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BDVA response to Horizon Europe First Strategic Plan Consultation

Introduction

BDVA welcomes the possibility to provide feedback to the open consultation for the First Strategic Plan of the Horizon Europe Programme and specifically to support the European Commission's strategic planning process for Pillar 2 - Global Challenges and Industrial Competitiveness area. **BDVA considers that all the clusters falling under this pillar, and not only Cluster 4 on Digital, Space and Industry, can enormously benefit from the research and innovation activities which are carried out under the current [Big Data Value Partnership](#) and which will continue under the upcoming [AI, Data and Robotics Partnership](#).** Furthermore, the work delivered by BDVA's Task Forces, and especially by all sectorial groups under [Task Force 7 – Applications](#), can help establish bridges between horizontal AI and Data innovation and vertical/sectorial needs and developments. For each of the Clusters of Pillar 2 (and more in details for Cluster 4), this document provides some feedback to the European Commission in order to highlight synergies between Partnerships and research activities which can be exploited under Horizon Europe and to suggest ways in which Data and AI can support the achievement of the desired impacts.

Cluster 1 – Health

AI, Big Data technologies and Robotics, access to data, data infrastructure, data sharing, data quality, data privacy and protection, trustworthiness and ethical aspects linked to AI and Data, bring common research and innovation challenges to the overall cluster 1 and associated impact areas. BDV PPP projects such as [MyHealthMyData](#) (working on health data marketplaces empowering patients as primary owners of their personal data) and [BigMedilytics](#) (improving the use of Big Data in healthcare to achieve breakthrough productivity) already contribute to address some of these challenges. Nonetheless, further research on AI and Data technologies is needed in the specific context healthcare and health in order to develop key data and AI driven healthcare applications such as remote diagnostic and monitoring, which will contribute to realise the desired impacts falling under cluster 1. BDVA, main promoter of the AI, Data and Robotics Partnership, runs a very active working group (TF7.Healthcare) that has developed whitepapers and guidelines in this area. Strong collaboration in between the AI, Data and Robotics partnership, and all the associated partnerships to cluster 1 (and especially the European Partnership for Innovative Health, the Partnership on Health and care System Transformation and the Partnership on Rare Diseases) is expected to accelerate value creation in all the impact areas.

Cluster 2 - Culture, Creativity and Inclusive Society

Research on AI and data driven technologies has the potential to support Culture, Creativity and the development of Inclusive Societies. Democracies face the challenge of promoting trust in democracy and institutions within an increasingly digitized and polarized society while also ensuring that AI and data driven solutions are inclusive and do not discriminate amongst citizens. In this domain, BDVA's work has focused particularly on media: its dedicated Task Force has been working on the link between trust and media in a data driven and information overloaded society. The creation of a shared (trusted) data space for fact checking networks is an example of how BDVA work on Big Data and AI technologies and the priorities of this cluster can converge. The role of Data and AI technologies and the work of BDVA is however not confined to media only. The digitisation of EU cultural heritage and the

delivery of evidence driven and fair policy solutions to citizens are other areas in which synergies between the Big Data ecosystem and Cluster 2 can be exploited. In this context, the Big Data Value Partnership already funds projects such as [Fandango](#), aiming at supporting traditional media industries to face the new “data” economy and e-Sides, involving the full Big Data value chain and its stakeholders into a common ethical approach to Big Data processing and ultimately enhancing the confidence of citizens towards these technologies.

Cluster 3 – Civil security for society

AI, data and robotics technologies will tremendously contribute to R&I in this pillar. They improve risk management in all domains, from crime prevention to terrorists’ attacks mitigations, from climate related and extreme events to epidemiological risks. They play a key role in implementation of actions aimed at ensuring the free flow of persons and goods. Use of Data and AI solutions for tackling terrorism and addressing crime has been exponentially increasing and new opportunities and challenges arise. Finally, solutions relying on AI to fight cybercrime are booming and the protection of protection of data and networks remains a key priority. Projects funded under the Big Data Value Partnership already work on laying the ground for further innovation in these areas, for instance by providing horizontal solutions i.e. for efficient distribution of big data workloads along the compute continuum or by empowering users to easily use big data technologies. Furthermore, the PPP funds domain specific projects: [ExtremeEarth](#) strengthening capabilities to predict environmental extremes and their impacts and [AEGIS](#), creating an interlinked “Public Safety and Personal Security” Data Value Chain. Further research synergies could be exploited under the upcoming AI, Data and Robotics Partnership via collaboration with stakeholder communities working on risk management, anti-terrorism, trade and cybersecurity. The future PPP can count on BDVA solid relation with the ECSO.

Cluster 4 – Digital, Industry and Space

Impact 1: Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures

AI, Data and Robotics contribute to decreasing energy consumption and improving logistics in industrial process (i.e. Platoon Project, deploying distributed technologies for real-time energy system management). Research is needed for the development of less energy consuming data centres (i.e. [E2Data project](#)). BDVA will establish soon a Task Force in this domain. The upcoming AI, Data and Robotics PPP will collaborate closely with Processes4Planet PPP through BDVA relationship with A.SPIRE.

Impact 2: Globally attractive, secure and dynamic data-agile economy

Data enables innovation and data flows link together the value chains disrupted by new technologies services and tools, where new skills, business models and infrastructures are needed. The data governance models and issues such as data access, data sovereignty and data protection are an important factor in the development of a globally attractive, secure and dynamic data-agile economy. The work carried out by the BDV PPP will constitute a stepping stone for the achievement of this impact.

Impact 3: Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials

Europe must not only improve the maturity of key digital technologies in the abovementioned sectors but should also focus on scaling their integration. In this context, Data and AI driven technologies play a key role as enablers of cross-sectorial and cross-domain integration. Many of the current projects funded under the Big Data Value PPP contribute to achieving this impact (i.e. [Musketeer](#), [BigDataStack](#), [Boost 4.0](#)) and more will come under the AI, Data and Robotics PPP.

Impact 4: Sovereignty in digital technologies and in future emerging enabling technologies

European sovereignty in digital technologies can be achieved through strengthened integration of digital technologies research agendas and communities. The exploitation of synergies and the construction of bridges between technologies are a pre-condition for Europe to become a leader in existing and future emerging areas.

The upcoming AI, Data and Robotics Partnership will seek to establish bridges and connections aiming at the integration of all technologies and exploitation of synergies.

Impact 5: Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

AI/data/robotics technologies are needed in Space sector, for example, in the design of future satellites, to perform future space operations or process data generated by Earth Observation, meteorological and positioning satellites. Also, telecom satellites are essential in 5G networks, serving areas where it is difficult and/or very expensive to deploy a ground infrastructure. Advanced space sector is indispensable in the daily lives of EU citizens, i.e. using cells, car navigation systems, etc.

Impact 6: A human-centred and ethical development of digital and industrial technologies

Building a human centered digital economy necessitates ethical concerns to be tackled at the research stage. The BDV PPP has funded several projects aiming at a) involving stakeholders/citizens directly in the development of solutions, b) finding solutions for data privacy and consent issues and c) including social sciences perspective in technology development. Projects of such kind will be funded in the upcoming AI, Data and Robotics PPP as ensuring EU values implementation remains a priority.

Final comments

The European Commission identifies Data as an essential resource for economic growth, innovation, job creation and societal progress. The role of data in Cluster 4 goes well beyond Impact 2: data is pivotal for achieving global leadership in clean and climate neutral value chain as well as industrial leadership, for gaining strategic sovereignty and autonomy and for establishing a human-centered digital economy. Without investing in R&I for addressing challenges such as data governance, data sharing, data privacy and data skills, the full realization of all these impacts is not possible. While many BDV PPP ongoing projects will contribute to address these challenges, further research will be needed and new challenges will arise that will be addressed under the AI, Data and Robotics Partnership. In this context, the realisation of common safe, trusted and scalable data sharing spaces is crucial. The main bottlenecks to this vision are of a business, legal and organisational nature. Europe will also have to strengthen its capacity to collect and process vast quantities of data through decentralized (edge) systems and powerful and complex computing infrastructures. The establishment of methods for ensuring data quality also remains a priority, together with the development of collaborative intelligence between humans and machines. For all these topics, the AI, Data and Robotics Partnership will act as focus point to concentrate R&I efforts and disseminate knowledge.

Cluster 5 – Climate, energy and mobility

R&I activities linked to climate, energy and mobility already benefit greatly from advances in data and AI technologies. Integration and processing of Data produced by different sensors and access technologies already play a pivotal role in different verticals and scenarios, like Smart Cities and Factory of the Future, and in the development of energy efficient and sustainable solutions for the mobility of the future, which will operate in a 3D environment (e.g., flying taxis).. Energy and transport are key sectors to which the BDV PPP projects already contributed. Projects like [Class](#) and [QROWD](#) (making mobility smarter across European cities) or [Elastic](#) (focusing on advanced mobility systems) show the synergies between these areas. BDVA Task Force on Mobility and Logistics also contributed to reflect on the role of data for mobility. Furthermore, energy projects such as [Platoon](#) will develop scalable energy management solutions that contribute to increased renewable energy consumption, smart grids management, energy efficiency and optimised energy asset management. BDVA will establish an Energy Task Force to further progress on this area. In the future AI, Data and Robotics Partnership, energy and mobility will be two key application areas and the Partnership will collaborate with all the candidate partnerships

working in this domain, i.e. the Partnership on Connected and Automated Driving and the Partnership on driving urban transitions to a sustainable future.

Cluster 6 - Food, Bioeconomy, Natural Resources, Agriculture and Environment

One of the essential aspects for this Cluster to achieve its impacts is guaranteeing a multi-actor approach, ensuring that the voice of the supply and demand are heard. It is particularly important that farmers are involved in the creation of new systems and platforms so that the value and risks of the technology are well understood and motivate well-informed investments. Progress has been done in data sharing through publication of guidelines like the code-of-conduct published by COPA-COGECA. BDVA is especially involved in the definition of Agricultural data Spaces and platforms that enable data sovereignty and maximum exploitation of data assets. Projects like [DataBio](#) but also [BigDataGrapes](#), [CloudButton](#), [Cybele](#) and [Extreme Hearth](#) show comprehensive use cases on how to use data to create value. In the future the convergence between technologies will be even more obvious and collaboration between data analytics, IoT, robotics and AI will be transparent. Projects like [AI4EU](#) already showcase this in its case of AI for Agriculture. The challenge is to ensure that solutions follow open standards that increase interoperability and foster vendor neutrality.

Conclusions

As this document suggests and as recognised by the European Commission in its Data Strategy¹, data is an essential resource for innovation and societal progress. The availability of quality data is also a pre-condition for the emergence of AI applications in all sectors. As such, Data should play a pivotal role across all Clusters of Horizon Europe, to foster innovation and to achieve the impacts identified by the policy makers. The upcoming AI, Data and Robotics Partnership will be the focal point for AI and Data R&I in the next years and collaborations with all other relevant Partnerships will ensure that synergies are exploited, and knowledge is spread. BDVA looks forward to continuing to highlight the importance of Data and AI research for Europe and to work with all other communities towards the achievements of the Horizon Europe's impacts.

About BDVA

The Big Data Value Association (BDVA) is an industry-driven international not-for-profit organisation with over 220 members all over Europe and a well-balanced composition of large, small, and mediumsized industries as well as research and user organisations. BDVA is the private counterpart to the European Commission to implement the Big Data Value PPP program. BDVA and the Big Data Value PPP pursue a common shared vision of positioning Europe as the world leader in the creation of Big Data Value. BDVA is also a private member of the EuroHPC JU and one of the main promoters and driving forces of the AI, Data and Robotics Partnership planned for the MFF 2021-27. The mission of the BDVA is "to develop the Innovation Ecosystem that will enable the data-driven digital transformation in Europe delivering maximum economic and societal benefit, and, achieving and sustaining Europe's leadership on Big Data Value creation and Artificial Intelligence". BDVA enables existing regional multi-partner cooperation, to collaborate at European level through the provision of tools and know-how to support the co-creation, development and experimentation of pan-European data-driven applications and services, and know-how exchange. BDVA maintains and fulfils a Strategic Research and Innovation Agenda (SRIA) for Big Data Value domain, contributes to the Horizon 2020 work programmes and calls for proposals and it monitors the progress of the BDV PPP (BDVA is in charge of producing the Monitoring Report of the whole programme). BDVA manages over 25 working groups organised in Task Forces and subgroups, and tackling all the technical and non-technical challenges of Big Data Value. BDVA has developed, together with euRobotics, the two consultation versions of the SRIDA (Strategic Research, Innovation and Deployment Agenda) for AI, Big Data and Robotics Partnership.

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¹ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy_en