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**Project acronym:** ONTOX

**Project title:** ontology-driven and artificial intelligence-based repeated dose toxicity testing of chemicals for next generation risk assessment



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## 1. Introduction and objectives

Identifying target audiences is critical for planning and executing optimal communication, dissemination, and exploitation strategy. To achieve the desired impact, build awareness and foster two-way information exchange, ONTOX has developed (and will regularly update) targeted dissemination and communication plan to reach specific audiences and subgroups (further mentioned as the target audiences).

This report details the principles, which shaped the **dissemination and communication strategy** towards identified **target audiences**. The approach is built on three pillars:

1. Identification of key and core project messages/statements to be communicated/disseminated.
2. Definition of target audiences and adaptation of ONTOX messages and to each audience.
3. Selection of the tools and channels to effectively communicate/disseminate the audience-adapted messages and outcomes to reach the best impact.

## 2. Results

### 2.1. Identification of the key and core project messages to be communicated/disseminated

The **ONTOX key statements** are based on the core concepts that underpin the ONTOX approach. These are considered introductory messages that are particularly valuable as entry points to disseminate to external audiences what ONTOX is about and what makes the ONTOX joint effort different and innovative.

#### The ONTOX “key statements”

- The vision of the ONTOX consortium is to provide a functional and sustainable solution for advancing human risk assessment of chemicals without the use of animals in line with the principles of 21st century toxicity testing and next generation risk assessment (NGRA).
- The overall goal of ONTOX is to deliver a generic strategy to create innovative new approach methodologies (NAMs) to predict systemic repeated dose toxicity effects of chemicals that, upon combination with tailored exposure assessment, will enable human risk assessment.
- ONTOX provides a fully functional and sustainable solution for advancing human risk assessment of chemicals leading to better protection of human health without the use of animals.

The following statements (**core messages**) expand the key statements and can be used for follow-up communication activities. They provide coherent messages to the target audiences. The core messages are summarised below:

1. ONTOX aims to provide a unique and highly structured approach to integrate the currently available NAMs into predictive ontology frameworks.
2. ONTOX aims to develop an innovative mix of approaches and tools that should become the standard for the 21st century risk assessment of chemicals.

3. The methodological cornerstone of ONTOX is artificial intelligence (AI) applied to relevant heterogeneous (big) data from various sources.
4. The ONTOX NAMs are intended to fill out gaps identified by AI and big data analysis.
5. ONTOX aligns with the next generation risk assessment (NGRA) principles, a safety evaluation approach centred around a hypothesis on a biological mechanism and driven by exposure considerations, which integrated NAMs and AI to ensure human risk assessment of chemicals.
6. ONTOX will deliver a set of NAMs to perform chemical hazard prediction and human risk assessment. These NAMs optimally combine the most relevant cutting-edge developments in research and technology to move beyond the current state-of-the-art.
7. ONTOX implements the 21st-century toxicity testing vision, replacing animal testing with *in vitro* assays and *in silico* tools (computer-based approaches).

The summary of the ONTOX aims, to be communicated to different target audiences, is listed below. The ONTOX project goals are :

1. To generate ontologies for systemic organ-specific repeated dose toxicity testing by collecting data, mainly already available information, from the biological, toxicological, chemical and kinetic domains.
2. To develop, optimise and apply artificial intelligence for data collection, integration and prediction of chemical hazard.
3. To implement the developed NAMs in daily risk assessment practice in different chemical sectors.
4. To set up batteries of *in vitro* assays and *in silico* tools to fill data gaps and assist the artificial intelligence system in predicting systemic, repeated dose toxicity effects of chemicals in the liver, kidneys and developing brain.
5. To support transparency, interpretability and sustainability by re-using quality-assessed data and generating novel data that are readily findable, accessible, interoperable and re-usable.
6. To collaborate with industry and regulatory agencies to develop impact as well as to secure end-user acceptance and regulatory confidence.
7. To trigger innovation and competitiveness by identifying commercialisation opportunities.
8. To train end-users, mainly in industrial settings, and regulators to apply the developed NAMs.

These core communicative elements will be turned into targeted “elements” for specific audiences as the project progresses to further stages. ONTOX will embody these different elements with clear examples in the second year of the project. The developed NAMs and other practical outputs will be reflected in customising the messages disseminated to relevant target groups. The communication and dissemination strategy will take into account the geographical coverage (local, regional, national, EU, worldwide)

## 2.2. ONTOX target audiences

Identifying and segmenting the target audiences of a project represents one of the most essential steps in developing a communication strategy. It is a critical process that ensures that the messages and practical outputs of the ONTOX project will reach the most relevant groups and a broad society. At this stage, the ONTOX project has identified the following **target audiences and subgroups**: academia, industrial end-users, policymakers and regulators, public and private investors and the general public (for details, see Table 1).

Table 1: The ONTOX target audiences and sub-groups.

<b>TARGET AUDIENCES</b>	<b>SUBGROUPS</b>
<b>Academia</b> Typical knowledge owners/developers	<ul style="list-style-type: none"> <li>• Universities</li> <li>• Research institutes</li> <li>• Higher education institutions</li> <li>• Academic innovators (individuals owning ideas/solutions)</li> </ul>
<b>Industrial end-users</b> Direct beneficiaries of the project	<ul style="list-style-type: none"> <li>• Start-ups</li> <li>• SMEs</li> <li>• Large industry adopting direct outcomes of the project</li> <li>• Industrial innovators (individuals owning ideas/solutions)</li> </ul>
<b>Policymakers and regulators</b>	<ul style="list-style-type: none"> <li>• Political parties, MEPs</li> <li>• European Commission, DGs</li> <li>• Sectorial stakeholders</li> <li>• Regulatory bodies</li> <li>• National and international agencies</li> </ul>
<b>Public and private investors</b>	<ul style="list-style-type: none"> <li>• EU funds and other financial policy instruments of the EU</li> <li>• International, national and regional public and private funding schemes</li> <li>• Industries benefiting from future investment and development of ideas generated but not yet exploited by the project</li> </ul>
<b>General public</b>	<ul style="list-style-type: none"> <li>• Citizens interested in the scope of the project</li> <li>• EU Citizen initiatives</li> <li>• Other public/private initiatives</li> </ul>

The above mentioned target groups and sub-groups will be addressed and involved at different levels and in various stages of the ONTOX project. The dissemination and communication activities will be designed to meet the optimal form and content of the message for the subgroups. The ONTOX communication and dissemination plan will regularly be updated to facilitate the delivery of the key messages and outputs of the consortium via the most appropriate channel(s). A mix of different communication channels/tools will be used to maximise the impact of ONTOX on the subgroups (see section 2.3).

### 2.2.1. Analysis of the consortium's internal abilities to effectively approach the target audiences

The **ONTOX consortium** partners and their usual **target audiences** are presented in Table 2. As an initial step in creating the communication and dissemination plan, a comprehensive internal document named “Who is who” has been elaborated, which helps the ONTOX communication and dissemination team identify partners and individuals capable of effective communication. As a second step, the communication and dissemination team analysed the involvement of the individual participants in the organisations and committees towards the target audiences. The communication team posted a questionnaire to the consortium members about their readiness and ability to contribute to the dissemination and communication activities. More than 50% of the respondents answered positively.

Members of the **ONTOX Scientific Advisory Board (SAB)** (see Figure 3), representing regulatory, academic and industrial segments, will also support the communication and dissemination activities to the target groups. The target audiences and the communication parties will be revised and further segmented in the annual review of the activities outlined in the communication and dissemination plan (May 2022).

Table 2: The constellation of the ONTOX partners.

<b>PARTNER (COUNTRY)</b>	<b>PARTNER TYPE</b>	<b>TARGET AUDIENCE</b>
VUB (Belgium) UL (Belgium) UV (Spain) HU (Netherlands) UM TGX (Netherlands) UU (Netherlands) JHSPH (USA)	University	<ul style="list-style-type: none"> <li>Academic end-users</li> <li>National and international agencies</li> <li>The general public, interested in science</li> </ul>
ALTER (Belgium) 3RSMC (Denmark) ESQ (Germany) MN (Germany) PROTO (Spain) BAYER (Germany) TT (USA)	SMEs/Large Industry	<ul style="list-style-type: none"> <li>Industrial end-users</li> <li>Investors</li> <li>The general public, interested in business</li> </ul>
ALTER (Belgium) JHSPH (USA) CEM (Slovakia) 3RSMC (Denmark) NIPH (Norway) IRFMN (Italy) IUF (Germany)	SMEs – comm. expert University Public body SME Research organisation Research organisation Other	<ul style="list-style-type: none"> <li>Policy makers</li> <li>Regulators</li> <li>National and international agencies</li> <li>The general public, interested in policies</li> </ul>

The ONTOX  
Scientific Advisory  
Board SAB

- Patience Browne (OECD, France)
- Sandra Coecke (JRC, Italy)
- Marjana Novic (National Institute of Chemistry, Slovenia)
- Paul Whaley (Lancaster University, the United Kingdom)
- Stéphane Dhalluin (L'Oréal, France)
- Freddy Van Goethem (Johnson&Johnson/Janssen Pharmaceutica, Belgium)
- Paul Carmichael (Unilever, the United Kingdom)

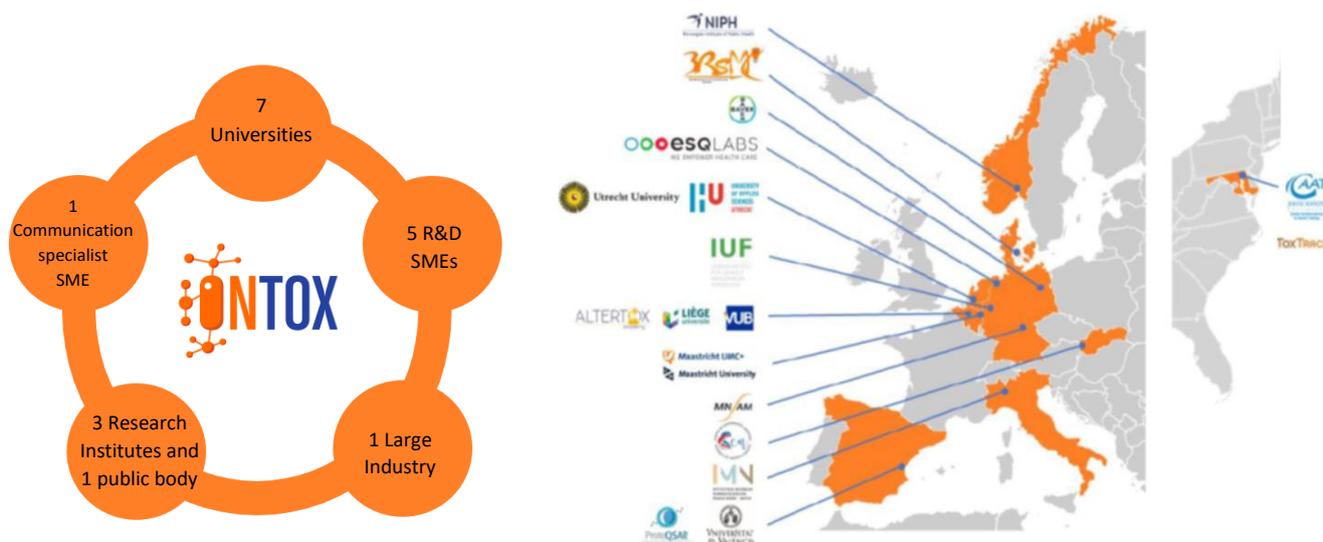


Figure 3: The constellation of ONTOX advisory groups and stakeholders.

**Geographically**, 16 partners originate from 8 different European countries, and two partners are located in the USA. Most of the European area is represented in ONTOX, including Central, Northern, Southern, Eastern and Western countries (Belgium, Denmark, Germany, Italy, Norway, Spain, the Netherlands and the Slovak Republic). The partners' networks and their international involvement in research projects, committees and professional organisations will assure that the **ONTOX messages are communicated towards the whole EU area and abroad**.

### 2.2.2. Analysis of the external groups with an active role towards dissemination to ONTOX target groups

An essential part of the communication and dissemination activities is contact with dissemination multipliers, i.e., other initiatives such as similar, ongoing EU projects or sectoral and business platforms (see Table 4). They are at the same time also seen as a **specific target group**.

**ONTOX has already partnered** with other recently funded Horizon 2020 (H2020) projects - PrecisionTox (GA 965406) and RISK\_HUNT3R (GA 964537). The three consortia form an innovative research **cluster ASPIS** ([www.aspis-cluster.com](http://www.aspis-cluster.com)) to impact the common target groups.

It is the largest public funding of this type of research in Europe in relation to the advancing safety assessment of chemicals without the use of animal testing (SC1-BHC-11-2020). Being part of this cluster will allow ONTOX to optimise synergies and avoid overlaps, sharing expertise to maximize the scientific impact and output of the three projects.

Other projects have already been identified, and contact has been made with the respective coordinators.

Communication to society regarding the NAMs and 3Rs ambition will be supported by relevant organisations in Europe, such as **EUROTOX** and **ESTIV** and beyond EU borders, including the **US SOT**, **ASCCT** and **CAAT**, **Japanese JSAAE**, and **Chinese TATT/TTAM**. In addition, the ONTOX consortium will team up with the different national 3Rs platforms in Europe for dissemination and communication purposes.

The ONTOX project will sign with the main dissemination partners **Memoranda of Understanding (MoU)** to set up the frameworks for collaboration in communication and dissemination activities. These will include, e.g. possibility of producing joint events, referencing the ONTOX website/publishing news on the collaborator's website and social media etc. The final strategy will be determined on a case-by-case basis. **MoU with ESTIV has already been completed** (Milestone 40 by ALTER).

WP6, 10, 12 and 14 elaborated a list of organisations and individuals that are regarded as effective dissemination multipliers in specific fields/target audiences. The database is a confidential annex of the communication and dissemination plan.

Table 4: An overview of the dissemination multipliers – identified sectors.

<b>Dissemination multipliers</b>	<ul style="list-style-type: none"> <li>• Other H2020/Horizon EU projects</li> </ul>
Cooperation with other initiatives and projects that can help to increase the ONTOX impact	<ul style="list-style-type: none"> <li>• Research and innovation clusters (ASPIS)</li> <li>• Stakeholder platforms (EPAA, ECOPA...)</li> <li>• Professional organisations (ESTIV, EURTOX, US, SOT...)</li> <li>• Network of 3R centres</li> <li>• JRC / EURL-ECVAM</li> <li>• Conferences and events</li> <li>• Informal business and research networks</li> <li>• Mass media (TV, radio) and various social media (LinkedIn, YouTube, Twitter, Facebook)</li> </ul>

### 2.3. ONTOX Channels for dissemination and communication

To effectively communicate to the ONTOX target groups, we identified and specified, as far as possible, the intended channels and their form. ONTOX will consider **online and offline channels**, as listed in Table 5.

The main online communication and dissemination channels are:

- **ONTOX webpage** ([www.ontox-project.eu](http://www.ontox-project.eu)).
- **ONTOX Hub** (Innovation Sharing Platform).

Both tools will target all the different ONTOX audiences to provide the means for disseminating the project's main progress and outcomes and framing dialogue among the various parties. **Social media** adopted a dominant role in the ONTOX dissemination activities, complemented by the 3-monthly **ONTOX newsletters**. **The ONTOX Social media include:**

- **LinkedIn:** <https://www.linkedin.com/company/ontox>
- **Facebook:** <https://www.facebook.com/ONTOXEUProject>
- **YouTube:** [https://www.youtube.com/channel/UCJ4ShaHjO3QfK2C\\_cxP5I7A](https://www.youtube.com/channel/UCJ4ShaHjO3QfK2C_cxP5I7A)

**The newsletter** is distributed through a distribution list generated through the collaboration of all of the ONTOX partners and the ASPIS cluster. Visitors of the ONTOX website have a possibility to subscribe to the newsletter via a separate form. The contacts list will be expanded with the progress of the project (min target of 500 people). The **marketing material** and the **policy briefs** describing the key and core messages of ONTOX will be available both as printed and digital material, supporting the dissemination activity of ONTOX.

The so-called **offline channels** include:

- Organisation of demonstration events and workshops.
- Organisation of the ONTOX conferences and annual meetings.
- Attendance and participation in congresses and events.
- Bilateral contacts with representatives of targeted organisations.
- Joining ongoing initiatives and groups of stakeholders.
- Publishing in scientific journals.
- Publishing in science popularisation periodicals.

These offline channels put a higher emphasis on communication activities. ONTOX aims to promote interpersonal communication activities for our primary target audiences, particularly regulators, innovators, and potential industrial end-users. The involvement of these groups is a necessary condition to delivering the expected impacts from the project.

Table 5: Channels for dissemination and communication.

<b>CHANNELS AND TOOLS</b>	<b>ONLINE</b>	<b>OFFLINE LEAD</b>
Demonstration exercises and training events	Hybrid form	WP 12
The ONTOX Conferences/ASPIS cluster meetings	Hybrid form	WP 12
Bilateral Contacts: with key stakeholders, policymakers and regulators	Hybrid form	WP10 (WP6, WP12, WP14)
External conferences and scientific journals: attendance at different events and the publication of papers	Hybrid form	WP12
Scientific journals: publication of scientific and position papers		WP10 (supported by the whole consortium)
PR/ONTOX marketing material: brochures, banners to promote innovations delivered by NTOX		WP14 (WP10, WP12)
Policy briefs: to increase awareness of ONTOX's assets		WP6, (W10, WP12, WP14)
Public website: to inform all target groups about the ONTOX objectives, methods, results and events		WP14
The ONTOX members area of the website: internal communication and overview of the activities of the partners, knowledge sharing areas, calendar of events		WP14
Videos: providing complementary audio-visual information to the project website and made available in other dissemination platforms – such as LinkedIn,		WP14 (WP 12)

Twitter, Facebook and YouTube		
ONTOX Project Newsletters: to regularly inform the audiences on ONTOX project progress and outputs		WP14
O Hub - Innovation Sharing Platform: an online platform dedicated to innovations, containing descriptions, test results, and dedicated information for end-users and investors		WP13
Selected social media: to inform all target groups, including the general public		WP14

#### 2.4. Reporting and maintaining records on the contacts with the target audiences

**Reporting and maintaining the records** on the communication and dissemination activities is distributed towards WP 12 and WP 14 and supported by WP 6, 13 and 10 (see Tables 5 and 6). These reports are essential to justify allocated budgets and efforts and highlight the successes of the communication and dissemination activities. Reporting on contacts with the target audiences is presented at the annual meetings and general assembly meetings by WP leaders responsible for the particular area. To make the reporting consistent, we have developed **templates** to collect data from the partners on the various activities.

Reporting deliverables linked to the communication and dissemination of the ONTOX project messages and practical outputs are listed in Table 6.

Table 6: The overview of reporting responsibilities on the communication and dissemination of the ONTOX project outputs to the target audiences.

<b>DELIVERABLE</b>	<b>NAME</b>	<b>WP</b>	<b>PARTNER</b>	<b>MONTH</b>
D10.3	Report on the coordination of the dissemination, exploitation, communication and data management aspects	WP10	VUB	60
D12.1	Report on the dissemination through journal publications, conferences, communications and booths	WP12	ALTER	60
D12.2	Report on the training of the consortium	WP12	ALTER	60
D12.3	Report on the training of end-users and regulators	WP12	ALTER	60
D12.4	Report on collaborations with scientific societies and educational programmes	WP12	ALTER	60

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D13.1	ONTOX Hub	WP13	MN	60
D14.3	Report on the development and use of the communication tools	WP14	CEM	60

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### 3. Conclusions and follow-up

This deliverable 14.2 outlines the definition of and contact with target audiences. We have described in detail the target audiences and proposed communication tools. As outlined in the communication and dissemination plan, the communication and dissemination strategy is progressing without any delays and with measurable outputs.

### 4. Delays, issues and contingency

No delays, issues or contingencies to report.

### 5. References

1. Grant Agreement 963845. Ontology-driven and artificial intelligence-based repeated dose toxicity testing of chemicals for next generation risk assessment. <https://cordis.europa.eu/project/id/963845>
2. EC (2020) Communicating EU research and innovation guidance for project participants [https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm\\_en.pdf](https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm_en.pdf)