considers that proposals requesting a contribution from the EU of about EUR 1 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. No more than one action will be funded.

In view of privacy considerations, businesses are often unsure about how to deal with the data collected through their operations. This data is of particularly high value to companies for offering personalised services or developing new business models. Data subjects (citizens, consumers) often feel that they have no control over the use of their personal data. This is aggravated by uncontrolled exploitation, aggregation and linking of personal data by large corporations and advertisers. The resulting lack of confidence undermines efficient and legitimate data sharing and value creation for agreed purposes. The challenge is to develop technologies that are inherently privacy-preserving and offer the basis for empowering the data subjects to understand and be informed of (and, where appropriate, control) the use of their personal data, and the entrepreneurs to develop and run their data driven business.

**a. Research and Innovation actions**

- Substantial improvement of technologies for data access, processing and analysis to better protect consumer and personal data and respect security in line with existing and future EU rules on the protection of personal data, and as measured in terms of improved confidence and satisfaction of data subjects by the end of 2020;
- Substantial improvements towards creating a secure environment for data access, process and analysis, demonstrated in the use situations that arise in the data experimentation/integration projects (ICT-14).

**b. Coordination and Support action**

- Appropriate consideration and attention towards an ethically sound approach to big data processing, and effective involvement of the relevant actors and stakeholders;
- Improving the dialogue between data subjects and Big Data communities (industry, research, policy makers, regulators), thereby improving the confidence of citizens towards Big Data technologies and data markets.