

# BioNT - Network for Training

Deliverable 6.2 | Dissemination and Communication Plan



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Project partners

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2. BIOBYTE SOLUTIONS GMBH (BIOBYTE)
3. HPC NOW CONSULTING SL (HPCNOW)
4. UNIVERSITETET I OSLO (UO)
5. UNIVERSITAT DE BARCELONA (UB)
6. INFORMATION CENTRE FOR LIFE SCIENCE (ZBMED)
7. SIMULA CONSULTING (SIMULA)
8. ALBERT-LUDWIGS-UNIVERSITAET FREIBURG (ALU-FR)
9. ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE (EPFL)

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## Overview of the project

### Project overview

The BioNT consortium is dedicated to providing a comprehensive training program and fostering a community for digital skills relevant to the biotechnology industry and biomedical sector. With a curriculum tailored for both beginners and advanced professionals, BioNT aims to equip individuals with the necessary expertise in handling, processing, and visualising biological data, as well as utilising computational biology tools. Leveraging the consortium's strong background in digital literacy training and extensive network of collaborations, BioNT is poised to professionalise life sciences data management, processing, and analysis skills.

### Dissemination and communication plan in summary

The Dissemination and Communication Plan for BioNT plays a pivotal role in realising the consortium's objectives. It establishes a strategic approach to raise awareness about the project's activities, attract target participants, and disseminate information regarding the project's outcomes and long-term impact. This living document outlines the methodologies, tools, channels, and target audiences, while also ensuring flexibility to reflect the project's evolution. As outlined in the project proposal, BioNT's dissemination and communication efforts are primarily encompassed within Work Package 6, titled "Community and capacity building".

BioNT adopts an open source and open community model to ensure accessibility to project results and resources. The project's dissemination efforts include making deliverables

publicly available, developing training materials, and sharing video recordings. Internal communication is facilitated through regular meetings. External communication engages the larger BioNT community and stakeholders through online courses, the project website and social media platforms.

## Objectives of the dissemination and communication plan

BioNT's activities related to Dissemination and Communication mostly fall under the work package (WP) 6 "Community and capacity building", as reported in the project proposal. The four main aims of this WP are:

- Informing about the project activities and outcomes, including all the open-sourced educational material generated through the project, as well as relevant contacts and guidelines for content adoption.
- Establishing a collaborative environment to work with BioNT's beneficiaries, partners and stakeholders, as well as to facilitate content distribution to relevant audiences.
- Forging BioNT's synergies with initiatives, societies, infrastructures and projects that share similar goals (e.g. The Carpentries, CodeRefinery, ELIXIR, among others).
- Ensuring BioNT's long-term presence and sustainability, beyond the project's duration.

With these objectives in mind, the strategy laid in this document addresses the following aspects:

- Development and maintenance of BioNT's web portal and social media channels, informing about BioNT's progress, outcomes and events/workshops.
- Establishment of collaborative tools to develop and distribute open-source training materials and any other relevant documentation for the project.
- Organisation of a community event to increase awareness about the project.
- Advertisement of BioNT in European events from other existing initiatives.
- Creation of synergies between BioNT and other consortia and projects sharing similar goals.

## Project branding

### Visual identity

BioNT's visual identity is driven by the project's slogan: "Training and professionalisation in computational life sciences". Accordingly, the consortium has decided that BioNT's visual identity will include the following set of cohesive items:

- Logo
- Icon
- Colour palette

The theme for presentation, as well as the website, will include the European Union logo and follow the European Commission template and guidelines. The visual identity items will be shared in the project's relevant repositories and a package containing them will be

downloadable from the website, as part of task (T) 6.2 (project website). A guideline document for how to use the visual identity package will also be included in the package.

The logo consists of BioNT's name, together with a modern and simple icon representing a graduation hat, alluding to the training component of the project, and a DNA strand, which represents the life sciences. Different versions of the logo have been created, to ensure it fits the different formats and documentation where it would be included.



Figure 1: From left to right, BioNT's icon, logo with slogan, and logo version 2.

The blue in the logo is also to be used across the different platforms to highlight the project branding:

- HEX: 1B78A6
- CMYK: 84 28 0 35
- RGB: 27 120 166

Further information will be added to this document as the project progresses, mainly regarding a complementary colour palette.

## Printable materials

In order to facilitate dissemination, communication and advertisement of the project activities at conferences and related events, a document will be provided that will be printable both in A1 format as a poster and in A4 as a brochure/leaflet. The document will follow the visual guidelines described in the visual identity package, outline the project scope and list the communication channels to stay informed about it. BioNT partners will be encouraged to print and distribute such materials in all occasions they believe might be relevant, and the file will be downloadable from the website as part of T6.2 (project website).

## Slogan and hashtags for social media

The overall culture and aim of BioNT will be also conveyed through its social media platforms. In order to strengthen the project identity there, the consortium identified a tagline representing BioNT's goal: "Training and professionalisation in computational life sciences". This tagline will be used whenever relevant in BioNT communication channels, and embedded in the website header. In addition, these hashtags will be suggested to the project's partners and to participants to BioNT events, to use them to describe BioNT activities:

- #BioNT
- #NetworkForTraining
- #ComputationalLifeSciences

- #DigitaliseLifeSciences

## Stakeholder analysis

A complete stakeholder analysis goes beyond the purpose of the first version of the communication and dissemination plan, as it is an independent task in the project (T2.1). This task will outline the following aspects:

- Target audiences
- BioNT’s objectives in relation to each target audience
- Strategy to achieve those objectives

Personnel assigned to this task will include the stakeholder groups identified in the project proposal (reported below), update this list and keep it updated for the entire duration of the project. In addition, they will compile an inventory of social media channels of the partners’ and BioNT related entities, to facilitate the work of tagging them and keeping them involved through the social media interactions.

Followingly, are reported some sections of the project proposal that present the preliminary stakeholders analysis included there.

**Table 1.1 List of BioNT partners and roles, reported from the project proposal**

**EMBL** is the project coordinator, and leader of the **project management and coordination** WP. The Laboratory will commit the equivalent of two full-time staff positions to the project. The institution will coordinate the network, lead the internal communication and management tasks, organise the Community event and chair the project boards and meetings. EMBL contributes to the project with an experienced project management team, a financial department dedicated to European projects and a communication department. The Laboratory, highly international as distributed among six sites in Europe, is experienced in events organisation and in coordination of training programmes and activities aimed at bridging the academic and industrial sectors. It also provides the project computing facilities and well experienced staff, as well as a world-class leadership and training capacity. EMBL has a tight link to the Carpentries activities, organising several workshops per year (with most trainers and helpers being internal to the institution) and actively contributing to lesson development. In addition, EMBL is experienced in personalising the content (or, more often, the datasets and examples) of The Carpentries lessons to specific audiences. EMBL is involved in multiple related projects, as listed in other sections and in the list of previous projects table. EMBL is also tightly collaborating with **BIOBYTE**, entrusted with the **training needs in industry** analysis. Specialised in providing customised computational biology solutions and consulting, the SME is in the perfect position to best contribute and profit from an accurate analysis of the “training market”.

**ZB MED** is also committing to the project the equivalent of two full-time staff positions. It will be in charge of ensuring the **community and capacity building**, and entrusted with building the structure that will ensure the project sustainability in the future. It contributes to the project with expert trainers and training project management experts, high-quality communication skills and a wide network of collaborations. It is the German national library for medicine and serves as an infrastructure facility but also runs a broad bioinformatics research program. As speaker institution of two National Research Data Infrastructure (NFDI) consortia (NFDI4Health and NFDI4Microbiota) and member of two further ones (NFDI4DataSciencen and FAIRAgro [currently in evaluation]) it is a hub for the bio-medical research data and is involved in the cross-contia development of training solutions. It offers a diverse training program covering a wide spectrum of topics from basic research data management to good practice in research software development. ZB MED has several certified instructors, two instructor trainers, lesson maintainers, one Executive Council member and host the Regional Coordinator for the DACH region of The Carpentries.

**ALU-FR** will dedicate to BIONT a full-time staff position. Highly specialised and oriented towards training, in particular in the bioinformatics sector, the institution will distribute the effort among WPs and be a specific referent in the **communication with partner projects**, especially The Carpentries. The European Galaxy Team in Freiburg in ALU-FR is a research group working in the field of reproducible and accessible data analysis and genomics, with 10 years of experience in offering Galaxy as a service and training environment. As part of the German Network of Bioinformatic Infrastructure (de.NBI), ELIXIR and EOSC it is involved in national and international training activities. It has originated communities like Bioconda, BioContainers, Open Life Science and the Galaxy Training Network - all of them with more than 100 contributors.

**UO** contributes to the project with two expert trainers and is committing the equivalent of one full-time staff position. UO will lead the **training delivery** WP. UO is a Silver Partner to the Carpentries, an international successful community driven project with instructors, Trainers, Maintainers, helpers, and supporters who share a mission to teach foundational computational and data science skills to researchers. UO is also actively involved in the codeRefinery initiative that acts as a hub for FAIR (Findable, Accessible, Interoperable, and Reusable) software practices. Twice a year, CodeRefinery organises large onlinetraining events gathering more than 300 attendees each. In addition to years-long experience in training, it provides a very applied perspective to it in light of its collaborations with **SIMULA**, the partner that leads the **data analysis and information** WP. The two institutions are part of the Norwegian Artificial Intelligence Research Consortium (NORA) that aims at strengthening Norwegian research, education, and innovation in Artificial Intelligence. UO and SIMULA together join forces in leading high-quality training efforts in European northern countries, to a diverse audience from school teachers to scientists, from industry to Academia.

**UB** contributes to the project with 50% of an expert trainer in HPC topics, and its connection to the CECAM network of scientists that spans 14 EU countries. The CECAM network is over 50 years old, and annually coordinates an extensive calendar of events in advanced computational methods and their application to important problems in frontier areas of science and technology. CECAM has its headquarters at **EPFL** in Switzerland, and will coordinate event registration, communication, recording and publication for BIONT. UB is also involved in the project in light of its state-of-the-art infrastructural development and contribution, as well as its experience with advanced training networks and the deployment of technical training infrastructure. The University will lead the training design and development WP, and work in collaboration with its main partner CECAM.

**HPCNOW** is the business partner which will support the project's activities providing the technical infrastructure for the course execution. As is the case for all the business partners, it will also contribute to the lesson design by providing meaningful use cases to the training content. This will support inclusion and foster the specific target audience motivation in attending BIONT courses.

**Table 1.2 Preliminary list of stakeholders' categories, reported from the project proposal**

**Pharma and Biotech industries**, provided with extensive training materials featuring datasets, use cases and examples specialised to their use cases. The enhancement of their digital skills will outline new R&D and innovation branches.

**Scientific societies**, which will get access to the structure to implement high-quality, well tested and specialistic training in the context of their communities.

Possibly, **physicians and public healthcare staff**, expanding their comprehension of the infrastructural needs of Big and medical data storage, processing and analysis.

**Society at large**, with a particular focus on Life Sciences students of all ages, will be engaged in the project activities through the open source materials.

**Table 1.3 List of initiatives of similar scope to BioNT, reported from the project proposal**

<p><b>The Carpentries</b> is community teaching <b>foundational coding and data science skills worldwide</b>, through the activity of more than 3700 instructors. The Carpentries delivered more than 3,400 workshops to 87,300 learners (<a href="https://carpentries.org/workshops">carpentries.org/workshops</a>). The astonishing size and scale of the initiative is supported by a <b>structured system</b> including a very applied approach to learning, lessons developed collaboratively, and tested to move them through the multiple development state labels, certification and acknowledgment of instructors and other types of contributors, etc. <b>All the training providers</b> among BIONT proponents are involved in The Carpentries activity, and several staff members are certified instructors and some are instructors trainers. More details of The Carpentries model are presented in this proposal, as it highly inspired the BIONT structure. BIONT features the association's full support, as demonstrated by the <b>letter of support</b> attached to the current proposal and signed by The Carpentries' Associate Director.</p>
<p>Among the several associated but field-specific initiatives stemmed from The Carpentries during the years, <b>HPC Carpentry</b> (<a href="https://www.hpc-carpentry.org/">https://www.hpc-carpentry.org/</a>) teaches <b>high performance computing (HPC)</b> skills and tools. It features four core workshops explaining how to make best use of HPC in different coding languages and platforms. The University of Barcelona (UB) is the partner mostly linked to this project, although the HPC Carpentry lessons have been delivered also in other partner institutions.</p>
<p>While The Carpentries audience doesn't typically have any prior experience in programming, <b>CodeRefinery</b> (<a href="https://coderefinery.org/">https://coderefinery.org/</a>), funded by Nordic e-Infrastructure Collaboration, assumes that its audience already writes code and scripts, as it is aimed at teaching them <b>best software practices</b>. The University of Oslo (UO) is the partner mostly involved in CodeRefinery's activities, often hosting its workshops.</p>
<p><b>ELIXIR</b>, the ESFRI (European Strategy Forum on Research and Innovation) <b>Research infrastructure for life science data</b>, unites Europe's leading life science organisations and <b>all BIONT's proponents</b> in managing and safeguarding the increasing volume of data being generated by publicly funded research. It coordinates, integrates and sustains bioinformatics resources across its member states and enables users in academia and industry to access services that are vital for their research.</p>
<p><b>de.NBI</b> (German Network for Bioinformatic Infrastructure) provides computing infrastructure to support biocomputational research and training across Germany. The <b>federated de.NBI cloud</b> is distributed across 6 sites and has served as the <b>backbone of many training activities</b>, particularly those in virtual formats. Training offers range from <b>basic computational skills</b> and programming to <b>advanced topics</b>, in disciplines such as genomics, transcriptomics, proteomics, applied to human, plant, microbial biology and more. EMBL, ZB MED and ALU-FR are part of the network.</p>
<p><b>Open Life Sciences</b> (<a href="https://openlifesci.org/">https://openlifesci.org/</a>) is a <b>mentoring and training program</b> that, although not involving any institution explicitly, several project staff members (see 2.3) joined, in particular members of the European Molecular Biology Laboratory (EMBL), the German National Library of Medicine (ZB MED), the Albert-Ludwigs-Universität Freiburg (ALU-FR, including one of the project founders) and UO. The program supports individuals and stakeholders in research and industry in becoming Open Science Ambassadors, and promoting the FAIR and open source principles in their communities.</p>
<p>The <b>Galaxy Training Network</b> (<a href="https://training.galaxyproject.org/">https://training.galaxyproject.org/</a>) provides online training materials, connections to local training communities, and promotes open data analysis through the Galaxy tool. <b>Galaxy</b> is a <b>scientific workflow, data integration, and data and analysis</b> persistence and publishing platform that aims to make computational biology accessible. ALU-FR hosts the Freiburg Galaxy Team, and EMBL, ZB MED and UO partake in the network.</p>
<p><b>Gallantries</b> (<a href="https://gallantries.github.io/">https://gallantries.github.io/</a>) is a project funded by Erasmus+ bridging Galaxy and The Carpentries, and aimed at developing scalable, modular, eco-friendly, COVID-ready Bioinformatics Curricula. ALU-FR is leading this effort.</p>
<p>The Research Council of Norway (<a href="https://www.forskningsradet.no/en/">https://www.forskningsradet.no/en/</a>, involving UO) and Simula Learning (<a href="https://www.simulalearning.no/">https://www.simulalearning.no/</a>, SIMULA) lead <b>eX3, the Experimental Infrastructure for Exploration of</b></p>



**Exascale Computing** (<https://www.ex3.simula.no/>). The project aims at providing the national infrastructure for HPC researchers, Big Data users, data centre managers and the HOC industry as a whole.

NORA, the **Norwegian Artificial Intelligence Research Consortium** (<https://www.nora.ai/>), is a Norwegian collaboration involving UO and SIMULA and aimed at strengthening the local competencies in AI, machine learning and robotics, through research support, education and innovation.

Germany's **National Research Data Infrastructure (NFDI)**: Two of the applying partners are active in the German NFDI representing the consortia GHGA (German Human Genome-Phenome Archive), NFDI4Microbiota ([nfdi4microbiota.de](https://nfdi4microbiota.de)), NFDI4Health ([www.nfdi4health.de](https://www.nfdi4health.de)), FAIRAgro (<https://www.fairagro.net/index.php/de>) and NFDI4DataScience ([www.nfdi4datascience.de](https://www.nfdi4datascience.de)). All consortia offer training of digital literacies to researchers in the life sciences. Besides this, training is a cross-consortia topic addressed by a dedicated joint section of all so far funded 19 NFDI consortia.

## Dissemination

Dissemination, *i.e.* “make the project results public”, is an objective strongly embedded in the project structure. Not only several tasks are aimed at this, but the entire project activities are following an open source and open community model, allowing access to all the information, training materials and guidelines to interested trainees and contributors.

In particular, the project dissemination will be achieved through the following measures:

- All the deliverables (D1.1-D7.1) of the project will be made publicly available through the European Commission portal and the project website.
- Training materials will be developed and shared in the platform that is already used by the community of developers and maintainers that could be mostly interested in the course content. As an example, The Carpentries workbench will be used for the courses that originate from The Carpentries materials. This choice will ensure that the materials will be accessible at all stages to learners and the wider community of trainers for contribution and re-use.
- The video recordings of the lessons will be edited to cut the parts including interactions with the participants, made available and shared through the project portal (T4.8). Each video will be linked to the related training materials (T4.9).
- A selection of lessons of best interest for our stakeholders (according to the results of the training needs analysis T2.3) will be translated into the three main languages of BioNT's partners, German, Spanish and Norwegian, to reach even a wider audience of learners and avoid assuming that all possible audiences feel comfortable with English as a learning language.

## Communication

Communication will be both internal and external to the project consortium. The following sections outline the measures to “promote the action and results” in the two contexts. These will take advantage of three types of mailing lists:

- BioNT **internal mailing list** will collect contacts of all staff members of the partner institutions directly active in the project or collaborating with those active in the project.

- BioNT **advertisement mailing list** will include addresses of all the entities, projects or institutions that might have an interest in advertising BioNT activities to their audiences.
- BioNT **training mailing list** will collect contact information of the potential trainees for BioNT courses (past trainees or people that expressed interest in receiving the training courses announcements).
- **Guidelines for the internal organisation** of training workshops will be provided to ensure smooth and efficient execution of the work.
- A **Matrix chat** platform will be established to facilitate quick and effective communication among project members, as well as a tool for communication during the workshops and BioNT events.

Details on how this data will be collected and managed are included in the project's Data Management Plan.

## Internal communication

Representatives and members of the consortium will meet on several occasions to monitor and discuss the status of the project.

- **All-consortium meetings** will happen in correspondence with the project milestones (roughly twice a year). These meetings are designed to involve all participants in the discussion, but will also include a sub-section, the **supervisory board**, involving one representative (with voting rights) per institution. This is the organ that will be authorised to deliberate, negotiate and decide on the matters outlined in BioNT Consortium Agreement. Supervisory board meetings can be convened in cases of urgent matters to vote upon.
- A more restricted community will meet monthly, with the purpose to monitor the project progress and collect relevant information for the internal newsletter. This is the **executive board**, consisting of the coordinator, one representative of a training provider institution and one representative coming from industry, the latter two to be appointed by the supervisory board. The term will start on the day of the first supervisory board meeting and last one year, rotating among the partner training providers and the three SMEs along the project duration.
- At least quarterly, these meetings will also include the **quality and ethics committee** (all members of the executive board plus one representative from the trainers and one from the trainees communities) and the **sustainability committee** (with the same composition). These will be in charge of, respectively: Ensure accessibility, gender balance, ethics and transparency and serve as neutral parties to solve possible disputes; and elaborate and oversee the implementation of measures to ensure continuity of the project's efforts in the long term.
- As previously mentioned, the executive board meeting minutes will provide the opportunity for constant communication to all partners. Indeed, they will be turned into a **newsletter** that will be sent to the project internal mailing list.
- **Weekly check-in meetings** will be held to ensure regular communication and provide updates on project progress. These meetings will serve as a platform for discussing any challenges, sharing important information, and addressing any immediate issues that may arise.
- All the project administrative and management documents will be made accessible to all partners in **common folders** organised by the project coordination team. A **folder**

**structure guide** will be included in every main location to facilitate navigation. Details on the platforms used for this aim are included in the project's data management plan.

## External communication

Interaction with the larger BioNT community and other stakeholders will be sought through the following communication platforms:

- The main opportunities of interaction with the community will be BioNT's online **training courses**. The programme includes twelve training events in total, eight (two series of the four courses) belonging to the basic curriculum and four to the advanced one. The second iteration of the basic curriculum will be grouped around the same month of events, namely **BioNT community event**, which will also welcome representatives from the European Commission, as well as from other projects and initiatives in synergy with BioNT.
- The courses will be announced through multiple channels to reach the widest possible audience:
  - The Digital Skills & Jobs platform of the European Commission;
  - The ELIXIR portal TeSS, including training resources for leveraging computational resources in the life sciences - and implementing the Bioschemas training schema, hence making the Action result more visible into main search engines;
  - All the partners' platforms for course announcements;
  - BioNT website and social media.
- The **project website**, which will include introductory information about the project in multiple formats and languages, including the project branding materials previously presented in this document. The portal will also include the announcement of all courses, the project's deliverable and milestone reports, links to the training materials and recordings, and other information of public interest included in the project internal newsletter.
- BioNT will be initially active on **LinkedIn** and **Twitter**, even though other possible social media channels will be discussed along the project also based on the stakeholder analysis. The content planning for the social media channels will be developed around the project's activities, including the training courses, training materials and video recordings, the internal meetings and newsletter, relevant news about training and professional development of computational life sciences staff, European Union and Commission's relevant announcements, featured people among the partners and wider community.

## Conclusion

The BioNT project is dedicated to advancing computational life sciences through comprehensive training and open dissemination. By adopting an open source and open community model, BioNT ensures widespread access to project results and resources. Through effective dissemination measures, including publication of deliverables, development of training materials, and sharing of video recordings, BioNT reaches a broad audience. Translation of selected lessons enhances inclusivity for diverse learners. Internal

communication within the consortium is facilitated through various channels, ensuring transparency and addressing ethical considerations. Externally, BioNT engages with the community through online courses, the project website, and social media, fostering interaction and knowledge sharing.