



NANoREG data logging templates for the environmental, health and safety assessment of nanomaterials

Data is a critical matter in 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 Cluster¹, 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 promising data storage and sharing logic is ISA-TAB-Nano². It is a powerful way of structuring and storing data. It relates data to protocols, standard operating procedures (SOPs) or methods that have been used to generate it. Yet, low user-friendliness limits the applicability of ISA-TAB-Nano in a "laboratory environment". Hence, the EU-funded FP7 project NANoREG³ has created a set of Excel[®] [templates](#) for use by researchers in the field. They are easily convertible to the ISA format with, for instance, spreadsheet parsers developed by the EU FP7 project eNanoMapper⁴. This suite 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 list⁵ or other relevant endpoints. Sheets in a workbook denote the *technique(s) / assay(s)* used to measure a given endpoint. Any 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.

Here, data values are the result of in-lab processing of the raw data acquired from instrument(s). The templates are *not* intended for the recording of raw datasets. Data values and uncertainties are recorded while performing the assay, in the "*Results*" section of the Excel[®] sheet. The parameters are recorded in "*Method and instrument information*" or "*Experimental/analytical parameters*".



The templates are free to use and alter under *Creative Commons – Share alike* license⁶. When publishing new work that relies on them as such, or after modification, please acknowledge the source: "*NANoREG templates*" and refer to the DOI (see 'how to cite' and the references box below).

The templates zipped archive can be downloaded [here](#).

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/>, "A common European approach to the regulatory testing of nanomaterials", EU FP7 grant agreement N° 310584

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](http://www.oecd.org/officialdocuments/displaydocument/?cote=env/jm/mono(2010)46&doclanguage=en)

⁶ <https://creativecommons.org/licenses/by-sa/4.0/>



This work has been performed thanks to the contribution of the NANoREG partners. It is publicly released in this format by JRC for the sole purpose of anchoring the templates archive in literature via unique identifiers: see the box at the bottom of this page.

Definitions and terminology used in the templates

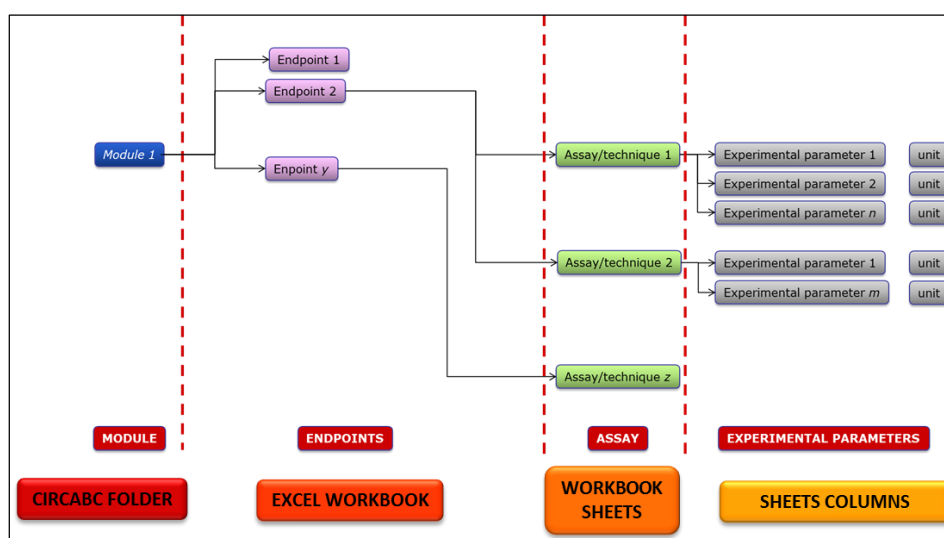
Module: the field of investigation. 3 modules are available: physicochemical, *in vivo* and *in vitro*.

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: recorded assay descriptors, with error value and measurement unit.

The terminology and partition tree reflect the ISA format logic.



Structure of the NANoREG Excel®-based templates for easy experimental data recording

The templates zipped archive can be downloaded [here](#).

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

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