



A common European approach to the regulatory testing of nanomaterials

**EuroNano Forum 2015, Riga, Latvia
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Joint seminar on NanoSafety**

TNO – NANOREG Database for Safe by Design

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TNO innovation
for life ■



Aim of D6.5 Inventory of impact of phys chem properties on (eco)toxicological endpoints

- to develop an inventory of impact of physical chemical properties on (eco)toxicological endpoints.
- The physical chemical parameters in this inventory will be used for the identification of a “safe(r) window” of (eco)toxicological parameters. This “safe window” will be used for the development of a safe by design decision tree (deliverable 5.6).

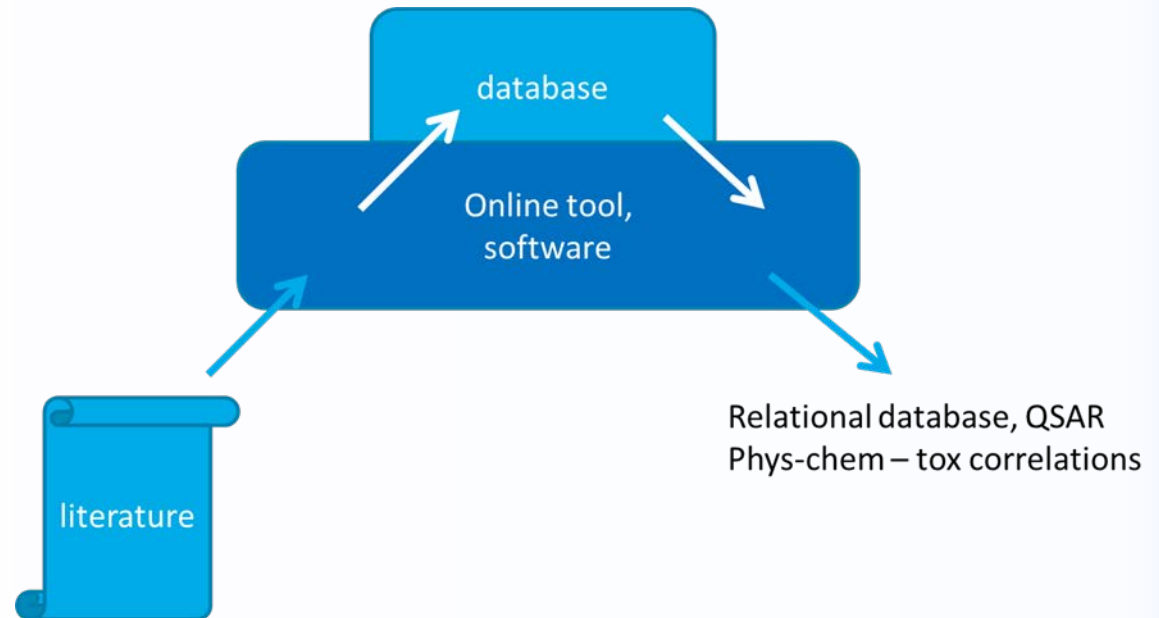
Why develop a new database and tool?

Several initiatives exist: NMR, ISA-Tab, JRC hub, Modena CA etc.

- Time
- Prioritization
- Availability
- Actual database
- Compliance with NANoREG minimum requirements
- Cooperation with eNanoMapper project ensures the sustainability of the data

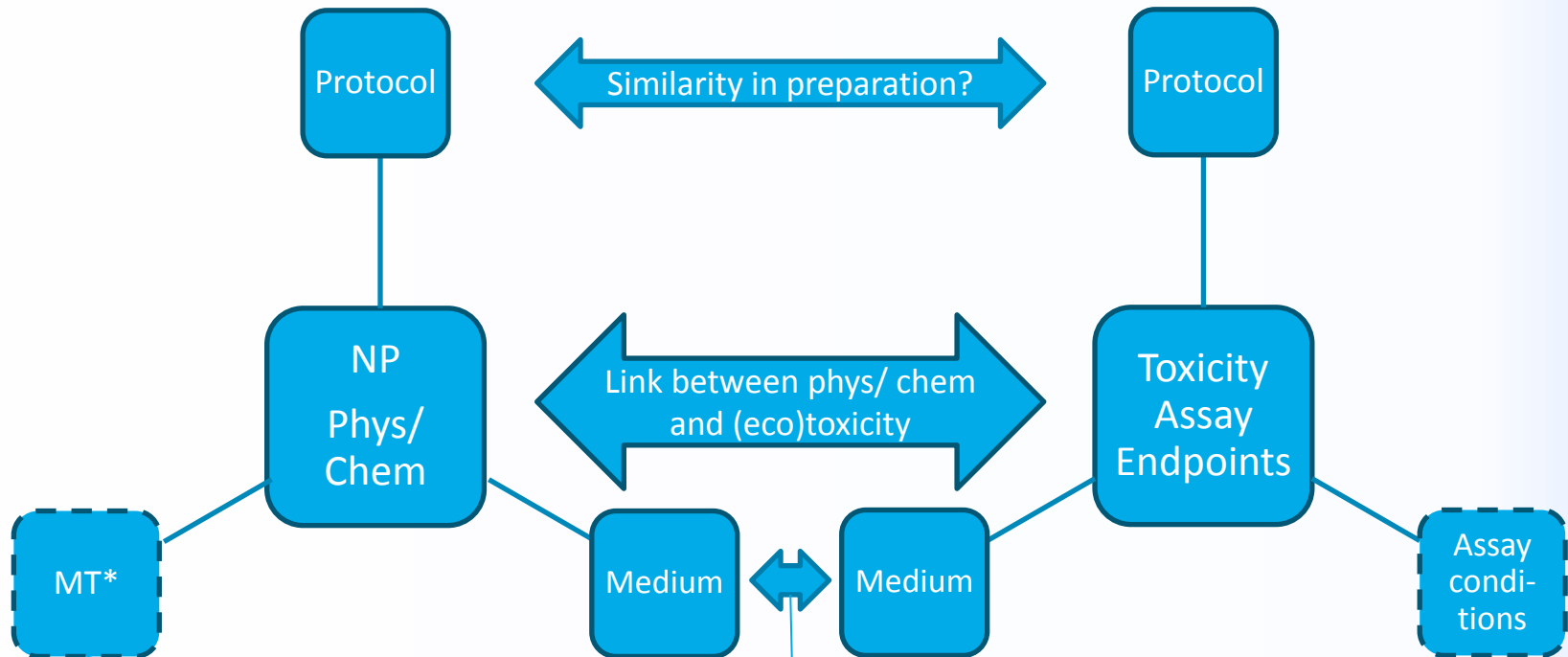


- Database structure
- Entry Tool
- Some Results
- eNanoMapper collaboration



Goal

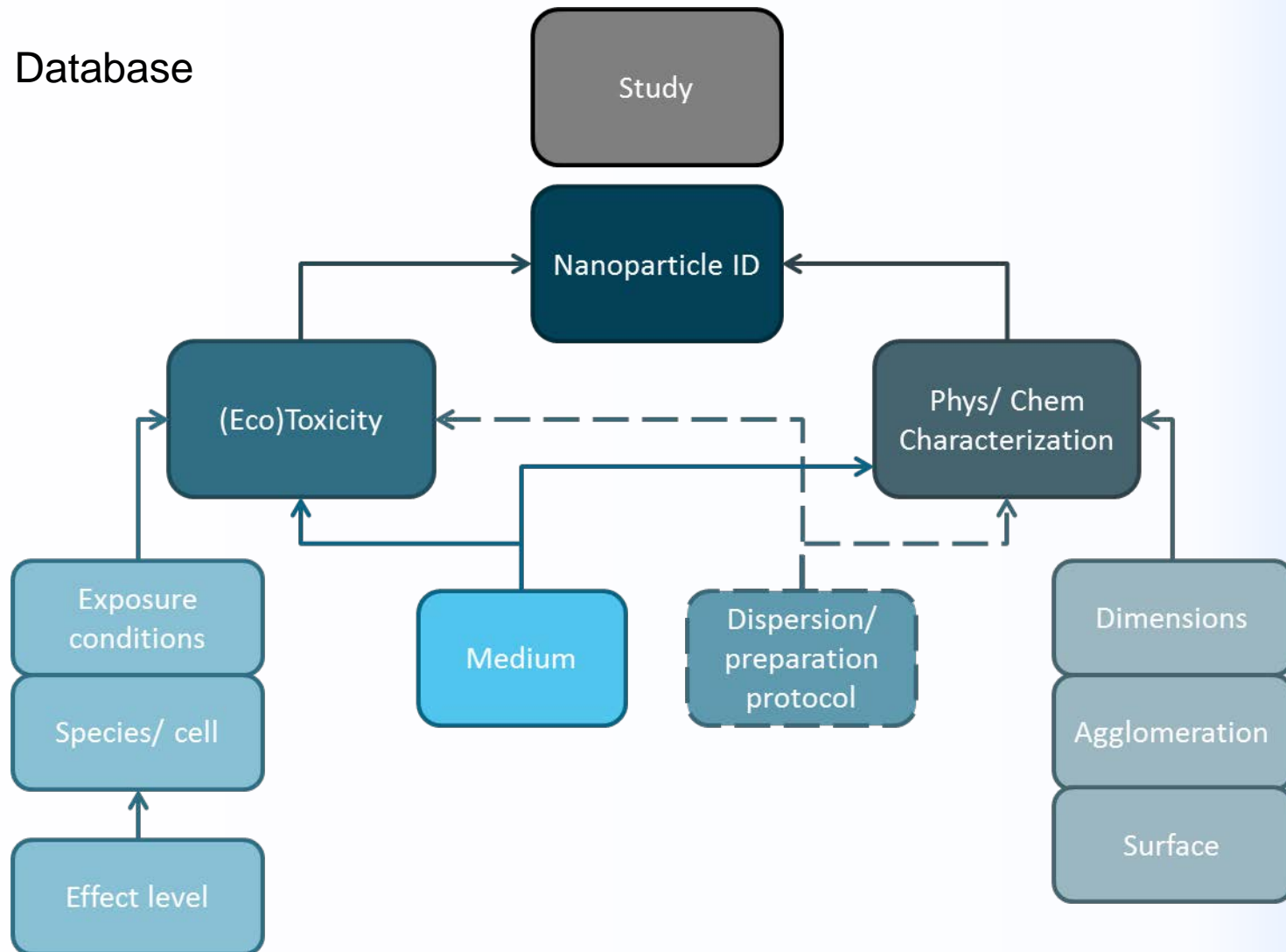
An inventory linking physical chemical characteristics of nanoparticles to (eco)toxicological endpoints extracted from public literature



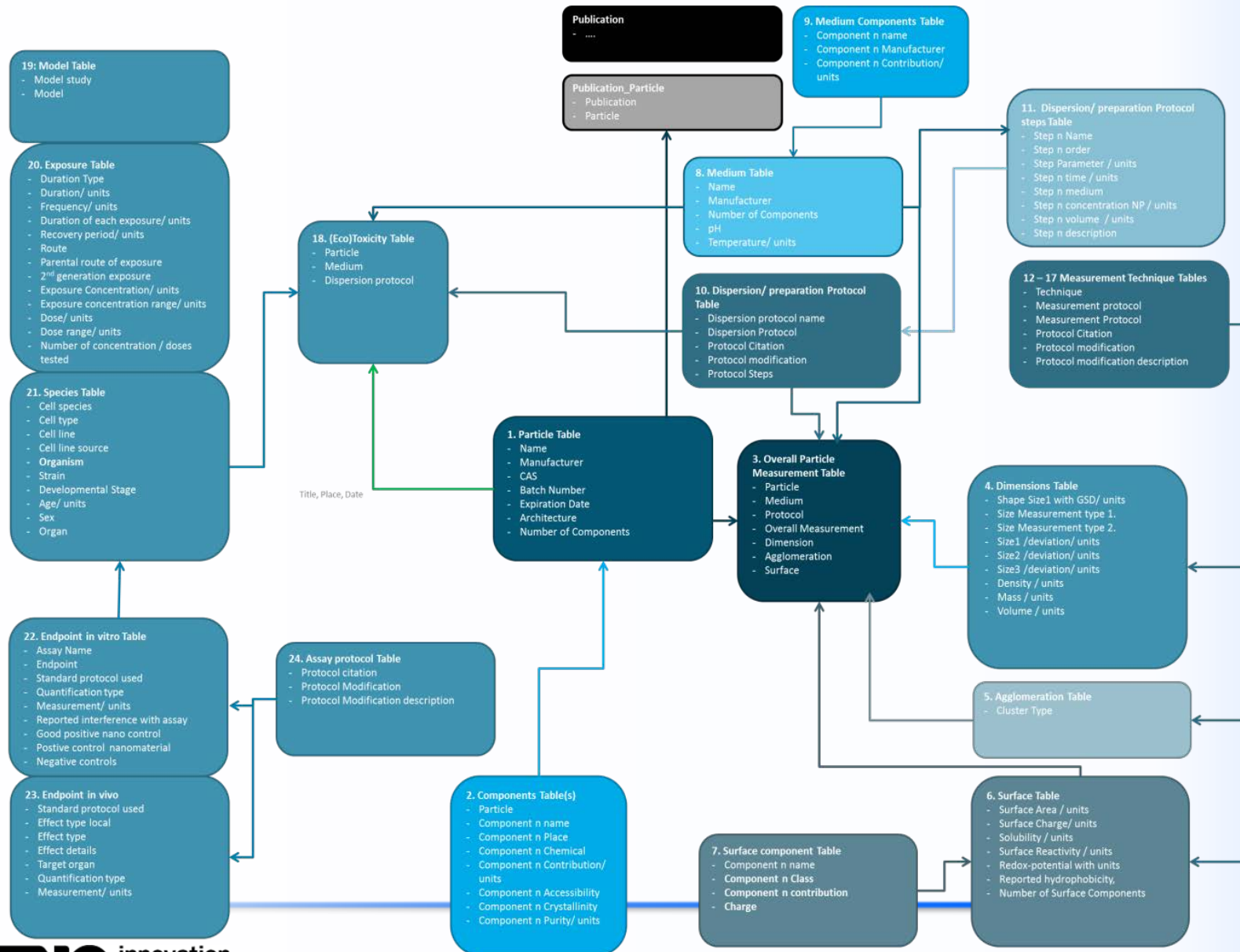
* Measurement Technique & parameters

Similarity in medium conditions?

Relational Database



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Username:

Password:

I accept the [terms and conditions](#)

You are logged out.

Home Contact




Welcome to the [HomePage](#) of the **NANOREG** Website. This website has been developed by [TNO](#) within workpackage 6 of the NANOREG project, which is funded by the EU framework 7 Program. This website is the portal to workpackage 6 TNO-NANOREG Database entry tool. This tool can be used to prioritize publications, enter data from publications and browse the data

Within WP6 of the NANOREG project a set of physicochemical properties that are related to the (eco)toxicity of nanomaterials is identified for the purpose of the safe(r) design of nanomaterials. For this purpose a tool to store information from public literature into a relational database has been developed. The database contains fields on toxicity/ eco-toxicity and physical chemical characterization of nanoparticles.

To goal of the data collection is to identify a set of physicochemical properties that are related to the (eco)toxicity of nanomaterials. Previously, to this end, TNO has developed a relational database that contains information on nanomaterial's physicochemical characteristics and (eco)toxicity. This information can be used to identify physicochemical properties related to the fate and toxicity of nanomaterials, develop structure-activity relationship (SAR) models, derive grouping principles and contribute to the development of a safe by design strategy (deliverable 6.6 of the NANOREG project) by defining a "safe window" of (eco)toxicological parameters.

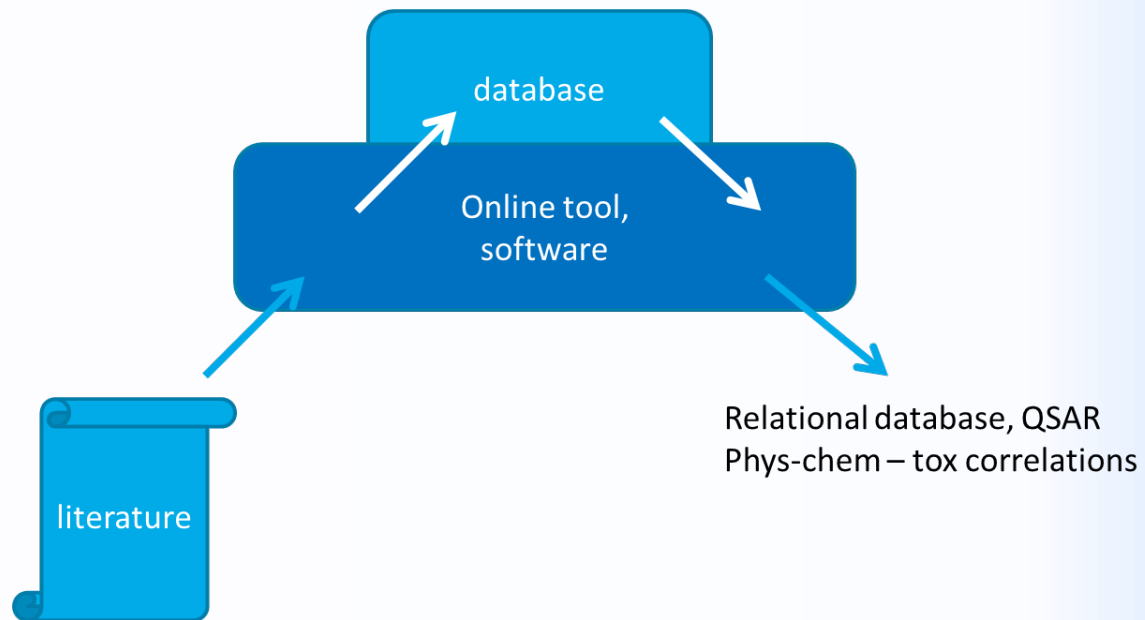
The relational database is filled with information retrieved from peer reviewed scientific literature and for the purpose of data entry, a software tool has been developed within the NanoReg project, to enable the data entry process in a consistent manner. The database includes 3 types of data on nanomaterial characteristics and toxicity:

- parameters that define the intrinsic characteristics of nanomaterials
- measurement on nanomaterial properties under specific conditions
- in vitro and in vivo (eco)toxicity endpoints

© 2015 - NANOREG Publication and Particle data entry tool has been developed by 

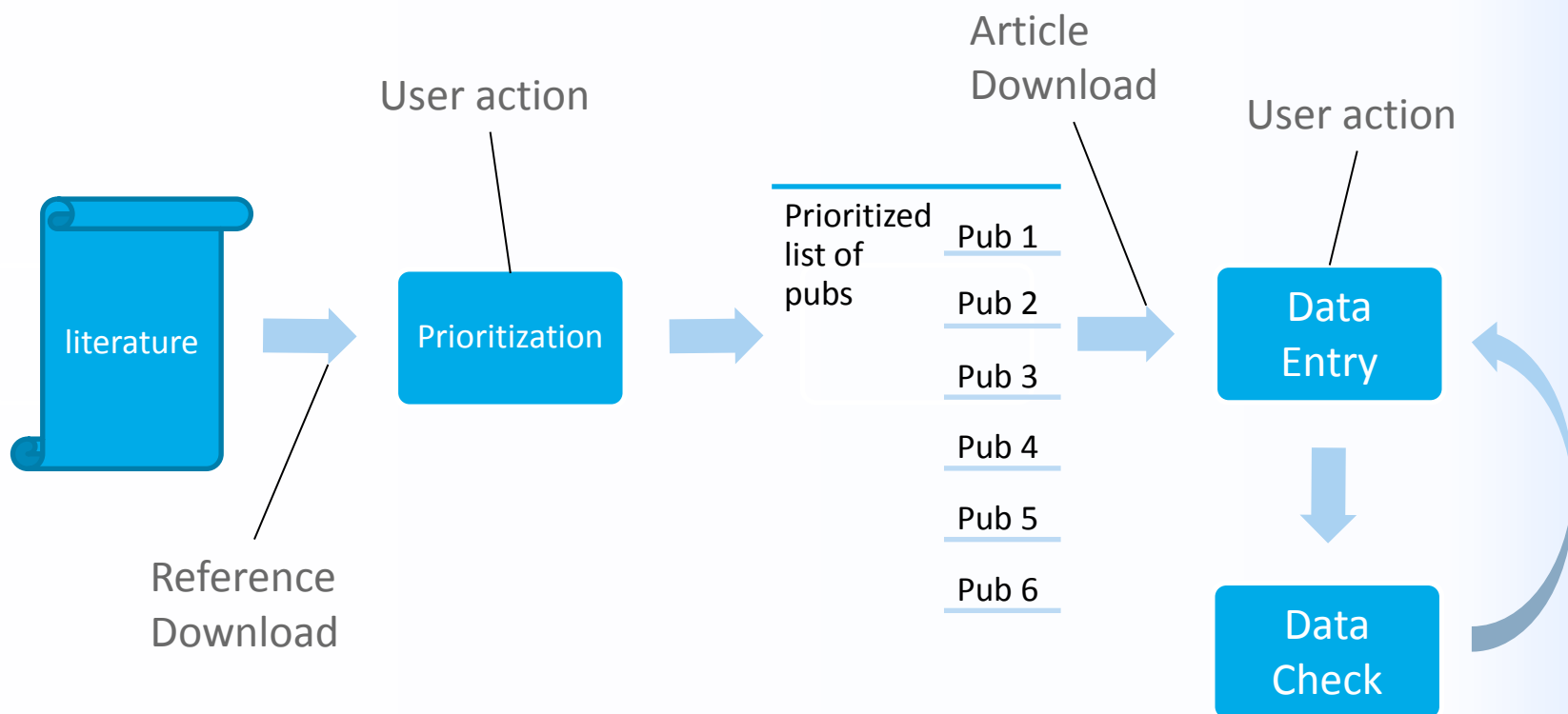
Entry Tool: Information flow

- Develop entry tool
- Prioritize and select literature
- Extract and Enter data
- Quality Check
(Query searches and analysis)



Entry Tool: Information flow

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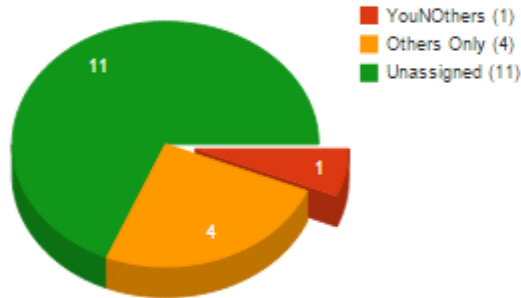




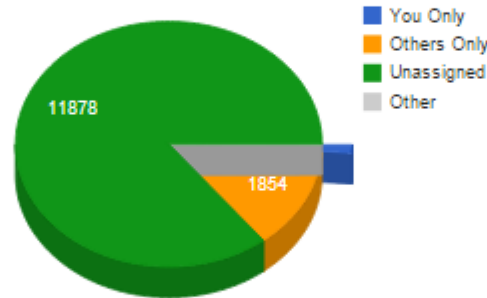
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Home **Status** Prioritization Data Entry Ontology Query Help

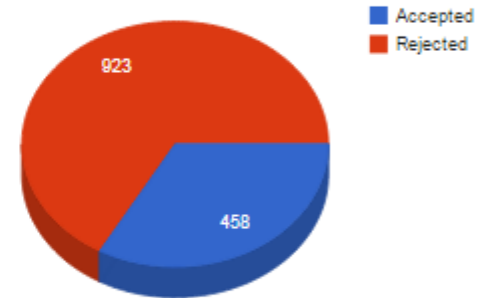
Assigned Queries (total:16)



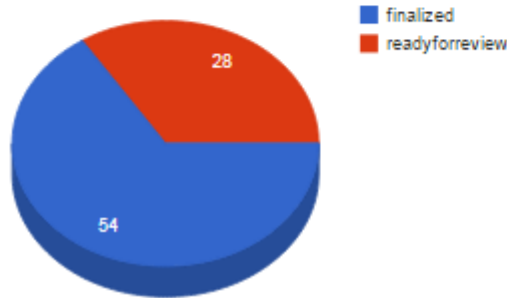
Assigned Publications for Prioritization (total:13877)



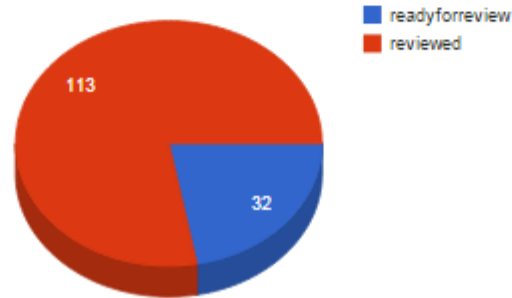
Accepted/Rejected Papers (total:1381)



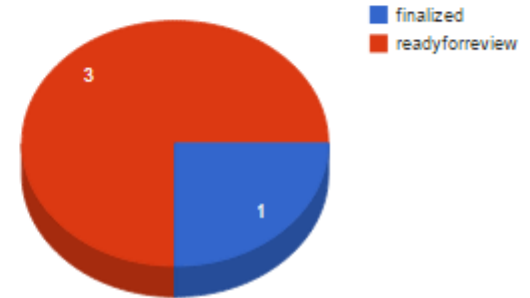
Status Data Entry Papers (total:82)



Your Prioritization Papers (total:145)

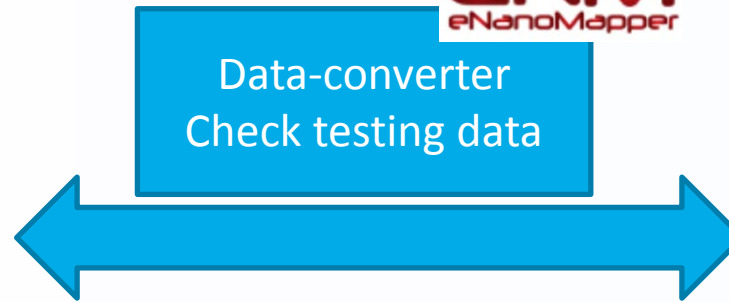
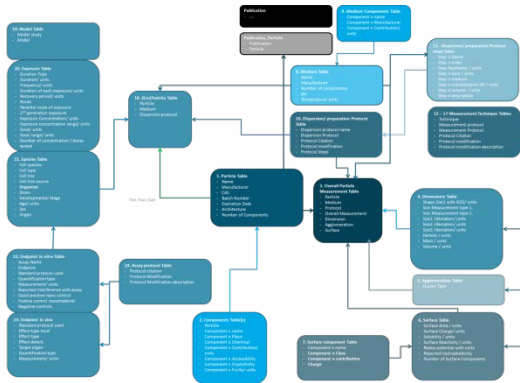


Your Data Entry Papers (total:4)



Method

TNO-NanoReg Database



Check for:

- Overlap
- sustainability of essential data
- Loss of data

Existing online ontologies terms and tables

All	Ontology	Source	Name	Laatste geslaagd
S		W		
			BAD	3 dagen 1 uur - #51
			EFO	3 dagen 1 uur - #100
			CHEBI	3 dagen 1 uur - #38
			CHEMINF	3 dagen 1 uur - #50
			ENVO	3 dagen 1 uur - #83
			IAO	3 dagen 1 uur - #86
			NEO	3 dagen 1 uur - #54
			QAE	3 dagen 1 uur - #25
			QBI	3 dagen 1 uur - #28
			PATO	3 dagen 1 uur - #49
			Slimmer	3 dagen 1 uur - #104
			UO	3 dagen 1 uur - #76



Similar initiatives of ENM with other ontologies (such as ISA-Tab) will allow the conversion of data from the TNO-NanoReg database to these ontologies

Thank You

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Adrienne Sips



*Sonia Manzo
Simona Schiavo*



*Fern Wickson
Eltemsah Yehia*



*Maria Dusinska
Evy Sivesind
Lise Fjellsbø*



*Federico Benetti
Christian Micheletti*



*Virginie Heidweiller
Neil Mutsaers*



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