## Response to the UN High-Level Panel on Digital Cooperation Call for Contributions

**January 2019**

The National Physical Laboratory (NPL) is a world-leading National Measurement Institute and is responsible for measurement strategy and delivery in the UK.

We conduct high-quality measurement science and provide products and services that enable businesses and public organisations to make reliable measurements and have confidence in the decisions they make based on the results. We support businesses to innovate, improve productivity and grow and enable public organisations to protect and improve the quality of life of the public.

Measurements and standards are key to an effective digital infrastructure; NPL works towards embedding measurement into processes using digital and data science to deliver confidence in the intelligent and effective use of data.

1. **Values & Principles:**

A) **What are the key values that individuals, organizations, and countries should support, protect, foster, or prioritize when working together to address digital issues?**

When addressing the digitisation of data and processes, it is essential that the needs of the individuals in the systems are well represented. Individuals need to be confident in the security of their data, especially personal information pertaining to health or finance.

It is important to ensure that all data is traceable and the provenance is well understood as the data moves between organisations and is combined with other data sources. It is vital that the provenance is traceable from the point of collection, through the connection, or transmission of the data and through any analysis or algorithms used to comprehend the data.

There needs to be a fairness of outcome. It is well documented that the needs of all are not always well represented by technologies, and this is in part to do with the demographics of the designers and engineers working on their development. Great care must be taken to ensure that there is not unintended bias built into systems.

B) **What principles should guide stakeholders as they cooperate with each-other to address issues brought about by digital technology?**

Standard good data practices including:

- the need for individual privacy.

- the consideration of the interoperability of data, can this data be reused where appropriate or help demonstrate reproducibility of results?

- the implementation and further development of standards and guidelines for data processing, tracking and use to ensure all data is Findable, Accessible, Interoperable and Reusable.

- ensuring there are opportunities for independent peer review of data sets and processes involved in the collection, interpretation and analysis of data.

**C) How can these values and principles be better embedded into existing private and/or public activities in the digital space?**

There needs to be wider consultation and engagement with the communities who will be using the data and whose data is being collected. Additionally there needs to be greater diversity in the user testing groups. It would help to have reference data sets for common tasks and standardised data formats.

**2. Methods & Mechanisms**

**C) What new or innovative mechanisms might be devised for multi-stakeholder cooperation in the digital space?**

Data analysis and access tools are developing rapidly. A key principle for future usage could be that the data always remains held by, and therefore controlled by, the original data owner. Third parties that wish to access or mine the data could do so through automated data tools, or workbenches, hosted by trusted organisations that are designed to seek permissions and perform analysis through federated or diverse data sets.

**3. Illustrative Action Areas**

**The Panel plans to explore, among others, the following areas where greater digital cooperation is required:**

- **digital trust and security**
- **building the capacity of individuals, institutions and governments for the digital transformation.**

**A) What are the challenges faced by stakeholders (e.g. individuals, Governments, the private sector, civil society, international organizations, the technical and academic communities) in these areas?**

Individuals and organisations want guarantees that their data is safe and will not be misused. A common issue faced is the need for the privacy and security of individual personal information thus ensuring that the information is suitably anonymised but can still be effectively used.

Ownership of data must be considered including what happens to data if organisations merge or one organisation is subsumed into another that has different objectives and priorities; for example a public organisation being taken over by a private company.

It is vital that data is traceable so that users further along the data stack can have confidence in the data and its provenance and also so that the original data owners can trace where their data has

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been shared, and limit access or usage that might be inappropriate. Companies using data want it to be reliable, they need to be confident that it is traceable, that they understand any transformational processes that the data has undergone and uncertainties associated with the data.  Understanding the uncertainty is vital to ensure the decisions based on the data are taken appropriately. Uncertainty may include accuracy, precision or even latency of the data.

Digital information must be stored securely, the volume of information will require significant investment in infrastructure. The data must also be reviewed, curated and maintained.

4. **Do you have any other ideas you would like to share with the Panel?**

It is important to encourage the uptake and use of guidance and standards that are already in place (British Standards Institution) as well as looking to identify where further standards and guidance is required.  Making data sharable and interoperable will require the development of international standards to define overarching as well sector specific ontologies to ensure that data and associated metadata can be machine readable between the many diverse organisations envisaged and to ensure, for example, that only the intended fields and data are shared.

When testing systems, for example with biometrics, it is vital that the technology is tested fairly with diverse user groups. The collection methods and the interpretation algorithms used need to be inclusive.

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