EUROPEAN COMMISSION
DIRECTORATE-GENERAL
JOINT RESEARCH CENTRE
Directorate F – Health, Consumers & Reference Materials
Consumer Products Safety Unit

January 2017

Dear User,

Data is one of the main topics under discussion within the nanomaterials scientific community. Indeed, up to now, the recording (logging) of experimental data produced in several projects has been insufficiently harmonised. Data (and knowledge) often remains linked to *ad hoc* file systems or templates generated for the only project they serve and, mostly, just for its duration. In the recent dialogue within the EU NanoSafey Cluster[1], it became clear how important the harmonisation of data logging it is to obtain fully exploitable data. This allows, among others, a better sharing, comparability and analysis.

One of the logics largely discussed for data storage and sharing is ISA-TAB-Nano[2]**.** It is a powerful way of storing data in a structured manner. It relates data to the protocols / standard operating procedures (SOPs) / methods that have been used to generate it. Still, low user-friendliness limits the applicability of ISA-TAB-Nano to a "laboratory environment". Hence, the EU-funded FP7 project NANoREG[3] has created a set of Excel® *templates* for use in the field by researchers. They are easily convertible to the ISA format with, for instance, spreadsheet parsers developed by the EU FP7 project eNanoMapper[4]. This collection of Excel® files is the result of a collective effort by many involved project partners until 30 September 2016.

The downloadable zipped archive contains three different zipped folders, one for each "module": physicochemical characterisation, mammalian toxicology *in vitro* and mammalian toxicology *in vivo*. The folders contain a series of Excel® workbooks templates named according to the *endpoint* they address, as per the OECD list[5] or other relevant endpoints. Sheets in a workbook denote the *technique(s) / assay(s)* used to measure a given endpoint. A technique / assay is described by a minimum and sufficient set of *experimental parameters* linked to the SOP used. The recorded parameters values, with the applied SOP, allow a (future) full comparison of the logged data values.

The data values to be recorded are the result of an in-lab prior processing of the raw data acquired from instrument(s). The templates are not intended for the logging of raw data. Data values and uncertainties are to be recorded while performing the experiments, in the section "*Results*" that is found in each Excel® sheet. The parameters are recorded in "*Method and instrument information*".

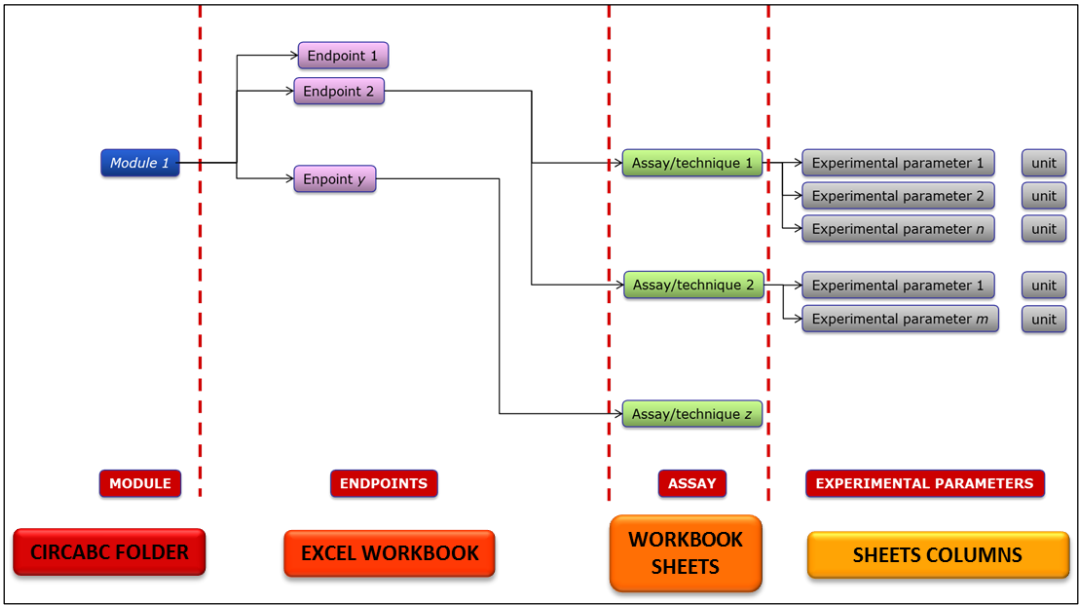
This work has been performed thanks to the contribution of the NANoREG partners, in the frame of the EU-funded FP7 project NANoREG, under Grant Agreement number 310584. It is publicly released in this format by JRC for the sole purpose of anchoring the file archive in literature via unique identifiers: see the box at the bottom of next page.

[1] http://www.nanosafetycluster.eu/
[2] Thomas et al. BMC Biotechnology 2013, 13:2 / https://wiki.nci.nih.gov/display/ICR/ISA-TAB-Nano
[3] http://www.nanoreg.eu/
[4] http://www.enanomapper.net/
[5] ENV/JM/MONO(2010)46 http://www.oecd.org/officialdocuments/displaydocument/?cote=env/jm/mono(2010)46&doclanguage=en
[6] https://creativecommons.org/licenses/by-sa/4.0/

EUROPEAN COMMISSION
DIRECTORATE-GENERAL
JOINT RESEARCH CENTRE
Directorate F – Health, Consumers & Reference Materials
Consumer Products Safety Unit

Definitions and terminology used in the templates

Module: the field of investigation. 3 modules available: physicochemical, *in vivo* and *in vitro*.
Endpoint: according to the OECD list (or other relevant endpoint).
Assay: techniques, methods, assays carried out in a laboratory to measure a given endpoint.
Experimental parameters: list of descriptors used to record an assay. Each of them is linked to an error and measurement unit.
The terminology and partition tree reflect the ISA format logic.



Typical structure of the Excel®-based data recording templates developed by NANoREG for simple experimental data recording

For further support please contact: JRC-NANOTECHNOLOGY@ec.europa.eu .

How to cite: Totaro S. et al; Data logging templates for the environmental, health and safety assessment of nanomaterials; EUR 28137 EN; doi:10.2787/505397

Luxembourg: Publications Office of the European Union, 2017

JRC103178

EUR Number	28137 EN	Catalogue Number	LA-NA-28137-EN-N
ISBN	978-92-79-62614-2		
ISSN	1831-9424		
DOI	doi:10.2787/505397		