The European Nanotechnology Community Informatics Platform: Bridging data and disciplinary gaps for industry and regulators

Grant Agreement Number 731032

Deliverable Report 1.2 – Dissemination Strategy

Deliverable	D1.2 Dissemination Strategy
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Contents

List of Abbreviations

AB – Advisory Board

AOP – Adverse Outcome Pathway

CCB – Centre for Computational Biology

CEINT – Centre for the Environmental Implications of NanoTechnology

CSN – Center for Sustainable Nanotechnology

DMP -Data Management Plan

DoA – Description of Action

EC – European Commission

ECHA – European Chemicals Agency

EFSA – European Food Safety Authority

EMA – European Medicines Agency

EMMC – European Materials Modelling Council

EOSC – European Open Science Cloud

EPPN - European Pilot Projects Network

EUON – European Union Observatory for Nanomaterials

FAIR – Findable, Accessible, Interoperable, and Reusable

FP6 – Framework Programme 6

FP7 – Framework Programme 7

HEHS – Human and Environmental Health and Safety

H2020 – Horizon 2020

JRA – Joint Research Activities

MOOC – Massive Open Online Course

MoU - Memorandum of understanding

NA – Networking Activities

NBI – Nanomaterial-Biological Interactions (Oregon State University)

NGO – Non-Governmental Organisation

NIKC – NanoInformatics Knowledge Commons

NM – Nanomaterial

NSC – NanoSafety Cluster

OECD – Organisation for Economic Co-operation and Development

R-NANO LAB – Research Unit of Advanced, Composite, Nanomaterials & Nanotechnology

SBI – Systems Biology Ireland

SSC – Scientific Committee on Consumer Safety

SME – Small and Medium Enterprise

SOP – Standard Operating Procedure

TA – Transnational Access

UPCI – Unit of Process Control and Informatics

WP – Work Package

1 Introduction

This document is developed as part of the NanoCommons project, which is a European Union's Horizon 2020 Research and Innovation Program, under the Grant Agreement number 731032.

The NanoCommons Dissemination strategy provides guidance and direction for all partners on the required dissemination activities, and ensures a unified approach across the entire consortium. The aim of the Dissemination Strategy is to identify the necessary communication and dissemination activities and plan them to best achieve the desired results in terms of community building, advancement of best practice in open science for nanosafety and promoting adoption of the NanoCommons suite of tools and solutions.

This strategy begins by identifying the project communication and dissemination objectives, the material that needs to be communicated or disseminated, the dissemination tools, the targeted audiences for the dissemination activities, and the means by which to reach each audience.

1.1 Purpose of the Document

Deliverable D1.2 - Dissemination Strategy is part of the Work Package 1: Project Management and Coordination. The document summarises the consortium's strategy and concrete actions to disseminate the project and its outcomes, and should serve as a guideline to the consortium for the dissemination and exploitation activities to be carried out in the context of the NanoCommons project.

In the context of the NanoCommons project, communication and dissemination will aim to inform the nanosafety and nanoinformatics research communities about the existence of the NanoCommons research infrastructure and its growing range of data management and nanoinformatics services, and the activities of the project by: (i) providing easily accessible, up-to-date and accurate information, (ii) promoting participation in the project through Transnational Access, (iii) promoting the replication and further use of the knowledge and material produced in this context and (iv) disseminating the results and outputs of the project to identified stakeholders and interested audiences.

1.2 Structure of the Document

The deliverable D1.2 is structured to move from a general perspective to a detailed plan of action.

In chapter 2 a short description of the NanoCommons project is given as well as a description of the dissemination objectives. Chapter 3 is about the Communication and Disseminations tools, presenting the website and its 3 main areas: public sections, private area, and transnational access portal and helpdesk. The dissemination pack presents the NanoCommons project brochure, TA Flyer, general poster/rollup banner, standard presentation, YouTube project presentations and a short film that will be developed.

In chapter 4, the project stakeholders are identified and analysed, starting from the Consortium Partners, European Commission, Users and NanoCommons Research Community, the NanoSafety Cluster and Horizon2020 Projects, the EU Observatory for Nanomaterials (EUON), the Organisation for Economic Co-operation and Development (OECD), Regulatory Bodies and Policy Makers and the Wider Community.

Chapter 5 addresses in detail the NanoCommons communication and dissemination strategy and presents an overview of both completed (year 1) and planned (years 2-4) activities, including conferences, workshops and meetings organisation, training events (webinars, hackathons, summer schools), networking activities, publications, and our social media activities.

The partners roles and responsibilities and the dissemination timetables are described in chapter 6, including the associated deliverables describing the various dissemination actions and activities, while chapter 7 summarises the dissemination plan and discusses how the success of the dissemination strategy (or otherwise) will be assessment. It also links to the sustainability plan (D10.3) and other related activities, showing how these activities provide a holistic approach to ensuing a durable outcome and legacy from the NanoCommons project.

2 Project Background and Objectives

H2020-NanoCommons project is driven by the needs of the European nanosafety, nanomedicine, emerging materials research and regulatory communities for a novel and one-stop-shop e-infrastructure that supports a standardised, reproducible and interoperable way to generate new nanosafety data, makes older nanosafety data accessible, and ensures sustained access to existing data, knowledge, analysis and modelling tools that have been adapted and verified as suitable for application to nanomaterials risk assessment. Thus, NanoCommons is developing a suite of tools for data management across the whole data life cycle, as well as tools to support the sharing of datasets and to increase their FAIRness.

NanoCommons brings together academia, industry, and regulators to facilitate pooling and harmonising of methods and data for modelling, safe-by-design product development and regulatory approval purposes, thereby driving best practice and ensuring maximum access to data and tools. NanoCommons activities are group under three main pillars of activity, as follows:

Networking Activities span community needs assessment through development of demonstration case studies (e.g. exemplar regulatory dossiers).

Joint Research Activities integrate existing resources and organise efficient curation, preservation and facilitate access to data/models.

Transnational Access focus on standardisation of data generation workflows across the disparate communities and establishment of a common access procedure for transnational and/or virtual access to the data, and modelling and risk prediction/management tools developed and integrated.

NanoCommons is creating an openly accessible e-infrastructure of scientific and cutting edge and managerial excellence provided by a combination of research-intensive academic groups and SMEs serving the current and future (unmet) needs of the key research communities and pivotal industrial users and regulators. NanoCommons brings pan-European and international added value and innovation opportunities, by answering the increasing demands concerning the prediction of safety of existing and new nanoscale materials for health and environmental sustainability.

2.1 Project Objectives

More than ten years of nanosafety research have delivered tangible insights into the key science and policy required for the development of safe nano-enabled products. However, this knowledge has yet to be systematised, or made “FAIR” (Findable, Accessible, Interoperate, and Reusable), in a manner that allows modellers to develop predictive frameworks and assess their domains of applicability, and allows industry to utilise the data, models and tools for safe-by-design strategies or as supporting evidence

for use in regulatory dossiers, for regulators to compare one form to another or make estimations of data requirements for Novel and Emerging Materials, or educators to utilise in teaching toxicology, ecotoxicology, environmental fate and modelling of the behaviour of nanomaterials.

To address this gap, NanoCommons is creating an openly accessible e-infrastructure (Figure 1) that builds on previous EU-funded and international efforts, serving the current and future (unmet) needs of the key research communities and pivotal industrial users and regulators. Thus, NanoCommons is developing tools to facilitate:

- the efficient collection, integration, curation and maintenance of existing data and methods along with development and optimisation of the tools and user interfaces to interrogate them (JRA),
- the provision of access to the data, methods and tools collected or produced under the project, along with expert guidance in their use and in experimental design and workflows to harmonise data quality into the future (TA), and
- community building including bridging disciplinary gaps (e.g. toxicology and ecotoxicology, experimental and modelling), promoting best practice in data quality (e.g. Quality Assurance (QA) audits, Independent Experimental Data audits), and development of User case studies demonstrating the capability of the NanoCommons infrastructure to address real stakeholder challenges in partnership with industry & regulators (NA).

NanoCommons is designed to integrate the Knowledge infrastructure for risk assessment of novel and emerging materials on a European and international scale, and provide (remote) access to data, data mining, modelling and risk assessment tools to all European researchers, from academia and industry, as well as regulators, ensuring their optimal use and joint development.

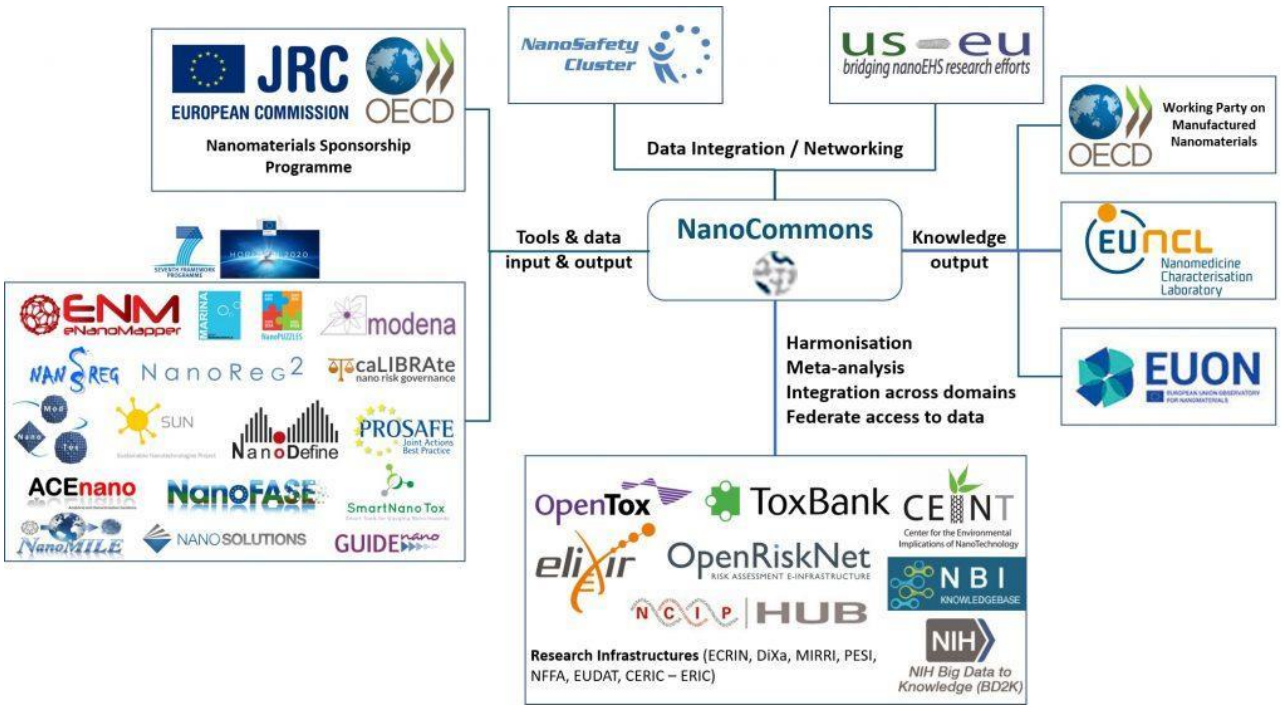

Figure 1: *NanoCommons' positioning and how the project aims to provide an integrating platform for the NanoSafety community in Europe and globally.*

2.2 Objectives of the NanoCommons Dissemination Activities

The communication and dissemination strategy aim to spread the word about the project ambitions and help the targeted stakeholders to access the NanoCommons services, facilities and knowledge in order to advance their work, solve problems and take their research to the next level. The ultimate goals of communication and dissemination are to maximize the potential of the data services to be used beyond the lifetime of the project.

In more detail, the objectives of the communication and dissemination activities are:

- To raise public **Awareness** about the project, its expected outcomes within defined target groups using effective communication means and tools;

- To disseminate for **Understanding**: Inform the audiences that can potentially benefit from what the project has to offer. It is important, therefore, that these groups/audiences have a deeper understanding of what Nanocommons has to offer. Target groups here include the nanosafety and nanomedicine research communities, and end-users such as the EU Observatory for Nanomaterials (EUON) and industry;

- To **Exchange Experience** with projects and groups working in the field, such as the EU NanoSafety Cluster (NSC) and the European Materials Modelling Council (EMMC), in order to join efforts, minimize duplication and maximize potential;

- **Dissemination for Action** which refers to these groups that are in a position to "influence" and "bring about change" within their organisations. These groups need to be equipped with the right skills, knowledge and understanding of NanoCommons work in order to achieve real change. Target groups here include R&D industry & SMEs, NGOs & consumers, regulatory and policy, insurance, etc.

NanoCommons dissemination activities are organized according to the intended target audiences, namely:

- Dissemination to research peers including TA users and young researchers;
- Dissemination to stakeholders including policy and regulatory agencies, Non-Governmental Agencies and other interested parties, all industry sectors with a potential involvement in nanotechnology, international standards organisation;
- Liaison with other EU projects, the Nanosafety / Nanomedicine clusters, the EMMC and EUON, and with the European Commission;
- Dissemination to the General Public;
- Engagement of new member states.

3 Communication and Dissemination Tools

The respective dissemination strategy and the related activities have been identified so as to maximize the use of the project information, outcomes and results.

Below are listed the tools and the communication activities developed to date as part of the NanoCommons project. All the materials used for the dissemination activities reflect a common visual identity, which is associated with the project logos (Section 3.2). The dissemination materials include the project brochure (Section 3.3.1), the TA flyer (Section 3.3.2), a Roll up banner (Section 3.3.3), standard templates for use in presentations at conferences, workshops and training events (Section 3.3.4) and a short film which is under development (Section 3.3.5).

3.1 Website

Setting up the project website was the first phase of the project's communication, dissemination and exploitation strategy.[1] The dedicated NanoCommons website is the main dissemination reference and describes the project, the challenges, the objectives, the project partners and provides information on transnational access, describing both the services on offer as well as the process to apply for funded access via the 6-monthly TA calls, as well as announcing forthcoming news/conferences/workshops/events and providing a repository for completed events and activities.

The project website is accessible at https://www.nanocommons.eu/ and Figure 2 shows a screenshot of the homepage demonstrating the access strapline of "we develop, you access" to highlight that the tools and services being developed are for the community and accessible to all.

Figure 2: *Website screenshot*

[1] https://www.iprhelpdesk.eu/sites/default/files/EU-IPR-Brochure-Boosting-Impact-C-D-E_0.pdf

3.1.1 Public sections of the Website

The website was created at the beginning of the project and officially launched in April 2018. The purpose of the website is to serve as the main information gateway for the project. Over time it will become the repository for all of the public dissemination materials, including presentations, posters, public deliverable reports, training materials, publications, and software tools etc.

Through the website, general and specialized information are stored, updated and permanently accessible to any interested audience. In addition, the website provides information on all project work packages, activities and results, transnational access as well as upcoming events/workshops/conferences.

The public website is divided into five main areas, as follows:

- The **Homepage**: with an overview of the project and consortium logos together with a quick description of our skills & experience (Figure 3).

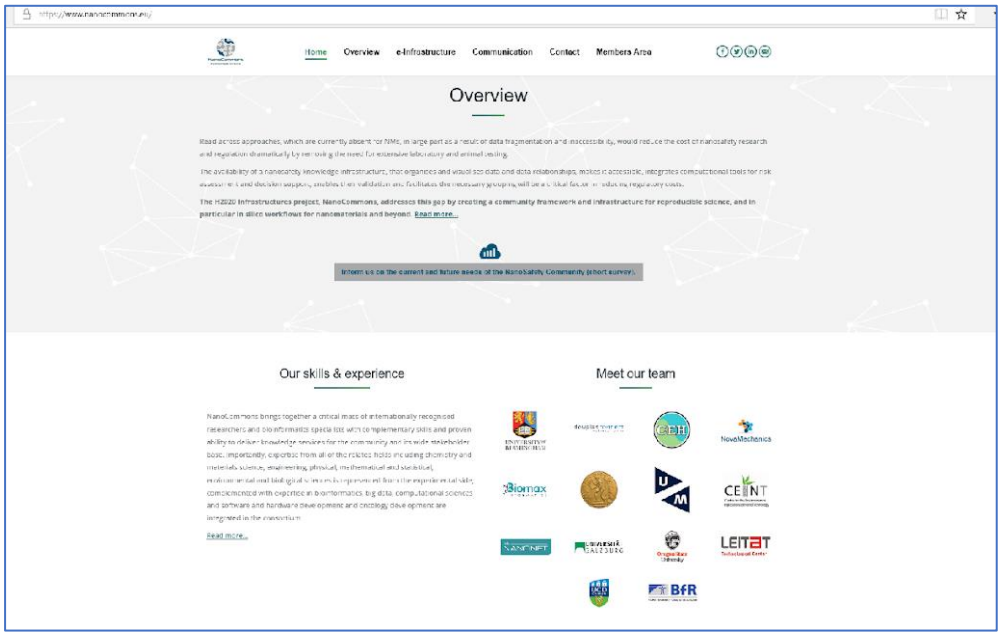

Figure 3: *Website homepage*

- The **Overview** session presents the project objectives, the approach and its intended impact (Figure 4). This section explains what NanoCommons is, presents the team (consortium partners skills & experience), the NanoCommons values & principles and presents an overview of the work packages.

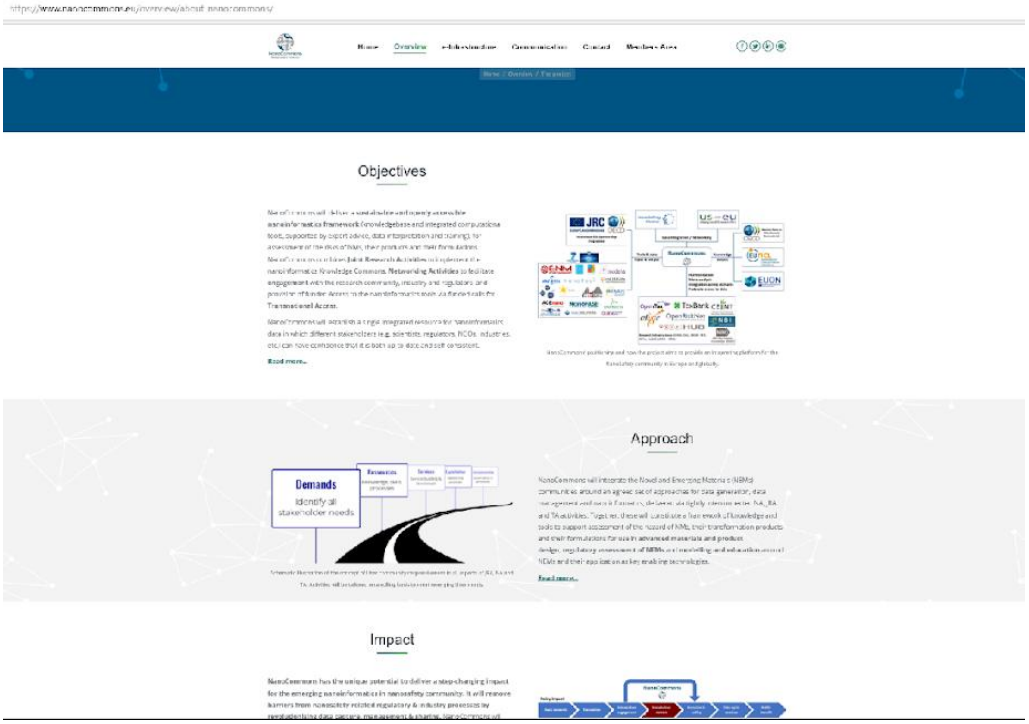

Figure 4: *Overview session*

- The **e-Infrastructure** section with a quick explanation of what Transnational Access means, an overview of the services and the detailed transnational access services (Figure 5).

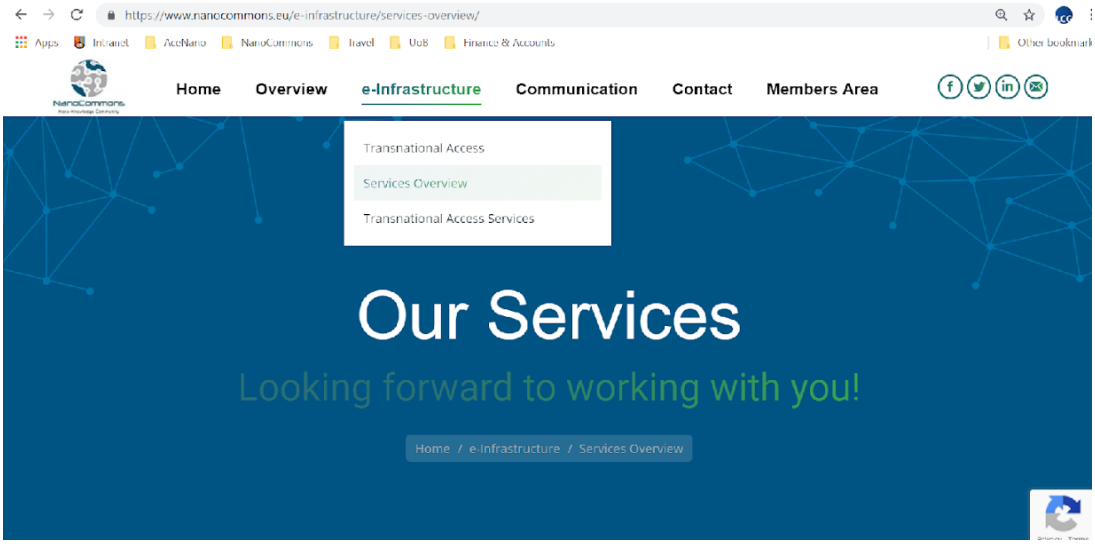

Figure 5: *e-Infrastructure Session*

- The **Communication** section is divided in News & Events, Outputs and Event calendar (Figure 6) and all sections are continuously updated to ensure that the site is current and topical. The News & Events section is one of the main dissemination tools and all conferences, meetings, workshops, events, training schools, networking events, webinars, etc. are publicised and links within this section often redirect to the targeted stakeholders. The Outputs section publishes the public deliverables and other

project outputs (reports, poster presentations, training materials, publications, datasets, modelling tools etc.), while the Event Calendar session is a constant reminder of our next dissemination events.

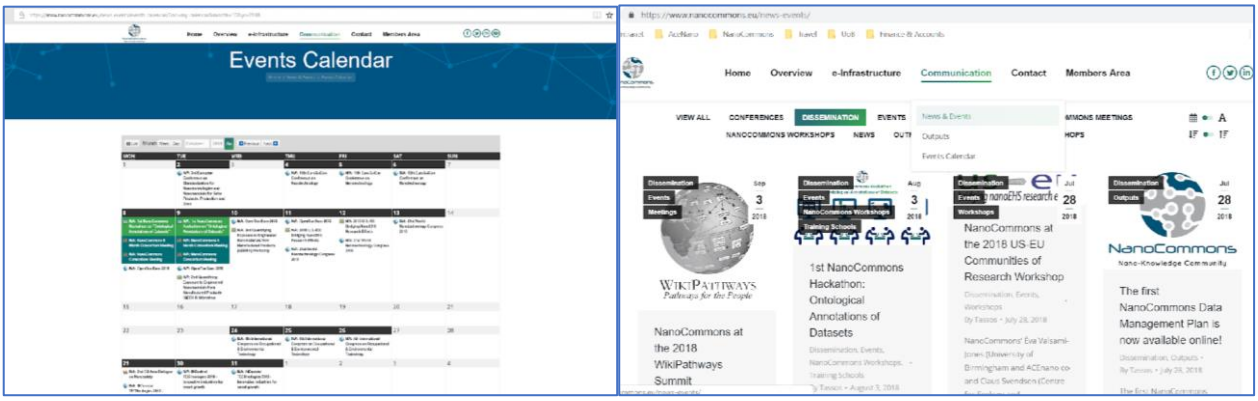

Figure 6: *Communication Session*

- The **Contact** section gives contact details of the project coordinator, the form to contact the project coordinator for any queries or to express the interest to use the NanoCommons services or simply to know more about NanoCommons (Figure 7).

The website is, and will continue to be, updated on a regular basis during the project lifetime and will be maintained for 5 years after the project end.

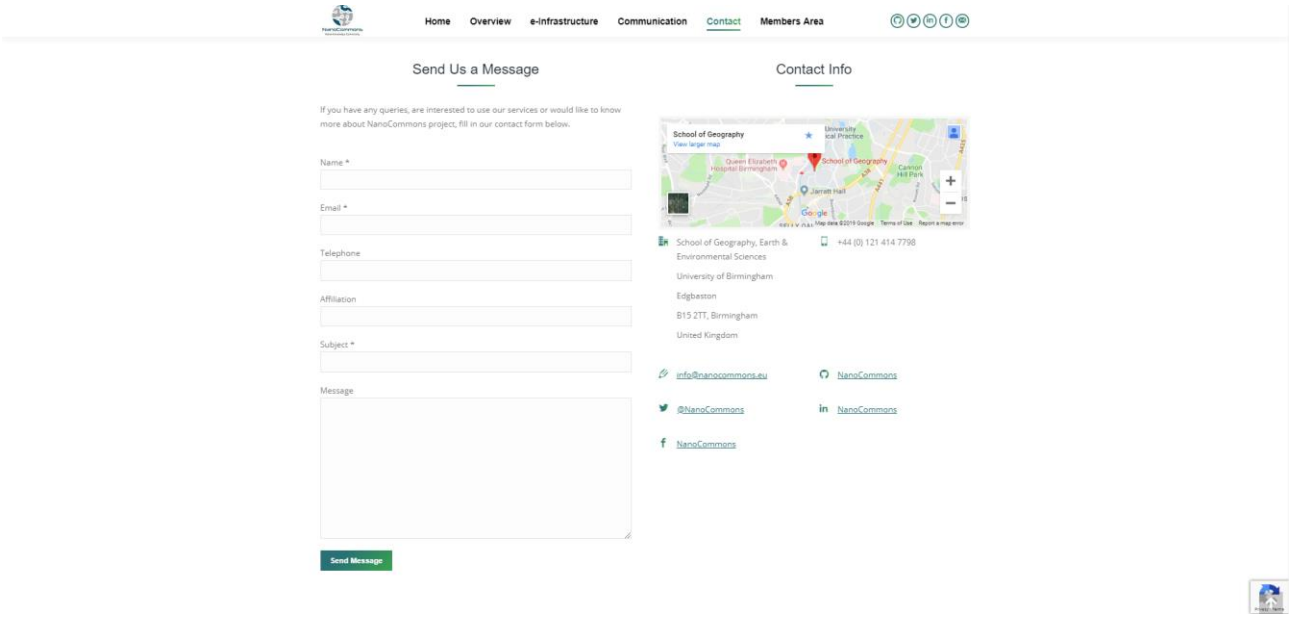

Figure 7: *Contact Section*

Project dissemination is done also through partners' websites, with an active link to the project website and the project logo and the reproduction of key information, objectives, news, events, etc.

3.1.2 Private Area of the website

The website also includes a reserved/password protected area for internal documentation exchange.

The purpose of this section is to collect all project documentation and to use the website as the complete project database and the most appropriate means for storing confidential materials. The documents are organized in different folders and it contains: official documentation (project documents as the Project Proposal, the Grant Agreement and all EC communications), templates, project meetings info (agenda, minutes and presentations), final versions of deliverables, activity reports, monitory reports, dissemination documentation, etc.

The management of the private area of the website is carried out by UoB who upload relevant documents.

3.1.3 Transnational Access – Application Helpdesk

As part of the dissemination strategy, and to support Users in accessing the NanoCommons services, a helpdesk service will be developed to support potential Transnational Access users.

The NanoCommons Transnational Access (TA) is the ability of Nanosafety Researchers from industry, academia and regulatory bodies to access the state-of-the-art NanoCommons expertise free of charge and take advantage of the NanoCommons services, facilities and knowledge to advance their work, solve problems and take their research to the next level.

NanoCommons TA provides funded access to state-of-the-art NanoCommons nanoinformatics and data management tools and services, and the expertise to implement them successfully.

Researchers from academia and industry are invited to access the NanoCommons services, facilities and knowledge. Access to the platform and the supporting tools is via 6-monthly calls for funded access. All applications are reviewed and ranked for suitability for funding (fit to NanoCommons research area, evidence of need, quality of the research that will be enabled etc.) – full evaluation criteria are in the User Handbook (https://www.nanocommons.eu/ta-access/transnational-access-guidelines/) on the website.

The Helpdesk will act as central point to support Users in developing their applications and will ensure timely responses from TA partners to User queries. The objectives of the TA helpdesk are to:

- support Users in the development of their TA applications, guiding them to the most appropriate modality of access, the most suitable tool to address their research question, and the time needed to complete their proposed work.
- develop a Frequently Asked Questions (FAQ) document to support the online application form and the full set of User guidance documentation to streamline the entire Transnational Access process.
- work closely with specific under-represented User groups, such as the new member states, industry and regulators, to support their uptake and utilisation of the NanoCommons starting community knowledge infrastructure, including development of pilot or demonstrator mini-projects.

The helpdesk system is being developed jointly by Biomax (technical development and maintaining) and UoB (website implementation and support). The helpdesk support will be provided by Ivan Stambolic (Biomax) and Anastasios Papadiamantis and Cristiana Gheorghe (UoB).

Following the selection of users from the 1st and subsequent calls, a page for profiles for users will be introduced into the website. Users will be allowed to present their profile covering their background, the

research they undertook as part of NanoCommons and the services / facilities they benefited from and will be invited to give a testimonial based on their TA experience.

3.1.3 GitHub Organisation

A GitHub Organisation has been set up for NanoCommons, https://github.com/nanocommons, for the purpose of disseminating source code, data, and tutorials via version control systems. Currently, it hosts a copy of our Data Management Plan (DMP, see Deliverable D10.1), two tutorials (one released, one in preparation), and documents around collaborations. The use of a version control system encourages reuse and resharing, as detailed below.

The tutorials are written as Markdown files and available as autogenerated HTML pages, when released, e.g. https://nanocommons.github.io/tutorials/enteringData/. In a collaboration with ELIXIR, these tutorials can be annotated with BioSchemas so that when updated they will be automatically available on the TeSS, ELIXIR's Training Portal (https://tess.elixir-europe.org/content_providers/nanocommons). Similarly, the DMP is now also written as a Markdown file, which allows other EU NanoSafety Cluster projects to reuse the DMP. Various projects that started in 2019 have shown interest, including RiskGONE and Gov4Nano.

3.2 Dissemination Logo

The project logo includes the name of the project (NanoCommons) and the community the project serves, i.e., the Nano-Knowledge Community. Its main concept intends to clear and to capture the attention of the audience. The image is intended to depict people connecting globally and connecting science. The logo is available under a CC-BY-ND license from WikiCommons:

- https://commons.wikimedia.org/wiki/File:NanoCommons-Logo-Large_-_White_Circle_01.png

Figure 8: *Project logo*

3.3 Dissemination Pack

The NanoCommons dissemination pack is a work in progress, and will be updated with new materials / new versions focussing on the results and outputs over the course of the project. The current set of dissemination materials include the project brochure, the project poster and the TA flyer, the roll-up banner for use at events etc. Printing of materials will be kept to a minimum in line will the sustainable development goals, and thus electronic versions will be distributed where possible, although some printed materials are required for dissemination purposes during conferences, workshops and other awareness building events. The dissemination materials will be available in English and are presented in detail below.

3.3.1 Brochure

A project brochure was produced in order to help effectively the dissemination activities. The content of the brochure is clear and easily understandable by the targeted end users.

The project brochure (Figure 9) shows the NanoCommons project logo and the consortium partners' logo and presents the NanoCommons basic information such as its objectives & values and ways to achieve it.

The brochure was printed and will be actively circulated at conferences, workshops, meetings or other events, while the electronic version is also available for download from the project website.

Figure 9: *NanoCommons Brochure – Project Overview*

3.3.2 Transnational Access Flyer

The main objective of the TA flyer is to provide to the targeted stakeholders, i.e. potential users of the TA tools and services, an attractive and written accessible summary of the TA process and step-by-step guidelines and other useful information on how to apply for funded TA (Figure 10).

The flyer is a tri-fold brochure and will be circulated in printed form and handed out at conferences, workshops, meetings or other events; on the other hand, an electronic version (e.g. PDF file) can be circulated as well. The leaflet will be also available for download from the project website.

The leaflet presents the TA Services summary, the TA Partners' logos and TA Guidelines & Core Values. The flyer provides the TA Helpdesk contacts together with the project website and social media accounts.

The content of the leaflets is clear and easily understandable by the target end users and any audience.

Figure 10: *Transnational Access Flyer*

Other flyers will be produced during the project lifetime, especially for promoting the project results or targeted to specific audiences (e.g. how the industry can get involved or data management tools).

3.3.3 General Poster/Roll Up

A project roll-up banner has been produced in order to give an additional effective aid to the dissemination activities. The project's roll-up contains the very basic information about the project (Figure 11).

The roll-up focuses on the visual aspects and its main purpose is to catch the audience attention. The content of the roll-up is clear and easily understandable by the target end users.

From the layout and design point of view, the poster shows the NanoCommons project logo and the consortium partners' logo. From the content point of view, the roll-up of the NanoCommons project illustrates its objectives and include basic information on the project and on the Consortium.

Figure 11: *Project roll-up banner*

3.3.4 Standard Presentation templates

All communication and dissemination activities developed by every partner within NanoCommons will be properly registered through the templates that have been prepared for this purpose.

All presentations or any other outputs and publications will have the standard text included at the bottom (or in the acknowledgements for publications):

This project has received funding from European Union Horizon 2020 Programme (H2020) under grant agreement nº 731032.

Examples of presentation templates are shown in Figure 12.

Figure 12: *Presentation Templates*

3.3.5 Short Film/Videos

A short project explainer video, targeting the general public and non-technical stakeholders, will be produced, targeted at consumer awareness of nanosafety research and the NanoCommons research infrastructure. The film will be hosted on YouTube, and will be promoted through all partners with press releases, workshops and conferences, plus available through the project website. The production company will be pix videos, who have made a number of such scientific explainer videos in the past.

NanoCommons is also encouraging project partners where appropriate to record presentations and webinars to generate a library of upto the minute videos that explains the approaches of the project and what it can provide to candidate TA applicants. Some short technical videos have already been published on youtube, recorded at events where the NanoCommons project was presented, including an Overview of the NanoCommons project (link) and Data Management in Nano Safety (link).

3.4 NanoCommons Services Survey and Community Suggestion Box

A NanoCommons survey (https://www.surveymonkey.co.uk/r/PK2KXWW) has been set up in order to better understand the tools needed by the nanosafety and beyond community. The survey is also a tool to give the opportunity to the interested stakeholders to subscribe for the upcoming calls, which will allow them to access the project services (Figure 13).

This survey targets end-users, database managers, software and tools developers from all relevant areas, as well as workflow integrators (both developers of tools for workflow management and researchers implementing workflows e.g. in industry settings).

All project partners will also be active participants, as they will be providing inputs to our international survey and be pilot cases for the demonstration activities.

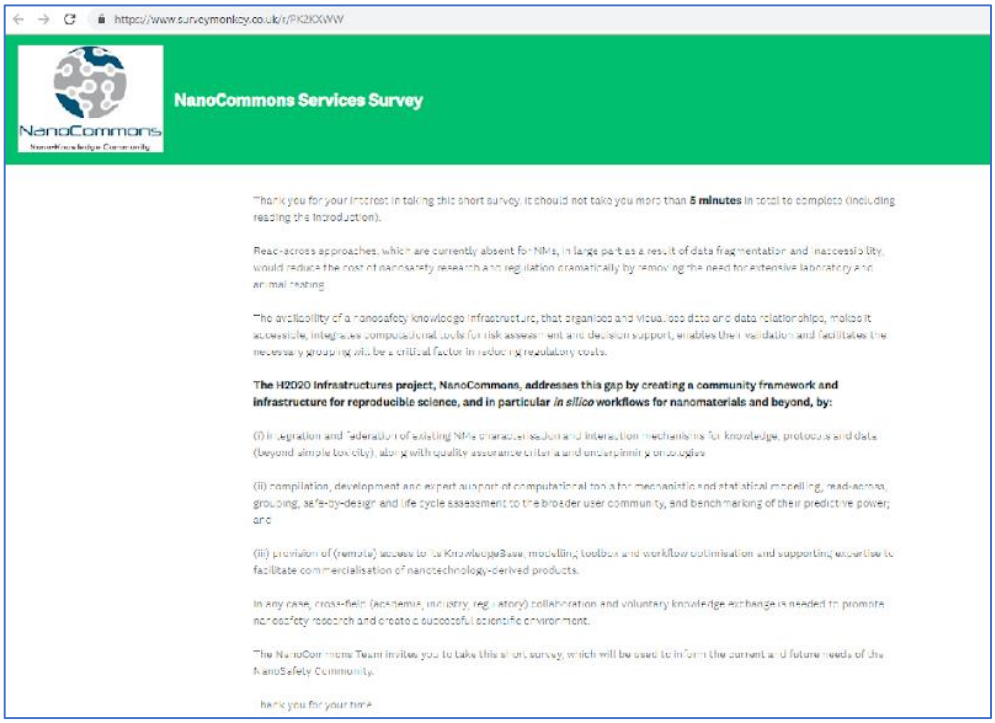

Figure 13: *NanoCommons Services Survey*

After the first TA call, a TA Community Suggestion Box will be published on the NanoCommons website. The TA Community Suggestion Box will be a way in which TA Users or potential Users can communicate their ideas, feedback and suggestions to the entire community.

The TA Community Suggestion Box will be created to enable the community to provide input and direction to the development of the infrastructure and will allow the community to propose work items for the

research infrastructure, and via specific calls for suggested activities, widely promoted via the annual conferences, stakeholder workshops etc.

4 Stakeholders

The NanoCommons project aims to promote interoperability between the different research communities and stakeholder groups and create a community framework and infrastructure for reproducible science. Figure 14 summarises the Stakeholder groups of relevance to the NanoCommons research infrastructure for nanoinformatics.

Figure 14: *Stakeholder groups of relevance to NanoCommons research infrastructure for nanoinformatics*

NanoCommons brings together a critical mass of internationally recognised researchers and bioinformatics specialists with complementary skills and proven ability to deliver knowledge services for the community and its wide stakeholder base.

The project activities are enabled through the integral roles of several industry/SME partners with specialisations in hardware and software development and integration at various technology readiness levels, knowledge management, risk assessment, innovation management and regulatory consultancy.

Different stakeholders were identified and can be grouped into 8 main categories, including:

1. Consortium partners
2. European Commission
3. Users and NanoCommons Research Community
4. NanoSafety Cluster and Horizon 2020 Projects
5. EUON - EU Observatory for Nanomaterials

6. OECD - Organisation for Economic Co-operation and Development
7. Regulatory Bodies and Policy Makers
8. Widen the community – new member states.

A dedicated dissemination plan for each of the identified stakeholder groups has been developed as part of the NanoCommons dissemination strategy and is detailed in Section 5.

The Users of NanoCommons tools and services are also a diverse group, spanning numerous scientific sectors and research or application areas. As such, we have further broken down the Users in Table 1 below, and identified the results that each sub-group of potential users are likely to be interested in, as part of our efforts to tailor our dissemination and messaging to the various stakeholder groups.

Table 1: *Identified User groups and NanoCommons results/outputs that are likely to be of interest to each*

Users	Results used (direct or *indirect*)	Concerned bodies
Risk assessment community	– Access to large, organised and interoperable datasets for analysis – Access to benchmarked decision-support and risk assessment tools – Demonstrated User case studies showing how the infrastructure can be utilised	Public institutes (RIVM...), universities Env. consulting and insurance companies Large and small companies, SMEs NGOs, trade bodies EU and national authorities (ECHA...)
ENM designers		Large companies, SMEs
Decision makers of ENM industry	– Integrated re-usable datasets and querying capability to address knowledge gaps – Benchmarking of predictive capacity of tools – Regulatory acceptance driven by community validation /adoption of tools – Guidance on data management best practices and workflows	Large companies and SMEs Industry federations (NIA, CEFIC…) Insurance companies
Regulators		EU and national authorities (ECHA...)
Policy makers		EU and national representatives EU and national governments
General public		NGOs, media, individuals
Scientific community	– All components of the Knowledge Commons: SOPs, models, tools, datasets etc. – Funded access to tools, models, data & supporting expertise – Support for implementation of data management practices and workflows	Research institutes, universities Large companies, SMEs
Standardisation community	– Protocols for knowledge management – Methodology for benchmarking tools / models	OECD, ISO, CEN, CODATA... Most bodies above except some NGOs and trade bodies
Laboratories	– Protocols & standards – Support for implementation of data management practices and workflows	Industry, commercial, research laboratories

4.1 Consortium Partners

The communication with project partners is considered an extremely important aspect of delivering on the goals of NanoCommons. To this end, all WP Leaders and task leaders are encouraged to communicate regularly with their co-task participants and to organise discussion meetings of task progress, planning and implementation, and for the development of joint documentation including input to periodic reports and deliverables. Google docs for joint deliverable writing has been used successfully to date.

From the coordination team and the NanoCommons project office side, communication with the consortium is on an *ad hoc* basis as required, and in a more formalised way via monthly updates on overall project progress, covering the four main areas of activity, namely Project Management, Networking Activities, Joint Research Activities and Transnational Access.

4.2 European Commission

As an infrastructure project, NanoCommons is funded through the EU Horizon2020 - Integrating and opening existing national and regional research infrastructures of European interest and it falls under the H2020-INFRAIA-2017 - Integrating Activities for Starting Communities.

Dissemination to the European Commission is done though the interim and periodic reporting and the submission of deliverables reports. However, in order to provide ongoing oversight and opportunities for corrective actions if needed, the Commission representatives for NanoCommons are included in the periodic updates of NanoCommons progress.

4.3 Users and NanoCommons Research Community (especially new member states)

From an infrastructure project viewpoint, User means researchers (from both academia and industry) applying for transnational access to one of the 10 facilities offering access via NanoCommons. Users also includes regulators and policy makers.

Users of the Transnational Access are one of the most important target groups for the NanoCommons communication and dissemination, as Transnational Access represents an important project activity. Efforts to ensure inclusion of the new member states as Transnational Access Users will be actively promoted. For example, special effort will be made to distribute NanoCommons flyers at conferences in related areas held in new member states, where the proportion of local scientists will be high.

NanoCommons is driven by the European Nanosafety, Nano-medicine and emerging materials research and regulatory communities search for a novel infrastructure providing a standardized, reproducible and interoperable way to access all available data, knowledge and analysis and modelling tools that have been adapted and verified as suitable for application to nanomaterials with their myriad challenges even beyond those of chemical risk assessment.

The research community spans toxicology and especially predictive toxicology, systems and structural biology, bioinformatics and its subtopics toxicogenomics, cheminformatics, biophysics and computer science, as well as of the EU's chemical manufacturing industries, e.g. pharmaceutical companies, chemical and agrochemical industries and cosmetic industries, and the corresponding regulatory agencies, e.g. the European Medicines Agency (EMA), the European Chemicals Agency (ECHA), the Scientific Committee on

Consumer Safety (SCCS), the European Food Safety Authority (EFSA) and the Organization for Economic Cooperation and Development (OECD).

Different sectors addressed by NanoCommons include:

- Health industry
- Automotive industry
- Energy harvesting
- Chemical industry
- Pharmaceutical companies
- Cosmetic industry
- Agriculture/Food companies
- Regulatory agencies:
    - EC (European Commission)
    - European Medicines Agency (EMA)
    - European Chemicals Agency (ECHA)
    - Scientific Committee on Consumer Safety (SCCS)
    - European Food Safety Authority (EFSA)
    - Organization for Economic Cooperation and Development (OECD)

Dissemination activities will include interaction with the European Materials Modelling Council (EMMC). EMMC is a community driven, bottom-up action to connect all existing material modelling activities and stakeholders in Europe. The mission of the EMMC is to bring materials modelling closer to the demands of industry. The EMMC networks with all existing activities taking place in the field of materials modelling, and builds on existing activities in Europe.

The European Open Science Cloud (EOSC) is a European Commission project to provide a public data repository which conforms to open science values, and as part of the sustainability plan (see Deliverable D10.3) close engagement with, and linkages to EOSC will be developed to provide an additional link into NanoCommons tools and services, but also to ensure long term access.

4.4 NanoSafety Cluster and Horizon 2020 Projects

NanoCommons is delivering a sustainable, openly accessible nanoinformatics framework (knowledgebase and integrated computational tools, supported by expert advice, data interpretation and training), for assessment of the risks of NMs, their products and their formulations.

NanoCommons integrates a wide range of datasets, tools and modelling approaches from across the 60+ projects related to nanosafety-funded across FP6, FP7 and H2020, especially from NanoSafety Cluster.

NanoCommons will interact with all projects involved in the NanoSafety Cluster and offer its services throughout the community. Specific projects that it will initially interact with are: ACEnano and NanoFASE as test cases for data management; NanoReg2 and NanoFARM as pilot projects, NanoSolveIT and RiskGONE who are using the NanoCommons Data Management Plan (DMP) and the NanoCommons Knowledge Warehouse, and the other governance and nanoinformatics projects who will also share our DMP.

Webinars, workshops and conference will be organised as a joint event with NanoSafety Cluster projects, such as: NanoCommons, caLIBRAte, NanoSolveIT, and NanoInformaTIX who are jointly organising the

NanoSafety Cluster NanoWeek events in October 2019, and EC4SafeNano and NanoCommons who are co-organising an event on barrier to data sharing alongside the EU-US Communities of Research meeting in Aix en Provence later in October 2019.

4.5 EUON - EU Observatory for Nanomaterials

The European Union Observatory for Nanomaterials (EUON) provides information about existing nanomaterials on the EU market. EUON offers interesting reading about the safety, innovation, research and uses of nanomaterials to consumers, policy makers, industry or NGO. The EUON is funded by the European Commission and it is hosted and maintained by the European Chemicals Agency (ECHA).

EUON aims are to provide objective and reliable information on the innovation and safety aspects of nanomaterials on the EU market in order to collect and analyse information from a wide variety of publicly available sources, to complement existing information with external studies and to present information on the uses and safety of nanomaterials in a laymen language.

EUON will be a major stakeholder for the NanoCommons research infrastructure, ensuring a clear line of impact for the project, including for general society, and thus addressing the minor weakness identified by the reviewers in the Evaluation report.

NanoCommons is working directly with EUON to integrate the NanoCommons Knowledge Infrastructure into EUON, and EUON will promote the NanoCommons tools and services that are useful to them.

4.6 OECD - Organisation for Economic Co-operation and Development

OECD is the Organisation for Economic Co-operation and Development and its mission is to promote policies that will improve the economic and social well-being of people around the world.

The OECD works with governments to understand what drives economic, social and environmental change, measures productivity and global flows of trade and investment, analyses and compares data to predict future trends and sets international standards on a wide range of things, from agriculture and tax to the safety of chemicals. OECD recommend policies designed to improve the quality of people's lives.

As part of the Malta projects to accelerate the revision of the chemicals testing guidelines for use with nanomaterials, NanoCommons is providing infrastructure support including access to the electronic notebooks and integrated standard operating procedures (SOPs) and data collection templates annotated to allow direct integration into the database, and indeed has already shown how this case work via a round-robin use case within the ACEnano project. Further information on this will be reported in the periodic reports from the project, with a press-release to follow once details are firmed up.

4.7 Regulatory Bodies and Policy Makers

Within the European context, special attention is paid to the role of both National regulators and European bodies (such as the European Chemicals Agency and the European Medicines Agency). Typically, national bodies charged with the nanotechnology question have very little resources for this activity and it forms a small component of their broader activity.

An overarching need of all regulatory bodies (national and European) is access to reliable scientific knowledge, reported in a manner and format suitable for risk assessments, and accessible for re-use in modelling and model validation and as weight of evidence. It is here that NanoCommons will make its most durable contribution to regulatory bodies. It will drive a culture of reproducible, well reported knowledge and provide structures to implement knowledge-sharing and database interfacing, as well as automated data capture and data curation tools to move the process of data management and data quality assurance to much earlier in the data lifecycle. This will standardise the format of what is commonly referred to in scientific literature as the 'supplementary' part of the publication and will be supported by the data and metadata captured as part of the electronic notebooks which will include provenance information for the nanomaterials, as well as best practice reporting for the biological components and for the nanoinformatics aspects of all experiments, as well as calibration information and other good practice information that is assumed but not reported currently. This will transform access to information for use by regulators.

4.8 Widening the Community - engagement of new member states

To increase the integration of current activities in nanosafety, NanoCommons will support the new members states by channelling information and activities via Regional champions to ensure that opportunities within new member states are incorporated, and facilitated to take full advantage of the tools and services offered by NanoCommons. Dedicated events to support participation from new member states will be planned and specific workshops will be held within the new member states. More details about those activities will be presented in deliverable D2.4.

5 Dissemination Strategy

According to EC Research & Innovation Participant Portal Glossary/Reference Terms the communication, dissemination and exploitation can be defined as follows:

Communication on projects "is a strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about: the action and its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange."

Thus, the objectives of the NanoCommons communication strategy are to:

1. maintain all partners and the public fully informed about all dissemination activities;

2. to fully involve them in the project activities;

3. to publicly promote the project's actions and results.

Project Dissemination means "the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium."

The exploitation "is the utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities."

The dissemination strategy identifies and organises the activities to be performed in order to maximise the awareness and influence of the project and to promote the use of the NanoCommons services.

Each partner is responsible for involving and informing their relevant contacts and network about the project and getting their NanoCommons results used by other projects. The project will also give the consortium the opportunity to expand their existing networks, by attending meetings, workshops and conferences.

5.1 Dissemination Activities

Starting from the project structure, a specific strategy for each of the main activities of the NanoCommons research infrastructure (Networking Activities, Joint Research Activities and Transnational Access) is outlined below and the activities for each of the relevant target audiences (stakeholder groups) described. This will be reviewed annually to ensure that dissemination targets are being met, and will be revised as required to reflect the emerging state of knowledge. A summary of the dissemination approaches per activity is given for each of the project areas in Figure 14.

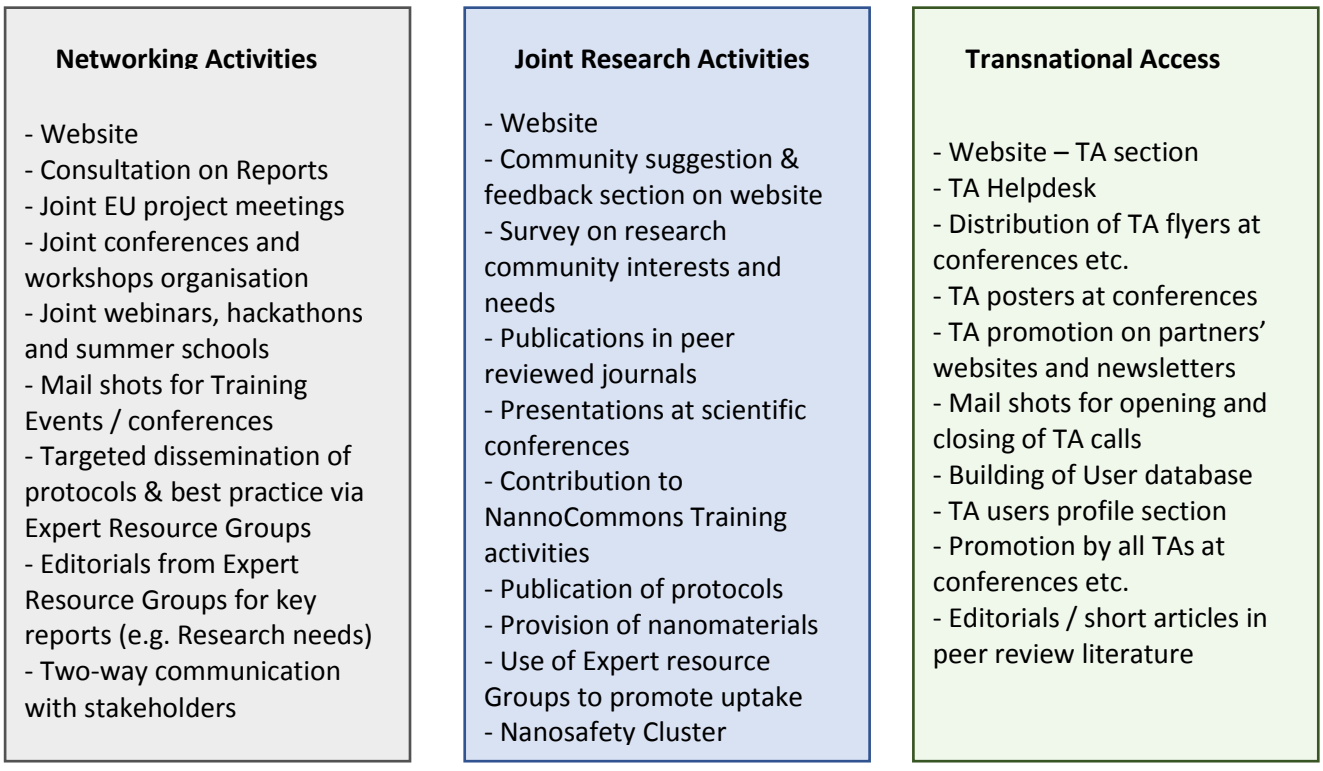

Figure 14: *Summary of the dissemination approaches that will be utilised to promote each of the pillars of activity within NanoCommons (Networking Activities, Joint Research Activities and Transnational Access)*

Being an infrastructure project, the NanoCommons dissemination strategy must dedicate an important part of its strategy to the Transnational Access activities, analysing and carefully planning all its steps such as: creating a webportal, promote the TA dedicated webportal, survey on TA interest and needs, call for TA proposals, produce a TA helpdesk, create a TA Users profile, publish the TA results, etc.

A survey of all potential Users of the NanoCommons research infrastructure will also be promoted during the conferences and events the NanoCommons partners will attend. This survey will include end-users, database managers, software and tools developers from all relevant areas, as well as workflow integrators (both developers of tools for workflow management and researchers implementing workflows e.g. in industry settings). Specific target groups will include new member states and young researchers.

TA User project profiles (highlighting women Users) will be added to the NanoCommons website and will feature on the promotional posters to encourage new applications, particularly from young researchers in emerging research groups across the EU New Member States and Candidate Countries.

The calls for TA proposals will be every 6 months initially, but may also be carried out on a rolling basis, depending on demand. A rolling call system allows each application to be processed and reviewed as it is submitted. One of the main advantages of this is the high turnover in applications and increase in access.

Concerted awareness raising campaign will be organised, starting with the researchers/bioinformaticians of the institutions providing TA. It is vital that all fully understand the processes and the objectives of the Project and ensure all are in a position to act as an effective Host.

Experience with other infrastructure projects has shown that more than half of the new Users are stimulated to apply after having personal contact with a staff member from a participating institution either by email or meeting in person e.g. at a conference. This recruitment mechanism will be built upon via a concerted marketing campaign and awareness within the Participant institutions not providing TA to ensure all staff are ready and able to route enquiries from potential Users. A TA helpdesk to assist researchers and to provide with information and support related to how to apply for the TA will be made available in month 15.

External promotion will be achieved using the project website, EU Nanosafety Cluster website and meetings, presentations/flyers/posters at international conferences, email shot of TA flyers to research institutes, universities and industry stakeholders.

Advert will be also published in NanoCommons TA partners websites and TA partners will publish adverts on online journals, editorials (Inside Government and SciTech Europe).

With further regard to gender issues, the NanoCommons website shall include a case study on Women in Science and the profiles of leading women researchers carrying out research in each of the institutions to encourage higher levels of female User recruitment. The nanosafety community is presently quite gender balanced, likely as a result of the close linkages with biology with a highly male dominated environment at the postdoctoral level, the project will contribute to redressing the balance where possible.

The NanoCommons project team will also consider whether it could provide a certificate and accreditation to Users who have attended and successfully completed project-related training, and continued on then to make their data Open and FAIR. Such accreditation, for example a certificate in nanosafety data curation, could be awarded to those who have completed relevant NanoCommons training courses. The precise feasibility of such an approach will be considered as the training portfolio becomes more developed and where the project can reasonably offer such opportunities becomes clearer.

Similarly, we are considering offering a NanoCommons curation prize, which could be awarded annually to specifically recognise younger researchers, as an incentive to support the community, for curation of their datasets and making the FAIR and Open. The prize would be an award for NanoCommons community Users who have produced well curated databases. For example, a series of NanoCommons Curation Prizes could be organised and opened to the entire NanoCommons research community.

These opportunities would be advertised through all social media, forums, within the NanoSafety Cluster Community and potentially linked to events organised by NanoCommons. The criteria of the selection and what the prize will consist of will be decided by the NanoCommons partners during the project lifetime.

A directed dissemination strategy will include publication of the accompanying protocols and inclusion of latest developments into the NanoCommons training materials and training sessions (webinars, hackathons and summer schools). This will be achieved by having consortium partners contributing to the development of training courses on appropriate topics.

Attendance at and participation in conferences, seminars and workshops will be targeted by the partners throughout the project's duration, in order to inform the stakeholders of the progress of the project and get some feedback/input and promote the transnational access services.

Communications activities will involve scientific meetings, presentations to trade organizations, participation in trade shows, website dissemination, software documentation, booklets and newsletters, online demonstrations, training sessions, virtual tutorials, social media. We will track for example the number of tutorials created and used e.g. download of NanoCommons tools guidance documents and view of associated supporting videos. The number of workshops, trainings, presentations, web/blog posts, online tutorials, online seminars, social net users and number of their posts; Number of users of different content channels will be recorded within a Dissemination plan for the project.

As EUON will act as a repository for data emerging from EU nanosafety research projects, in addition to regulatory data, NanoCommons will play an important role in supporting the development of the community standards upon which EUON will build. EUON will be a major stakeholder for the NanoCommons research infrastructure, ensuring a clear line of impact for the project, including for general society, and thus addressing the minor weakness identified by the reviewers in the Evaluation report.

Set up of NanoCommons Social Media handles: Setting up of accounts on the major social media networks (Facebook, Twitter and LinkedIn) to disseminate information about the project, issue project updates, form communities of interest and interact with stakeholders.

5.1.1 Completed Dissemination Activities (Jan 2018 – March 2019)

At the moment this document has been created a big part of the dissemination activities has already been carried out and a list of those activities is presented in this section.

NanoCommons Training events and consultation on the timing, content and organisation teams for these training events is already underway. A first attempt has already been made (to capture the current training interest) by asking the NanoCommons community to complete a survey of training needs. The survey was promoting and distributing during our conferences/events with the aim of getting more answers.

The 1st NanoCommons Hackathon on "Ontological Annotation of Datasets" was co-organised by the H2020 projects NanoCommons and OpenRiskNet. The hackathon took place on 9 October 2018 in conjunction with the next NanoCommons Consortium Meeting (8-9 October 2018) and the OpenTox Euro Conference (8-11 October 2018) in Athens, Greece. During the same event a special Workshop on Services & Tools was organized where the partners identified as experts in the services and tools, where presenting them to the whole consortium in order to make them more comprehensible for all.

A summary of Dissemination and Networking Activities carried out until now is listed below:

- OpenTox Asia 2018 (24th – 25th May 2018, Tokyo, Japan)
- Nano Korea 2018 Conference (10th-13th July 2018, Kintex, Korea)
- International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN 2018) (5th -8th September 2018, Durham, North Carolina, USA)
- 3rd NanoSafety Forum for Young Scientist (ACENano Meeting) (10th -11th September 2018, Malta)
- 4th International Conference on Research Infrastructures (ICRI 2018) (12th – 14th September 2018, Vienna, Austria)
- NanoTox Conference 2018 (18th -21st September 2018, Neuss, Germany)
- OpenTox EURO Conference (8th -11th October 2018, Athens, Greece)
- Industrial Technologies Conference 2018 (29th -31st October 2018, Vienna, Austria)
- NanoSafe Conference 2018 (5th -9th November 2018, Grenoble, France)
- 7th Korea-EU NanoWorkshop: "Abstracts for Nanosafety Informatics and Modelling" (12th November 2018, Seoul, Korea) (Oral presentation of Anastasios Papadiamantis (UoB): "*Sustainable Community Development of NanoSafety Knowledge Resources*")

Note that these events have mainly targeted the scientific user community, as would be expected for this stage in the life of the project (year 1 building awareness). The agendas for all of the above events have been included and can be found at D2.1 - 1st Annual conference & nano-exploitation day, stakeholder workshop & User call.

Other community involvement so far can be mentioned:

- Involved/contacted the whole EU NanoSafety Cluster community via several routes and several times (e.g. via Coordination team, mailing lists of the Cluster, etc.);
- Approached the European Pilot Projects Network (EPPN) via the respective working group leader(s) during several activities;
- Initiated liaison via a face-to-face workshop and follow up virtual meeting among key NanoSafety Cluster projects, NanoFASE and ACEnano, NanoCommons and members of the Center for the Environmental Implications of NanoTechnology (CEINT) to establish common approaches in data management between the United States of America and European nano-research communities, with a particular emphasis on applying the NIKC approach to ecotoxicological data sets.
- BNN approached its community, a total of approx. 12,000 global contacts;
- The innovation oriented special group of the i2L was additionally contacted;
- Via the European Commission, the distribution was kindly supported, and additional 10+ consortia could be reached, requesting them to distribute the survey within their projects as well;
- Involvement/contacted new member states via personal contacts from the BNN network, NanoFutures Catalogue of National & Regional Contacts as well as the NSC Compendium, under the guidance of CEH.

5.1.2 Planned Dissemination Activities

NanoSafety Cluster Week in October 2019 - Building confidence in risk assessment and governance of nanomaterial innovation - October 7-10, Copenhagen, including the conference jointly organised by NanoCommons, NanoSolveIT and NanoInformaTIX - October 8-9: NanoSafety Cluster conference "***Towards in silico nanosafety assessment – integrating experimental and computational approaches***".

NanoCommons is co-organising a Spring school in Alessandria, Italy with NanoGenTools and SOLUTIONS projects, 24th May 2019. School title: Applications and Safety Assessment of Nanomaterials: New Technological Approaches and Regulatory Aspects.

NanoCommons is co-organising the international Young Researchers conference on 9/10 September 2019 as a satellite event to the Particle Toxicology Conference in Salzburg in September 2019.

NanoCommons is co-organising an AOPs workshop as part of the OECD-AOP pilot project, in collaboration with PATROLS, pending approval from the OECD WPMN, in Paris (provisional dates: 10-12 September 2019).

5.2 Conference Organisation/Workshops/Meetings

In order to aware stakeholders of NanoCommons objectives and activities and to ensure the best dissemination of the project, the consortium will promote several dissemination activities during the entire project duration.

The dissemination activities will be addressed to the different targets (see section 4 - Stakeholders).

The list of NanoCommons dissemination events includes International workshops and conferences. The organisation of these events will be coordinated by relevant partners (as per the DoA and agreed roles and responsibilities), the details of the past and future activities are part of sections 5.1.1 and 5.1.2. All dissemination events are and will be announced on NanoCommons project website, in NanoSafety Cluster Newsletter and other press releases specifically targeting the various stakeholders.

Main events/conferences/workshops/meetings NanoCommons will organise or will take part of, will also be announced on the "Communication – News & Events" section of the website (https://www.nanocommons.eu/news-events). In addition, the entire consortium will make such announcements on their own websites.

5.3 Training

NanoCommons has a quite determinate plan for organising training events specifically tailored to the needs of the research (and industry) community in nanosafety assessment and ensuring that these training events are timed and designed to address the needs of the targeted stakeholders.

For the better organisation of the training activities some deliverables have been or will be prepared on: Training Needs Specification and Proposed Solutions – D8.1, followed by D8.2 - First Report on Training Activities, focussing on virtual tools and D9.4 - Series of Hackathons during second and third year of the project.

The training includes videos, webinars, recorded online hackathons, hands-on events at meetings, and summer schools. Training events will be co-organised and promoted by NanoCommons and NanoSafety

Cluster projects. At present, the following international events are foreseen to be specifically targeted with dedicated training sessions for promoting the NanoCommons TA services and JRAs:

- Recorded webinar series of OpenRiskNet tools, *i.e.* risk assessment e-infrastructure (Feb 25 2019 on the virtual research environment; Mar 18, 2019 on data curation; Mar 26, 2019 on linking data to AOPWiki; Apr 1, 2019 on semantic annotation; and Apr 4, 2019 on AOP database)
- NanoGenTools/Solutions Summer school at May 21 – 23, 2019 in Alexandria, Italy
- EuroNanoForum at Jun 12 - 14, 2019 in Bucharest, Bulgaria
- International Young Scientist Forum at Sep 8 - 9, 2019 in Salzburg, Austria
- NanoSafety Cluster Week at Oct 7 - 9, 2019 in Copenhagen, Denmark

5.3.1 Webinars

A webinar is a seminar taking place on the internet, allowing participants in different locations to see and hear the presenter and ask questions. Webinars are organised for inviting many stakeholders into the dialogue, sharing knowledge and best practice.

OpenRiskNet gave a series of webinars regarding their platform and the services they offer, which was also aimed to the NanoCommons partners. This is because, following OpenRiskNet's completion in November 2019 the OpenRiskNet platform will be integrated to and maintained by NanoCommons.

A series of internal webinars that will be presenting the tools and services offered through NanoCommons or matters of interest that will allow the partners to better understand the processes and needs of the various Nanosafety sectors will be held during the project lifetime. The public-facing webinars will be recorded and published as tutorials into the project website with the purpose to help user understand better how to access the project services.

5.3.2 Hackathons

A series of 6/8 hackathons will be organised within the NanoCommons project. So far, NanoCommons has co-organised two hackathons on data annotation.

The first hackathon for the consortium was organised during the NanoCommons general assembly in October 2018 in Athens, Greece in collaboration with the OpenTox Europe 2018 conference. During that hackathon and following two presentations on ontologies given by UoB, the ontology browser and KB was introduced by Biomax. The presentations were followed by a hands-on hackathon, during which the participants annotated a model dataset provided by the project and originated from data curated from the FP7 NanoMILE project. The event was also attended remotely by members of the Center for Sustainable Nanotechnology (CSN, Wisconsin, USA). CSN has approached NanoCommons with the wish to align their curation and data management efforts with those of NanoCommons.

Following this, UoB arranged and repeated the hackathon for members of CSN in December 2018 in Brussels. The collaboration with CSN is now ongoing and the NanoCommons partner CEINT is now in charge of training the CSN members to use the NIKC data curation template (see deliverable D3.2), which was identified as the most appropriate for their needs (i.e. in light of the need to store US-generated data in the US).

At a later time point, recorded hackathons for the entire research community will be published in NanoCommons library and stakeholders can access any training materials on the tools and services they are interested in and study it independently.

5.3.3 Summer Schools

NanoCommons is happy to contribute, where relevant and appropriate, to dedicated training schools organised by others projects.

For example, NanoCommons is co-organising a summer school in May 2019 with the projects NanoGenTools and SOLUTIONs. NanoGenTools is planning to record these sessions and make them available as a Massive Open Online Course (MOOC) which will also be promoted by NanoCommons and utilised as part of the repository of training materials developed by NanoCommons partners. The NanoCommons webpage will thus serve as an additional channel for disseminating these joint activities.

5.4 Networking

Each partner will be responsible for involving and informing their relevant contacts and network about the project. The project will also give the consortium the opportunity to expand their existing networks, by attending meetings, workshops and conferences.

In order to maximize the impact of NanoCommons project, networking activities for presenting TA to potential stakeholders are planned for the entire project lifetime.

A cooperation agreement was established with other EU research projects (i.e., ACEnano, NanoFASE, NanoSolveIT, RiskGone) to further promote the NanoCommons through their activities.

The NanoCommons project has also been affiliated to the NanoSafety Cluster, which ensures connection with a wide range of nano-projects. The NanoSafety Cluster is a cluster of European Commission-funded projects in the funding programs FP6 (2002–2006), FP7 (2007–2013), and Horizon 2020 (2014–2020) framework programmes, aimed at harmonizing the research done in these projects. The cluster coordinates work done by the NanoSafety Cluster projects to study and establish the safety of nanomaterials. Informal liaisons and information sharing through the existing contacts and other projects of the consortium partners will support wider diffusion of the NanoCommons project. Figure 15 summarises the NanoCommons activities to date in support of the NSC.

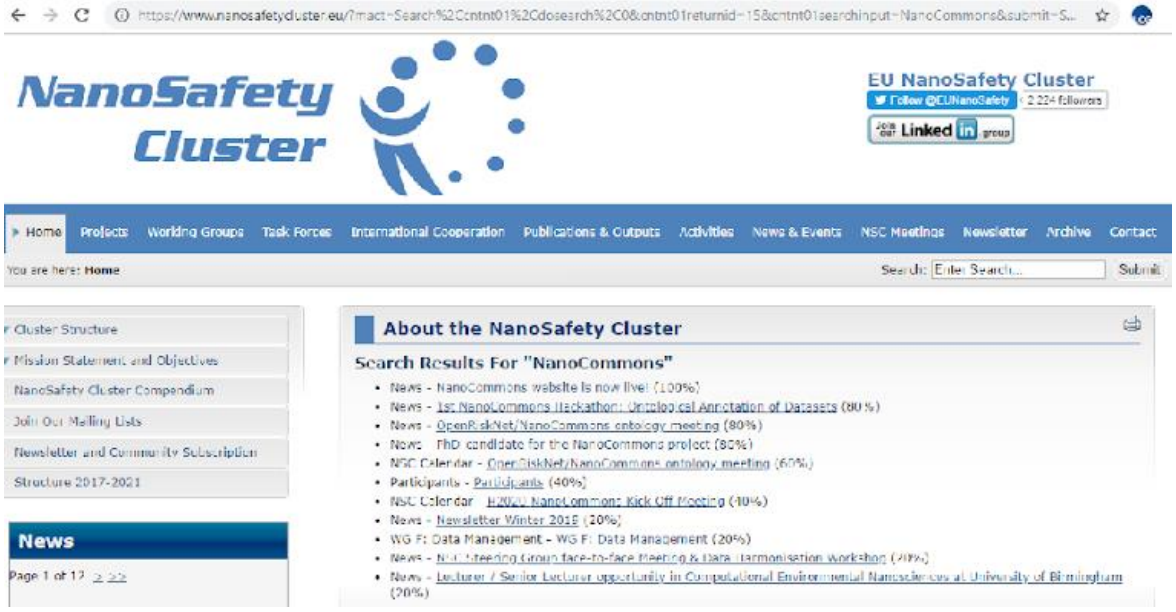

Figure 15: *NanoSafety Cluster Website - NanoCommons Articles*

A NanoCommons Consortium Meeting in conjunction with the OpenTox Europe 2018 Conference took place in Athens, Greece (8-9 October 2018). During the meeting the NanoCommons team discussed and built on the results from the ongoing tools for the nanosafety community survey, in order to prioritise the services that will be offered during the project's first open call.

During the same event, the first NanoCommons hackathon on "Ontological Annotations of Datasets" took place, and was open to the entire nano-community worldwide.

5.5 Publications

All partners will disseminate the project results by disclosing them to the public, including in scientific publications in any medium.

So far some general audience articles have been published in online scientific magazines such as: SciTech Europa Quarterly No. 30, with 2-3 more publications planned over the course of the project highlighting some of the key outcomes of relevance for European industry and regulators. Another article has been published into "Open Access Government" which is an online publication with target audience such as government ministers, European commissioners, members of European Parliament, industry associations and charities. Screenshots of these are shown in Figure 16.

The first scientific papers have also been submitted and will be disseminated shortly. A focus on Open Access publication is adopted as far as possible – the preferred option is Gold Open Access, but self-archiving via Green open access is also encouraged.

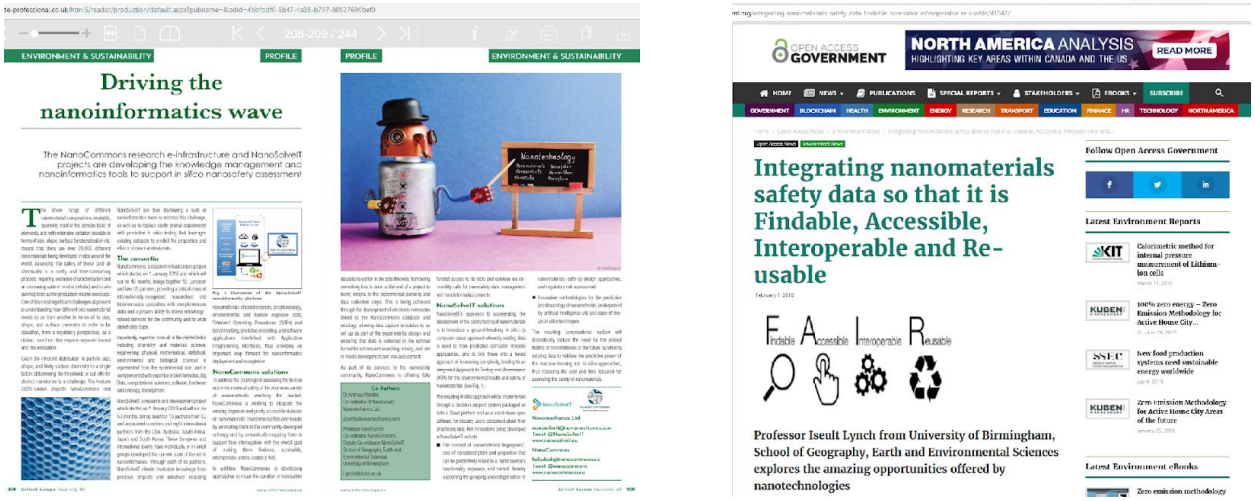

Figure 16: *NanoCommons general audience (government, regulators, industry) publications available online*

TA Users will also be expected to produce publications based on their NanoCommons work, which should include the relevant NanoCommons partners as co-authors and with the appropriate acknowledgments given to the NanoCommons project and EU Commission.

Reports from workshops, conference papers, and other articles will be published for the duration of the project. All project partners are committed to open access policies, and self-archive their publications and reports on their own institutions repositories. Archiving of the projects results and arising publications will also be undertaken on the projects website as appropriate.

All publications as well as reports and other outputs from NanoCommons will be available for download through the project's website. All outcomes should be assigned a DOI and published under a Creative Commons License for re-use. Peer-reviewed publications will be made available based on the requirements and DOi assignment of the specific journal. The rest of the published outcomes will be uploaded to and assigned a DOI through Zenodo (https://zenodo.org/), where UoB has created a NanoCommons community page (https://zenodo.org/communities/nanocommons/). All published outcomes are also linked to the NanoSafety Cluster (https://zenodo.org/communities/nsc) Zenodo page and linked to OpenAire (https://explore.openaire.eu/) to increase visibility and sharing with the scientific community.

5.6 Social Media

The project uses the three most popular social networks: Twitter, Facebook and LinkedIn. Social media platforms (Twitter/LinkedIn/Facebook) will be frequently posted and updated with NanoCommons news and information material to keep the information flow upright to increase and keep the interest of multiple audiences. Examples of the NanoCommons posts on these platforms are given in Figures 17 and 18.

The social media strategy aims at:

- Identifying and approaching persons and organisations already active in fields related to the project activities (e.g. professionals on LinkedIn)

- Get project/service well known through social media and call for "Action"

- Spreading news/content about the project: new research articles and public deliverables, project content, activities, news, results etc.

- Engaging social media followers, preferably by directing them to NanoCommons website and TA Helpdesk

- Creating interactive forums at International scale.

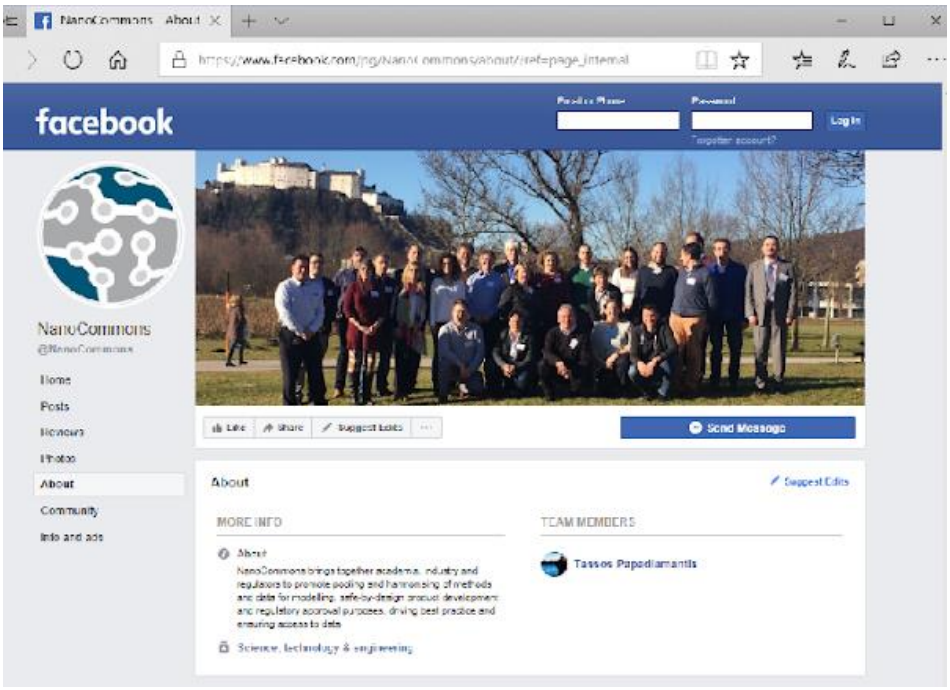

Figure 17: *Project Facebook Account*

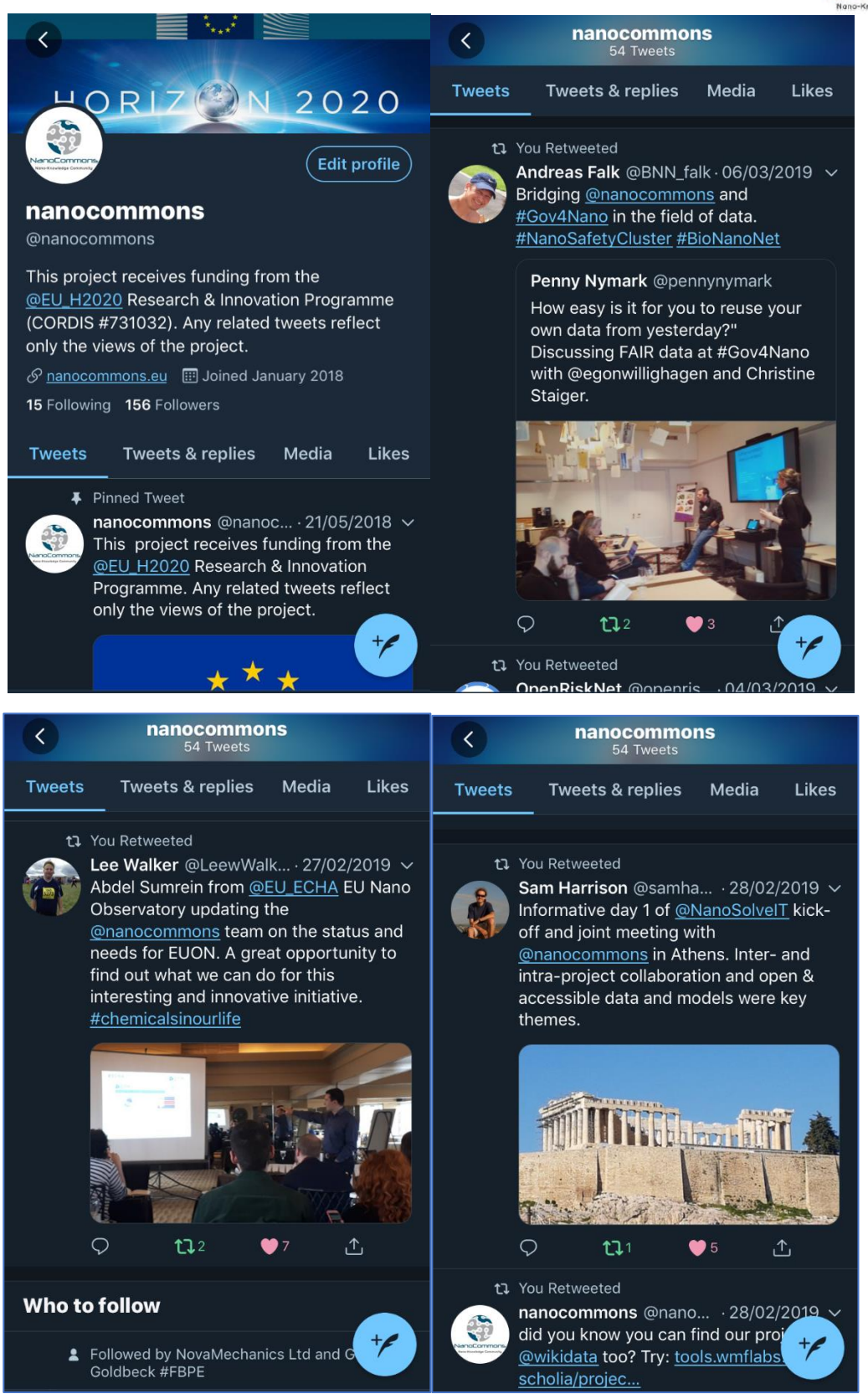

Figure 18: *Samples of Twitter messages*

6 Roles, Responsibilities and Timetables

Given the range of activities and target stakeholder groups, and to ensure that communication and dissemination are embedded into all aspects of NanoCommons, rather than having 1 single WP responsible for dissemination, as per many projects, we have several WPs each responsible for specific aspects of the dissemination activities, from community building, to supporting the TA activities (TA helpdesk), through the demonstration projects (case studies) that will showcase how the NanoCommons tools and services can provide value-add for users and facilitate the integration of data and tools that is not currently possible.

All partners are engaged in general communication and dissemination activities at the consortium level and partner level, as part of work packages 1, 2, 8 and 9 activities, covering community building, helpdesk, training based on the JRA outputs, and case studies, respectively.

Figure 19 below links the various WPs responsible for the different aspects of the dissemination, the lead partners can be seen in Table 2.

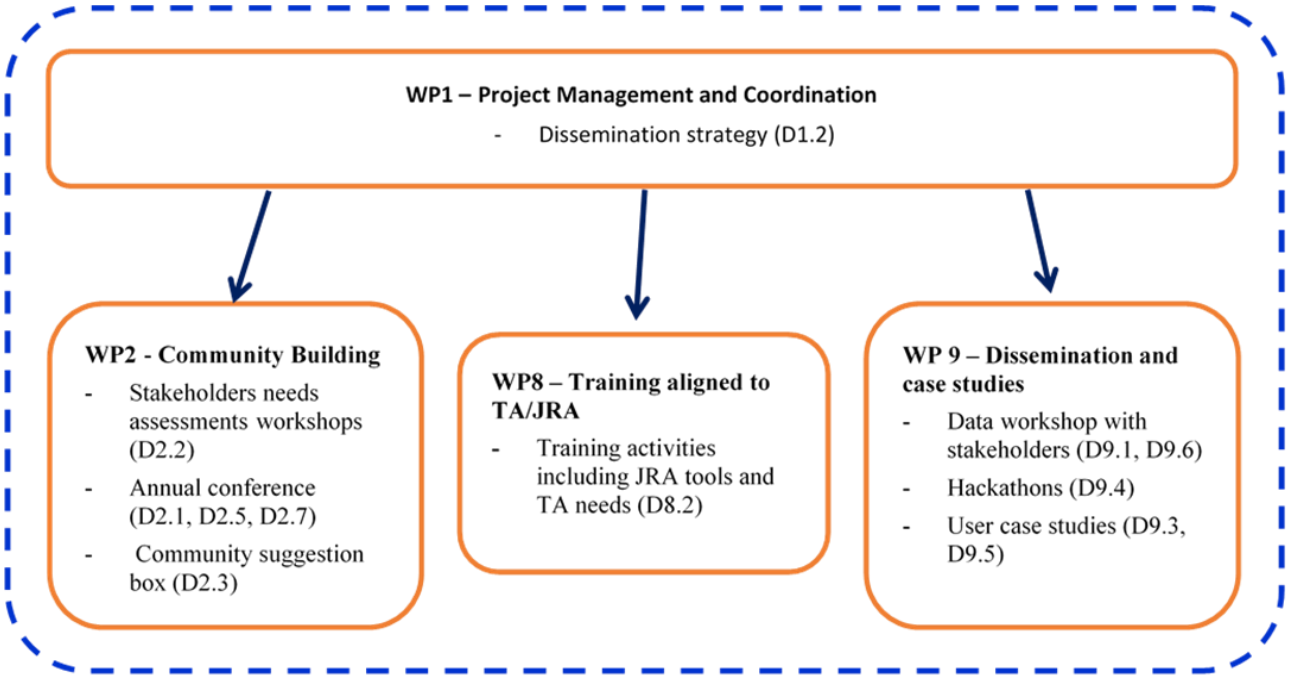

Figure 19: *WPs involving different aspects of the dissemination*

Partners will work together in locating and organising relevant activities and cooperate with stakeholders, relevant projects, clusters and initiatives.

Table 2 below summarises the list of dissemination activities and their associated deliverables, indicating also the lead partner responsible for delivery and the deadline for the report.

Table 2: *Overview of the dissemination deliverables from NanoCommons providing reports on the activities that collectively ensure delivery of the dissemination goal to the intended stakeholders.*

Deliverable N°	**Deliverable name**	**Lead short name**	**Time table**
D1.2	Dissemination Strategy	UoB	3
D2.1	1st Annual conference & nano-exploitation day, stakeholder workshop & User call	UoB	12
D2.2	1st set of stakeholder workshops and Report on Stakeholder feedback on usability of NanoCommons portal & tools	NERC	13
D2.3	Community suggestion box and 1st rolling call (and evaluation) –Action plan Year 2	UoB	13
D2.5	2nd Annual conference & nano-exploitation day, stakeholder workshop with TA calls and demonstrations	NERC	25
D2.7	3rd Annual conference & nano-exploitation day, social web activities, stakeholder workshop with TA calls/ demonstrations	UoB	37
D2.9	Final Annual conference & nano-exploitation day, social web activities, stakeholder workshop, TA Demonstrations	UoB	48
D8.2	First Report on Training Activities, focussing on virtual tools	DC	24
D8.4	Final Report on Training Activities and analysis of stakeholder groups reached	PLUS	42
D9.1	Workshops with different stakeholders	NERC	15
D9.3	First Demonstration cases selected	BfR	24
D9.4	Series of Hackathons during second and third year of the project	DC	36
D9.5	2nd series Demonstration cases selected	BfR	36
D9.6	Series of final dissemination workshops during the last year of the project	UoB	48

7 Conclusions

The dissemination strategy and plan aim to capture and schedule all dissemination relating activities of the project which will support the widening of the user-base and will increase public awareness of the new possibilities that are arising from the NanoCommons infrastructure.

The dissemination strategy assists NanoCommons project partners by defining communication goals, objectives and strategies with specified dissemination events to participate and dissemination activities to perform.

In conclusion, the NanoCommons project dissemination strategy employs a vast range of different ways in which to communicate about the project, ranging from a website and Twitter, LinkedIn and Facebook accounts, etc. and to disseminate the project through training (webinars and hackathons), to direct in person contact by attending conferences/workshops/meetings/events, NanoSafety Cluster meetings, etc.

The NanoCommons project partners will be implementing this strategy for the entire duration of the project and beyond.