Summary of the DRUM (Digital Representation of Units of Measure) Initiative

Agreements about units of measure are of fundamental and far reaching importance for science (and of course for technology, industry and trade). It is essential to raise awareness about the need to support consistent, digital representation of units of measure. One of

> **DRUM aims to raise the profile of the digital representation of units of measure in research communities, representative and governing bodies and with funders.**

The landscape of units is complicated. The range of units used in different domains and across domains leads to complexity, confusion and - at worst - errors. There are a number of initiatives and activities and although these have great merit the landscape is becoming more complicated.

> **DRUM aims to build bridges and encourage cooperation between various significant initiatives, including the CIPM's Digital SI, QUDT, UCUM and others.**

FAIR encapsulates some important principles to better enable computer-facilitated scientific discovery and large scale data analysis. Interoperability and Reusability depend fundamentally on standardised definitions and digital representations of units, as well as machine-referenceable conversions. This in turn requires the mobilisation and the input of the scientific community and the various domains represented by the International Scientific Unions and Associations.

> **DRUM aims to facilitate and coordinate the engagement of ISUs/ISAs with the issue and to develop greater understanding of the use of units in different domains and the issues around definition, digital representation and conversion.**

DRUM intends the following outputs:

1. Activities to promote cooperation and coordination across initiatives, and in particular mobilising the input of the various scientific domains, as represented by the ISUs/ISAs.
2. A manifesto, endorsed by the ISC and the ISUs/ISAs calling for greater action and investment on the issue of units of measure (their definition, digital representation and conversion).
3. A publication or collection of publications describing the landscape of units and progress that can be made to facilitate coordination and machine applicability.
4. A collection of case studies from different domains highlighting challenges, making the case for coordination and presenting possible solutions.
5. Recommendations for the application of units of measure in metadata schema and code, building on existing good practices (starting with the DDI-Cross Domain Integration schema).