



## Biobord Operating Model

*Explore the Service Paths of the Biobord.eu Platform*

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## 1. Introduction

Biobord is an open virtual innovation hub for bioeconomy developers. The hub offers a platform and space for a community of individuals to pursue innovative activity and entrepreneurship in bioeconomy. Biobord is developed in a partnership of four regions across Baltic Sea, Central Finland, Hedmark (Norway), Świętokrzyskie Voivodeship (Poland) and Vidzeme (Latvia). The development and piloting is supported by the 'Rural RDI Milieus in transition towards smart bioeconomy clusters and innovation ecosystems' – project (RDI2Club).

This document provides an overview of the network connected by the Biobord platform. The Biobord network forms a bioeconomy innovation ecosystem that can support the developers with commercialization of new bioeconomy products or services as well as improving the competitiveness, viability and sustainability of bioeconomy business. We strive to boost sustainable and profitable bioeconomy business with introduction of value-added products and services, application of new technologies as well as development of co-operation models, value chains and circular management of material and energy flows.

Following the introduction of the network, the concept of the Biobord platform is introduced along with the technical elements, user profiles and service paths. The operating model is elaborated as practical guidelines for definition, management and evaluation of the service paths. Finally, we present the platform policies, privacy policy and terms of use, for the Biobord forum as applicable in the piloting phase starting on September 2019.

The Biobord platform and operating model are developed with an iterative, user centered, service design process. This document, Biobord Operating Model version 1.0, represents the prototype in use for the pilot period September – December 2019. An upgrade of the platform and the operating model (version 2.0) is to be published on January 15, 2020, following the feedback collection and analysis from the first piloting round. Second upgrade is anticipated for August 2020 after the feedback collection and analysis from the second piloting round in spring 2020. This upgrade will guide the network activities and platform management after the piloting period as a long-term operating model.

During the piloting phase, we are testing Biobord with different user groups and service cases, including project lifecycle, network management, innovation calls and matchmaking, capacity building as well as connecting developers with product and business development services. With these regional and international pilot cases, we are developing the platform and its operational model further with the feedback and experiences of users. We plan to connect at least 400 bioeconomy experts to the platform via integrated activities of the regional hubs. Stakeholders and partners of the network are also invited to join the piloting to build the community of the innovation hub.

In course of the upgrades, the Operating Model will be enhanced with instructions related to new platform functionalities, good practices identified in piloting as well as the updates to the platform policies resulting from a network agreement on the long-term management of the platform. The network agreement will be modelled to enable new partners joining the network.

## 2. Biobord Network

### 2.1 Mission Statement

#### **Biobord – Connecting Bioeconomy Developers**

By 2030, the world will need 50% more food, 45% more energy, and 30% more water (Ministry of Employment and the Economy of Finland, 2014). The solution is bioeconomy that is based on the sustainable use of renewable resources as well as circular economy models. Bioeconomy utilizes clean technologies that enable the efficient use of natural resources and nutrients, while ensuring biodiversity and supporting climate change mitigation.

Our mission is to bring together bioeconomy developers to a joint table to solve global and local challenges with bioeconomy innovations. Biobord connects bioeconomy innovation networks around the Baltic Sea Region to share ideas, find partners and work together to create business opportunities in bioeconomy. Together we build knowledge and raise awareness on sustainable and viable bioeconomy business potential in the Baltic Sea Region.

Biobord is a place for you, if you are interested in viable and sustainable biobased business and networking with bioeconomy developers around the Baltic Sea Region. Find people with shared interests, team up and get support from our network of bioeconomy experts to build your business or launch your innovation to the markets.

Our growing network has been initiated by the following regions around Baltic Sea that specialize in bioeconomy:

- Central Finland
- Hedmark County in Norway
- Świętokrzyskie Voivodeship in Poland
- Vidzeme in Latvia
- Estonia

Together we are piloting Biobord.eu as a meeting, co-working and innovation forum for bioeconomy developers with a passion for rural viability and sustainability.

Join our journey and share your experiences with us to help us develop the Biobord.eu platform. We are piloting the platform as a part of RDI2CluB project in 2019-2020 to improve our service based on the user experiences.

### 2.2 Partner Regions

In the piloting phase, the Biobord network involves 12 partners around the Baltic Sea Region (partnership of EUSBSR Bioeconomy Flagship project, RDI2CluB).

1. JAMK University of Applied Sciences, Higher education and research institution
2. Regional Council of Central Finland, Regional public authority

3. SSYP Kehitys Oy Ltd., Business support organization
4. Inland Norway University of Applied Sciences, Higher education and research institution
5. Hedmark County Council, Regional public authority
6. Tretorget Ltd, Sectoral agency
7. Regional Science and Technology Centre, Business support organisation
8. Świętokrzyskie Voivodeship, Regional public authority
9. Foundation for Education and Social Dialogue PRO CIVIS, NGO
10. Institute for Environmental Solutions, Research institute
11. Vidzeme Planning Region, Regional public authority
12. Stockholm Environment Institute Tallinn Centre, Higher education and research institution



**Figure 1. Biobord Network in the Piloting Phase 2019-2020**

The partner regions and their regional innovation hubs are introduced here (2.2.1-2.2.4) in brief.

### 2.2.1 Bioeconomy Campus in the Region of Central Finland

<b>Our Hub</b>	<b>Bioeconomy Campus, Central Finland</b>
<b>Member organisations</b>	JAMK University of Applied Sciences (Institute of Bioeconomy); SSYP Kehitys Ltd (Business development agency) and SSYP Kiinteistöt Ltd (Building and premises management company); Vocational Institute of Northern Central Finland (POKE)
<b>Hub type</b>	Campus
<b>Innovation Driver</b>	Applied research
<b>Co-operation model</b>	Co-location and RDI project network
<b>Annual RDI volume (MEUR) of members</b>	JAMK (Institute of Bioeconomy; Saarijärvi) 1,5 M€ POKE (Natural Sciences, Agriculture and Forestry; Saarijärvi) 0,2 M€
<b>Staff</b>	JAMK: 52 in Bioeconomy Campus POKE: 46 in Bioeconomy Campus
<b>Established in</b>	2014 as Bioeconomy Campus (150 year history as a campus for agricultural and natural resource management education)

**Table 1. Basic Information of Bioeconomy Campus, Central Finland**

#### Special knowhow and expertise of the Hub

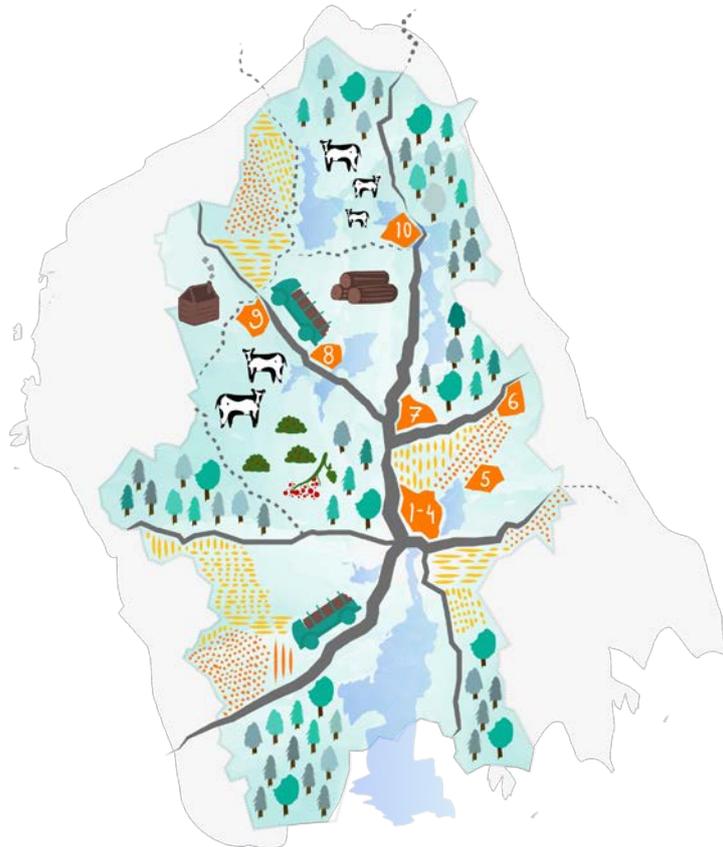
The Bioeconomy Campus is developed as a concrete meeting place for industry entrepreneurs, investors, researchers, developers and students with demonstration and pilot environments to illustrate the structures and functions of a future bioeconomy society as well as testing and prototyping services for development of new biobased products and services. Campus offers education in both higher and vocational level in selected areas in fields of natural sciences, agriculture and forestry.

The Institute of Bioeconomy is an active specialist, trainer and developer in the fields of rural entrepreneurship, agriculture, forestry, bioenergy and clean water. Our special competences include the operating and efficiency of bio heating boilers, the usability and properties of solid fuels, the development of bovine husbandry and the measurement and limitation of nutrient emissions in a rural environment. Our Degree Programmes include a Bachelor of Natural Resources (Agrologist) degree and a Master's Degree Programme, Bioeconomy Development. Institute supports lifelong learning needs of working life via many other continuing education initiatives and services.

#### Regional Smart Specialisation Strategy in Bioeconomy

Central Finland Vision 2040: Knowledge in agriculture and forestry, sustainable and diverse use of renewable raw materials and the technologies enabling this are the strengths of the region. Local, sustainable production of energy increases the local economy. Clear water and water technologies create new business. Local, clean food has big markets also internationally.

The development of bioeconomy is based on smart utilization of the natural resources. The sector has a leading role in export. Regional strongholds for bioeconomy development include forest resources and sustainable forestry; traditional, strong forest industry and knowledge as well as high-level research and development. (Regional Council of Central Finland, 2014.)



1. Wood fiber research centre of VTT Technical Research Centre of Finland (Jyväskylä)
2. Kangas living lab for resource wisdom (Jyväskylä)
3. Kasvu Open Carneval - growth track mentoring and competition for SMEs (Jyväskylä)
4. Ylistörinne and Mattilanniemi campuses of the University of Jyväskylä with laboratories and Nanoscience Center (NSC) (Jyväskylä)
5. Recirculating aquaculture research site (Laukaa)
6. Konnevesi Research Station of the Department of Biological and Environmental Science at the University of Jyväskylä (Konnevesi)
7. Bioproduct mill and industrial ecosystem (Äänekoski)
8. Bioeconomy Campus (Saarijärvi)
9. Wood construction hub (Karstula)
10. Inventors week (Viitasaari)

**Figure 2. Central Finland Bioeconomy Hotspot Map (illustration by Diana Pitkänen, 2019)**

### 2.2.2 ALB Bioeconomy Centre in Hedmark County, Norway

Our Hub	ALB Bioeconomy Centre in Hedmark
Member organisations	INN - Inland Norway University for Applied Sciences (ALB - Faculty of Applied Ecology, Agricultural Sciences and Biotechnology); Statsbygg (Governmental property manager)
Hub type	Centre of Expertise
Innovation Driver	Applied Research
Co-operation model	Co-location and network
Annual RDI volume (EUR) of members	1.57 MEUR
Staff	50
Established in	2017

**Table 2. Basic Information of ALB Bioeconomy Centre in Hedmark County, Norway**

#### Special knowhow and expertise of the Hub

Department of forestry and wildlife management has established a hub for operational projects in applied ecology, in progress to include services for the whole faculty in a triple helix structure. Today the center collaborates with various SME's in regard of management and development issues concerning real estate development, tourism, forest, wildlife, and fisheries management.

In NCE Heidner Biocluster, Department of Biotech co-locates and collaborates with business development agencies and leading national companies in livestock, plant breeding, aquaculture i.a. The cluster's core activities are related to supplying essential input factors to the food production value chain, such as genetic material, feed and fertilizers, as well as utilising and adding value to the residual materials. Department of Agricultural Sciences is co-located with providers of various services in public administration, politics, consulting and finance aimed at farmers at Blæstad Agricultural Center.

Research activity and education on Bachelors-, Masters- and Ph.D.-level is focusing sustainable management and development in wildlife, fish, forestry, plants and livestock – including products and services originated in nature and biological material.

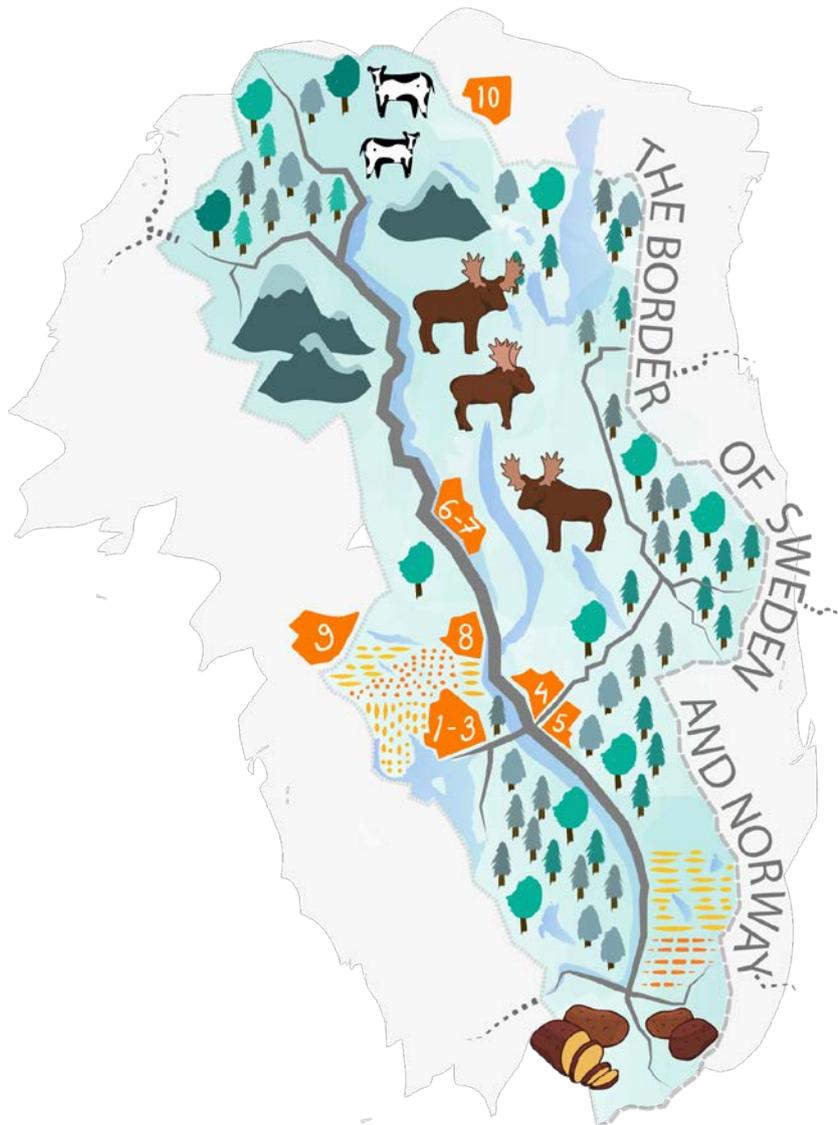
#### Regional Smart Specialisation Strategy in Bioeconomy

The Inland Region – a leading powerhouse for a sustainable bioeconomy in Norway.

Strategies:

- Develop and reinforce strong expert bioeconomy environments in all parts of the Inland Region.
- Initiate research, development and innovation projects/programmes (multidisciplinary/intersectoral/ international).
- Secure relevant and attractive expertise.

- Facilitate the effective establishment of bio-based industry and commerce.
- Work to attract investors and entrepreneurs.
- Work to increase market opportunities for bio-based products.
- Contribute to increased sustainable production in agriculture, forestry and inland fish of high quality and, wherever possible, based on inland resources.
- Work towards the sustainable and knowledge-based management of the region's bio-resources.
- Develop the region further within residual resources and the exploitation of return streams.
- Encourage more cluster projects and strengthen the interaction between stakeholders within innovation.
- Cooperation, simplification and coordination of the funding agencies for result-oriented funding allocation.
- Develop arenas for information, dialogue and cooperation further, including from an international perspective.
- Raise the level of awareness in society and business of the need to shift to a circular economy based on biological resources and expertise.



1. Heidner Biocluster for innovations in sustainable food production, Hamar
2. Biotechnology research center of INN
3. The Norwegian Forest Seed Station, Hamar University, Hamar
4. Glommen Skog SA (forest owners association)
5. Tretorget, Elverum
6. Living Lab for Zero Emission Building, Evenstad Campus of INN University
7. ALB Bioeconomy Centre, Evenstad Campus of INN University
8. INN School of Business and Social Sciences (HINN Rena)
9. Mjøsen Skog SA (forest owners association)
10. Røros Food

**Figure 3. Hedmark Bioeconomy Hotspot Map (illustration by Diana Pitkänen, 2019)**

### 2.2.3 Bioeconomy Knowledge and Development Center in Świętokrzyskie Voivodeship, Poland

<b>Our Hub</b>	<i>Bioeconomy Knowledge and Development Center</i>
<b>Member organisations</b>	<ul style="list-style-type: none"> <li>• R&amp;D (Regional Science and Technology Center);</li> <li>• Business (Reslab Ltd.);</li> <li>• Regional self-government authority (Marshal Office of the Świętokrzyskie Voivodeship);</li> <li>• Media (Telewizja Polska S.A., Kielce branch);</li> <li>• Science (PhD Anna Rabajczyk);</li> </ul>
<b>Hub type</b>	Centre of Expertise
<b>Innovation Driver</b>	Policy
<b>Co-operation model</b>	Network
<b>Annual RDI volume (EUR) of members</b>	N/A
<b>Staff</b>	1 – administration
<b>Established in</b>	The letter of intent signed in 2019. The Center's daily operations will be governed by the reviewed Statute and Organizational By-laws of the Regional Science and Technology Center, expected to enter into force in 2019.

**Table 3. Basic Information of Bioeconomy Knowledge and Development Center in Świętokrzyskie Voivodeship, Poland**

#### Special knowhow and expertise of the Hub

Bioeconomy Knowledge and Development Center, operating within the Regional Science and Technology Center, is expected to become the animator of bioeconomy and biobusiness development activities. The Center will be a place where business entities (SMEs) from production, services, consulting sectors can exchange their experience, know-how or establish direct cooperation between themselves and the following branches: R&D, local government, science, education and media.

The main goals of the Center are:

- assistance in SMEs projects' management planning and implementation,
- networking – finding and maintaining contacts within triple helix,
- introducing the bioeconomy as a part of new RIS.

#### Regional Smart Specialisation Strategy in Bioeconomy

Bioeconomy is already part of four out of seven smart specialization of the Świętokrzyskie Voivodeship (resource-efficient construction industry, modern agriculture and food processing, sustainable energy development, health and health-promoting tourism). However, as the region has started working on the 'Development Strategy of the Świętokrzyskie Voivodeship 2030+' in

2019, it is planned to put more stress on unlocking the full potential of the region through sustainable development of the regional bioeconomy.



1. Regional Municipal Waste Installation “Promnik” for RDF production, Promnik
2. Green Energy Block in Połaniec Power Station
3. Defro, Production and R&D on 5th generation furnaces for gasification of pellets, Strawczyn
4. Sawmill Olczyk, Krasocin
5. Seed-Arboretum Farm, Sukowo-Papiernia
6. Kielce Trade Fairs, Kielce
7. Arabian horse breeding, Michałów
8. Regional Centre for Science and Technology, Chęciny
9. Solar Power Plant Tuczepy 1 and 2, Dobrów

**Figure 4. Świętokrzyskie Voivodeship Bioeconomy Hotspot Map (illustration by Diana Pitkänen, 2019)**

## 2.2.4 Latvian food and bioeconomy cluster in Vidzeme Region, Latvia

<b>Our Hub</b>	<b>Latvian Food Bioeconomy cluster</b>
<b>Member organisations</b>	<p>Public sector organization:</p> <ul style="list-style-type: none"> <li>Vidzeme Planning Region (regional development institution/ public)</li> </ul> <p>Companies:</p> <ul style="list-style-type: none"> <li>Ltd Aloja-Starkelsen</li> <li>Ltd Valmiermuižas alus</li> <li>Ltd Felici</li> <li>Ltd Konso</li> <li>Ltd Very Berry</li> <li>Ltd Dimdiņi</li> <li>Ltd Skrīveru Saldumi</li> <li>Ltd Rāmkalni Nordeco</li> <li>Ltd EKOTRI</li> </ul> <p>R&amp;D organizations:</p> <ul style="list-style-type: none"> <li>Institute for Environmental solutions</li> <li>Institute of Agricultural Resources and Economics</li> <li>Institute of Horticulture</li> <li>Vidzeme University of Applied Sciences</li> </ul> <p>+ 15 Associated partners in the cluster network (SMEs and University)</p>
<b>Hub type</b>	Cluster
<b>Innovation Driver</b>	Businesses, with the support of R&D members and Vidzeme Planning Region
<b>Co-operation model</b>	Membership
<b>Annual RDI volume (EUR) of members</b>	N/A
<b>Staff</b>	1 part-time Managing director of the cluster
<b>Established in</b>	Cluster established as a network in 2010, current legal status formalized and cluster as a membership organization established in 2015

**Table 4. Basic Information of Latvian food and bioeconomy cluster in Vidzeme Region, Latvia**

### Special knowhow and expertise of the Hub

Cluster facilitates the development and market uptake of high value added and healthy food & beverages products, promotes knowledge and technology transfer between cluster members, develops and implements new projects and helps cluster members to internationalize their activities and find business and research partnerships abroad.

Cluster core members and network participants are companies focusing on healthy, high value added, organic and gourmet niche food and beverages production, public support organizations, universities and R&D institutions focusing their research activity in bio-economy areas.

Main priority focus areas of the cluster are:

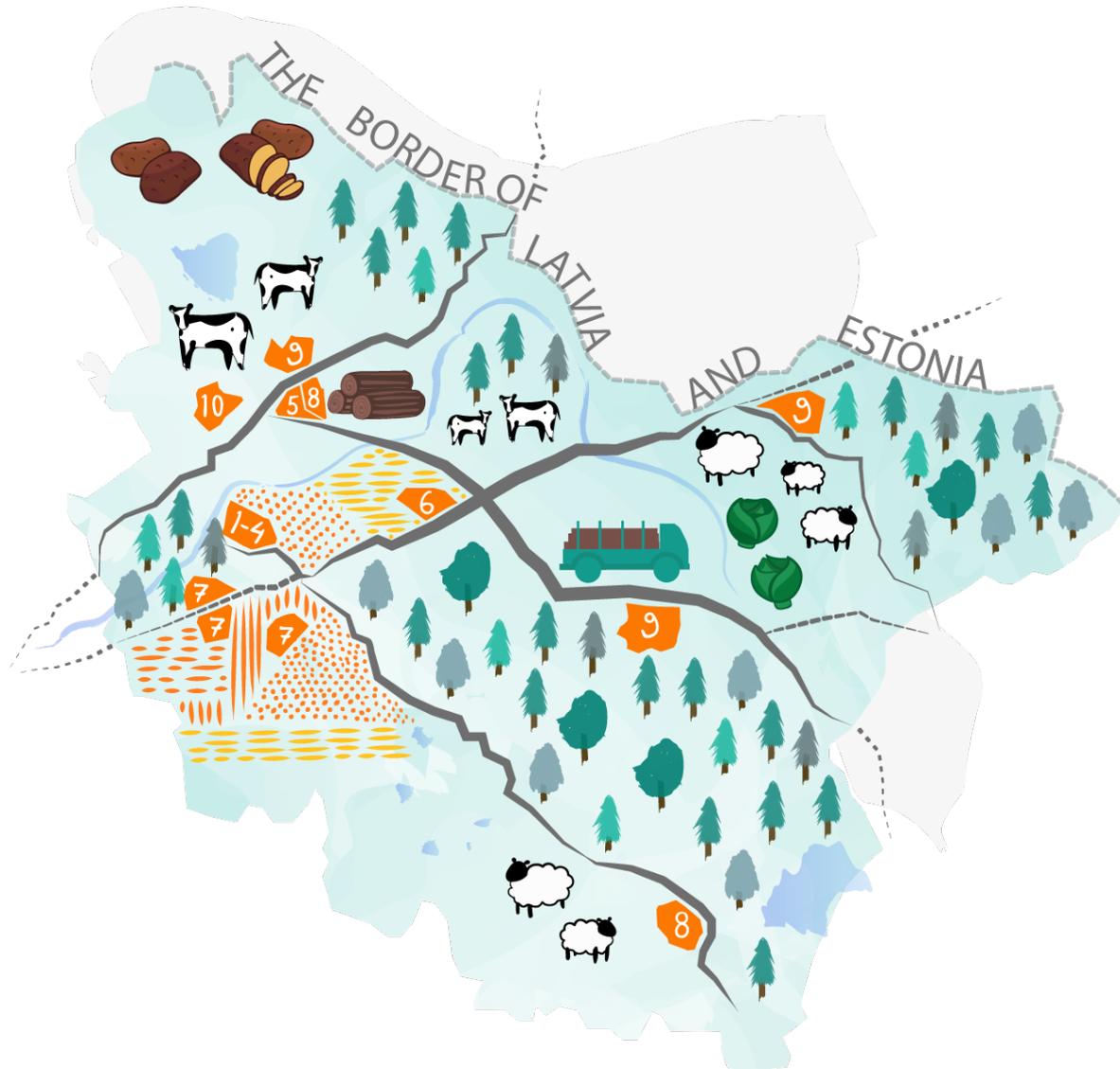
- Product and technology development;
- Networking, training and knowledge transfer;
- Internationalization

Cluster companies have strong knowhow in craft, organic, natural, high added value and healthy food and beverages product development, production and export. SMEs and R&D members have developed strong knowledge in the fields of plant-based products (vegetables, fruits and berries, medicinal and aromatic plants, plant-based proteins, plants and crop selection, plant genetics) and are increasing the use and valorization of valuable production side-streams.

### **Regional Smart Specialisation Strategy in Bioeconomy**

Priorities of Latvia National Bioeconomy Strategy (LIBRA) 2030 (adopted in 2017) are investments in research, innovations, and skills; reinforced policy interaction and stakeholder engagement; enhancement of markets and competitiveness in bioeconomy; stimulation of sustainable, efficient, and “green” economy. LIBRA is a long-term strategy for Latvia RIS3 direction “Knowledge-intensive bioeconomy”. This strategy outlines the development objectives, directions, and conceptual measures of bioeconomy. Strategy implementation is coordinated by the Ministry of Agriculture.

In the Vidzeme Region Sustainable Development strategy 2030 and Vidzeme Development Programme 2015-2020, Vidzeme planning region has outlined a regional smart specialization areas corresponding to the nationally defined RIS3 area “ Knowledge-intensive bioeconomy”: High added value wood-based products; Healthy food and beverages production; Biomass usage for energy and chemical conversion.



1. Institute of Agricultural Resources and Economics
2. Institute for Environmental Solutions
3. Vidzeme Planning Region
4. Riga Technical University Cēsis branch
5. Vidzemes University of Applied Sciences
6. Stora Enso Wood Products GmbH
7. Latvian wood construction cluster
8. Investment and Development Agency of Latvia (LIAA) Business Incubator
9. Food Bioeconomy Cluster
10. ZAAO Ltd. (waste management services, education centre)

**Figure 5. Vidzeme Bioeconomy Hotspot Map (illustration by Diana Pitkänen, 2019)**

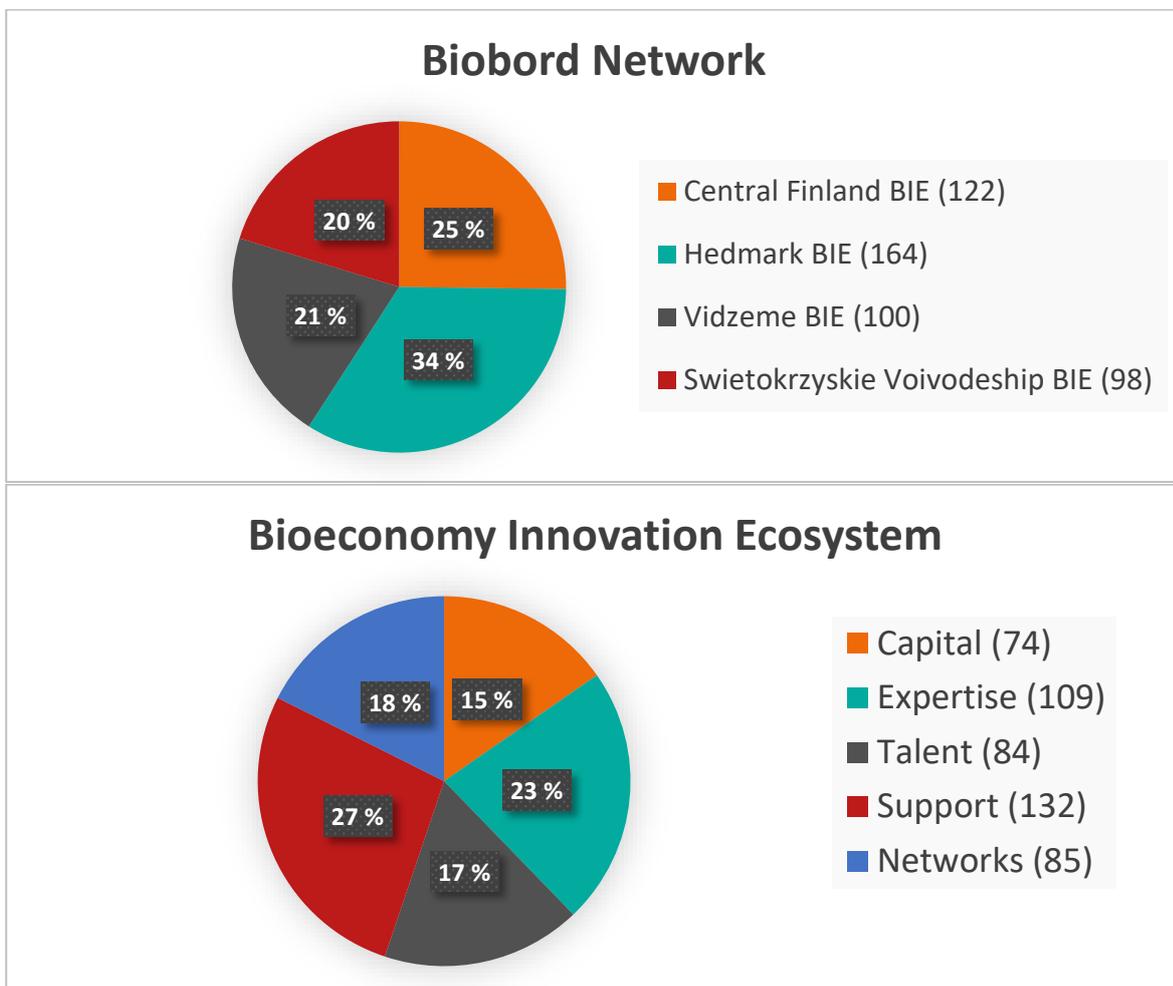
### 2.3 Network Analysis

In order to analyse the Biobord network potential, the regional hubs have carried out a mapping of their connected bioeconomy innovation ecosystem. The bioeconomy innovation ecosystem (BIE) diagram depicts the network build around a bioeconomy innovation hub extending to regional, national and international levels. As per innovation ecosystem theory, the system involves innovation services related to access to support, talent, capital, expertise and networks. The mapping method has been described in more detailed in annex 1.



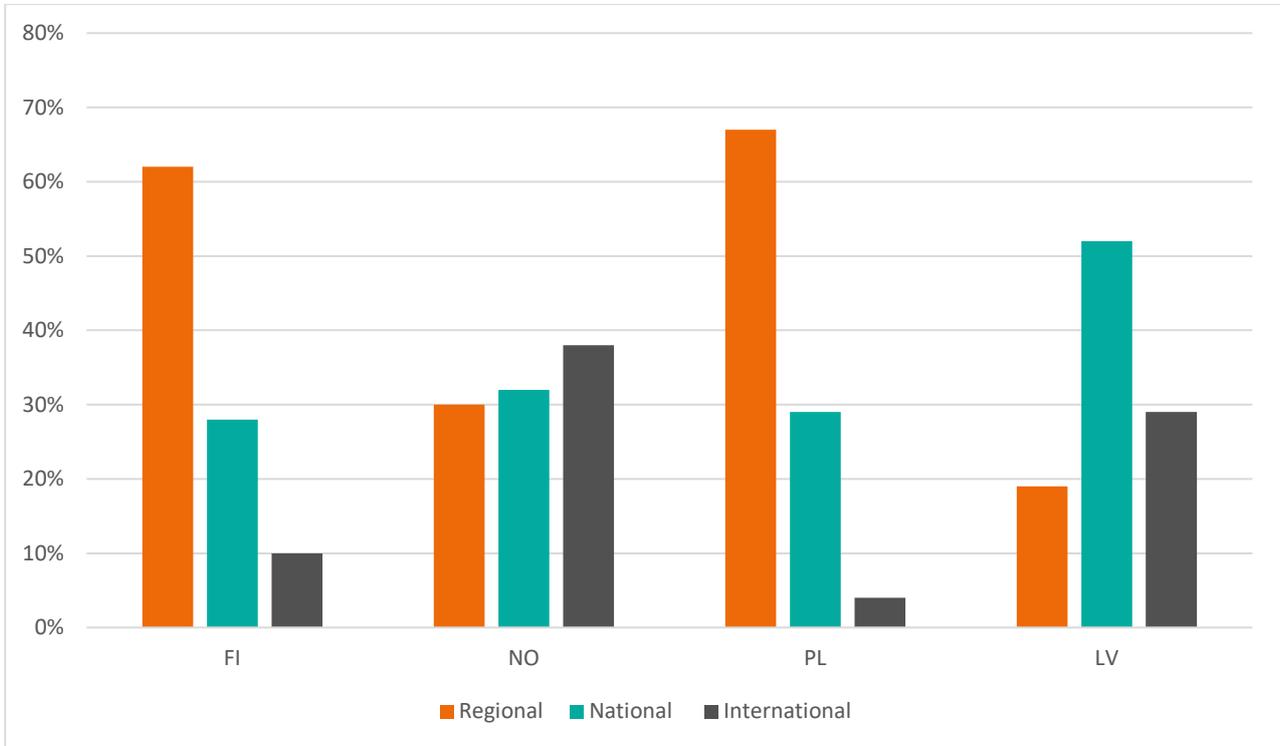
**Figure 6. Bioeconomy Innovation Ecosystem**

Each of the hubs connected in the Biobord network carried out the bioeconomy innovation ecosystem mapping on their existing partnership and co-operation networks. The results indicate that the total ecosystem comprises of 484 organisations connected via the four hubs. The resulting network has a quite balanced structure of different innovation ecosystem services with the highest share of ‘Support’ actors (27 %) and the lowest share of ‘Capital’ services (15 %).



**Figure 7. Bioeconomy Innovation Ecosystem of the Biobord Network (Mapping RIS data collected in 2018, RDI2CluB)**

As the methodology was newly created, there were some regional variations in the compilation of the statistics. Therefore, the regional comparisons are not fully reliable. However, they do give an indicative picture of the main connections of the hubs, which allows us to make some tentative conclusions on the RIS network profiles of the regional hubs as well. Nevertheless, it should be noted that the number of connections does not give a full view of the quality of the co-operation, but an indication of the co-operation potential and focus of network building.



**Figure 8. Geographic scope of the networks of the Hubs with percentage of network partners on regional, national and international spheres. (Mapping RIS data collected in 2018, RDI2Club)**

In Figure 9, a comparison of the regional hubs' bioeconomy innovation ecosystem connections is presented. The percentages represent the share of the hub's connections that represents certain innovation service profile and international connection. The data on the connections of the regional hubs paints a picture of the focus areas and development level of regional bioeconomy innovation ecosystems and may reveal some gaps in the regional networks.

Looking at the regional hubs and their connected network, ALB Bioeconomy Centre in Hedmark County, Norway, has a high share of international partners in their network (38%). They have also the strongest connection to capital and expertise. Bioeconomy Campus, Central Finland is well connected regionally (62 %) and has the strongest connection to talent and networks. Bioeconomy Knowledge and Development Centre in Świętokrzyskie Voivodeship has the highest share of support connection (48 % of their network) and a strong regional focus (67 %). The Latvian Food Bioeconomy Cluster has a strong national focus in their network along with a strong international connectivity. Connections to expertise (26 %) and support (35 %) compile the most significant share of the network actors of Latvian Food Bioeconomy Cluster.

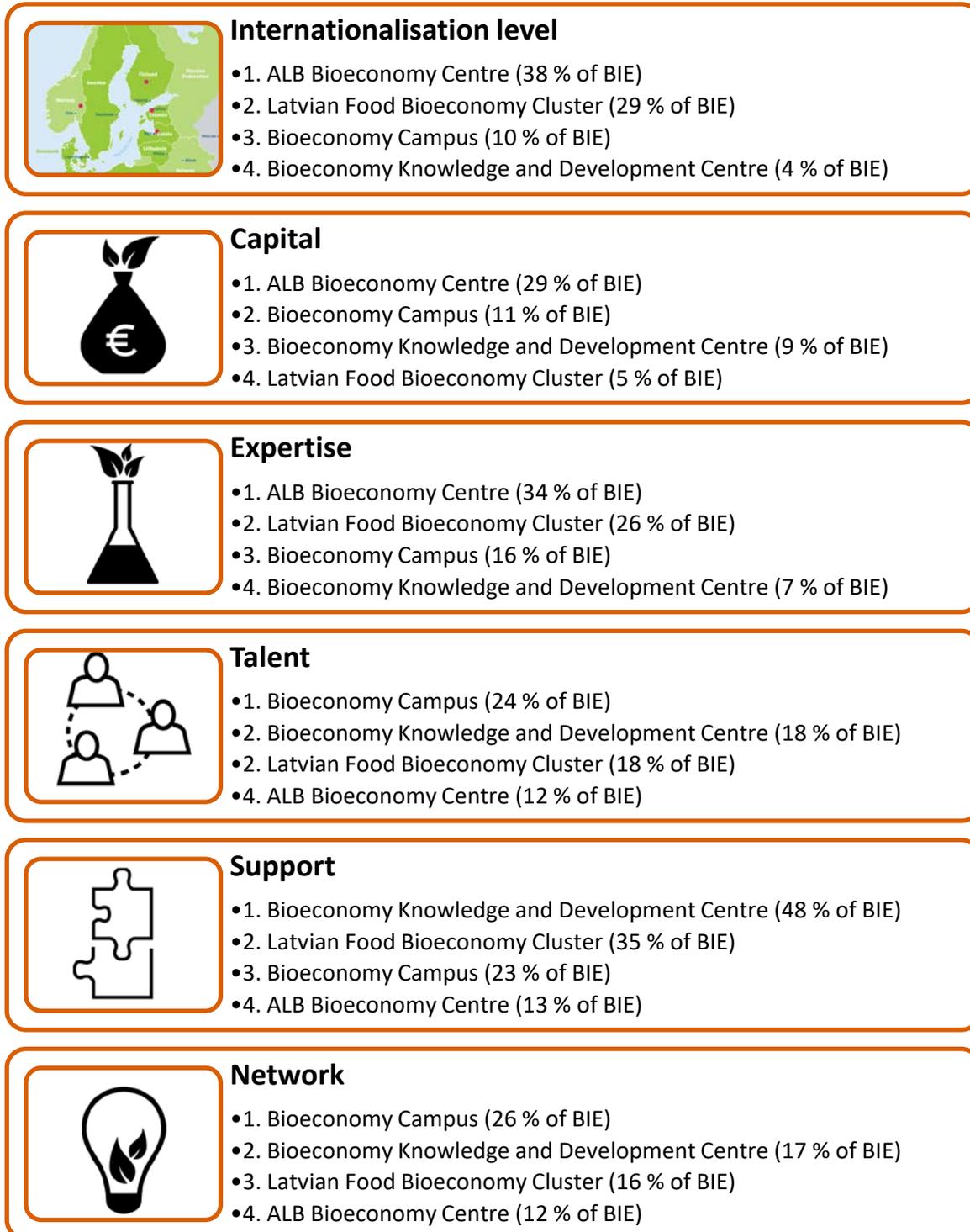


Figure 9. Comparison of Regional Hub-centered Bioeconomy Innovation Ecosystems

### 3. Biobord Platform

#### 3.1 Concept of Innovation Hub

In the Biobord network, our approach is to connect different fields of knowhow with the traditional bioeconomy business and entrepreneurs via development of an innovation hub. Innovation hubs are social communities, workspaces or research centres that provide subject-matter expertise on technology trends, knowledge and strategic innovation management, and industry-specific insights. These hubs enable active knowledge transfer between researchers and business experts, as well as industry, government and representatives of academia. (Toivonen, T. & Friedereci, N. 2015; Gryszkiewich, L. & Friedereci, N. 2014.)



Figure 10. Innovation Hub (illustration by Diana Pitkänen, 2018)

Innovation hubs deliberately stimulate collaborative innovation activities in a variety of ways. Co-location and co-working principles are some of the basic methods they apply. Innovation hubs also share online spaces and collaboration technologies. Hubs regularly apply methods considered part of the open innovation paradigm, such as crowdsourcing, co-creation, design thinking, service design, user innovation or their variations. (Toivonen, T. & Friedereci, N. 2015; Gryszkiewich, L. & Friedereci, N. 2014.)

The innovation hub is a meeting place that brings together the needed talent for generating ideas and for developing the ideas further. In the innovation hub, bioeconomy start-ups can build their business plans with the help of the hub's services and expertise. Along the innovation path, the entrepreneurs get tools and support for product development and commercialization.

The testbeds, laboratories and pilots provide an opportunity to test and validate the products. New business ideas spark from creative encounters between people of diverse knowhow. (Toivonen, T. & Friedereci, N. 2015; Gryszkiewich, L. & Friedereci, N. 2014.)

Developing an innovation hub in a rural context is challenging due to the limited number of actors, lack of diverse expertise and distances. In Biobord, we propose to build an innovation hub via capitalisation of regional and inter-regional networks as well as digitalisation. Digitalisation can connect local hubs together to provide a larger pool of expertise, talent and resources for bioeconomy innovation around the Baltic Sea. A digital platform, Biobord, offers a virtual transaction and meeting space. The connection of the hubs together is not enough, but the hubs need to build also their regional networks for capitalizing on the urban-rural connections and the bioeconomy innovation ecosystem surrounding them.

### 3.1.1 Triple Helix in Biobord

The triple helix model of innovation refers to various interactions between academia, industry and governments to foster economic and social development. Triple helix interactions are often the base for institutions like technology transfer offices and science parks. In Biobord network, there is a triple helix base in each of the four regions, where one partner represents academia, another represents the regional government, while a third partner represents the interests of the business sector. The user profiles of Biobord involve the actors of the triple helix and allow their interplay and co-operation. (Grundel & Dahlström, 2016.)

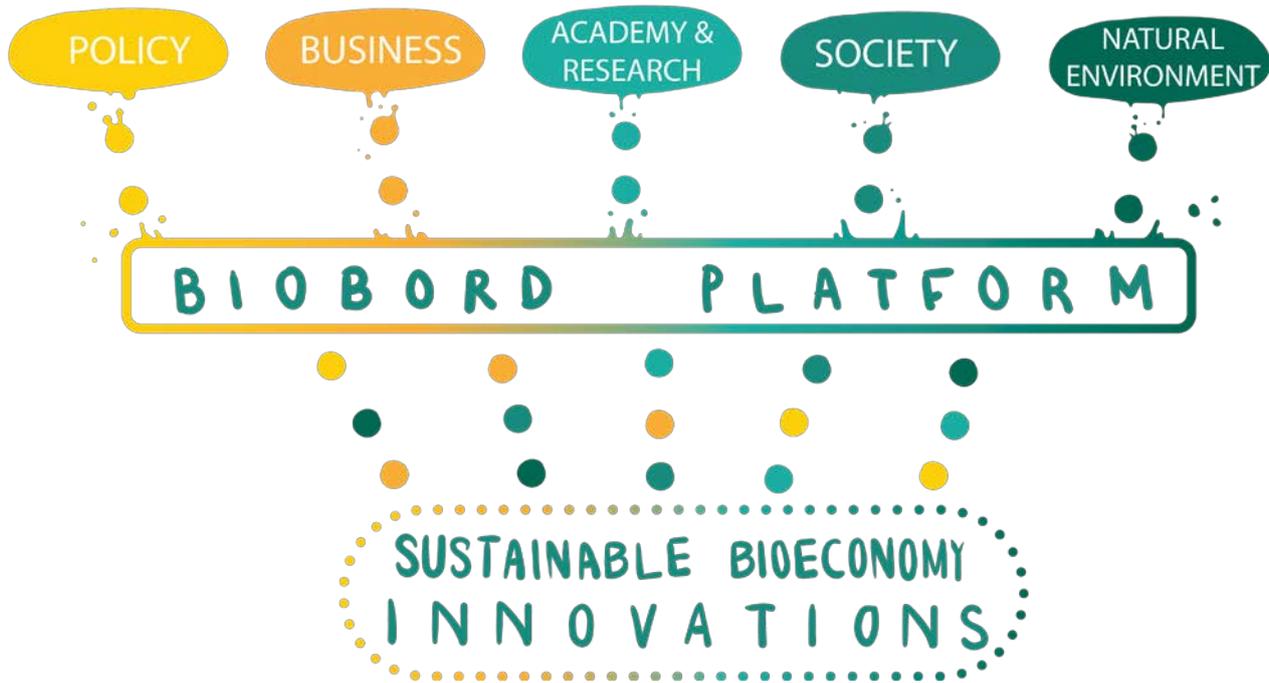
### 3.1.2 Quadruple Helix in Biobord

A quadruple helix system is a widening of the triple helix system by including a fourth helix, civil society, in the innovation system. While the traditional triple helix system has a top-down perspective, the quadruple helix system is more of a bottom-up system with a participatory approach. Civil society is invited to a dialogue on the regional development strategies. Civil society can be a resource for SME's adapting to market demands without the risks involved in product development, by user oriented or user driven open innovation, in other words making the consumers part of the innovation process. The consumers join the open innovation process for development of new products and design of better services. (Grundel & Dahlström, 2016.) In Biobord, the user profile 'supporter' is focused on potential to connect the civil society actors to the operations of the innovation hub.

### 3.1.3 Quintuple Helix in Biobord

A quintuple helix approach functions as a way towards the socioecological transformations of society into a bioeconomy. Developing a sustainable approach to bioeconomy requires information and understanding of the state of the natural environment, the availability and renewal of natural resources as well as the interactions affecting the ecosystems and their services. In quintuple helix, the innovation process is depicted as a connection of knowledge and knowhow from policy, business, academy, society and natural environment. A broader

perspective is taken in response to environmental or societal challenges to head towards sustainable economic, social and environmental development. (Grundel & Dahlström, 2016.)



**Figure 11. Quintuple Helix of the Biobord (illustration by Diana Pitkänen, 2019)**

In Biobord, sustainable use of natural resources is a core value for the network operations. Our network involves strong expertise on e.g. applied ecology, sustainable agriculture and forestry, water protection and renewable energy.

During our piloting phase, four applied research and networking pilots are implemented to test the added-value of the Biobord platform for scaling and connecting regional pilots to international context. The data from these pilots is to be integrated to the platform with an interactive story-telling tool that connects the data to the UN Sustainable Development Goal targets and indicators. The potential to utilize this tool as a standard approach to measurement of the impact of the network activities will be evaluated in course of the pilot.

### 3.2 Platform Elements

The concept of Biobord involves building a web platform that consists of the following elements:

- Landing page
- Forum
- Dashboard

- Knowledge base

However, in the first launch, we are testing the concept with landing page, including catalogues of News and Services, and the Forum. The ‘Dashboard’ and ‘Knowledge base’ are under technical feasibility study pending the next upgrade in January 2020.

The building blocks of Biobord platform also include a content management system (Wagtail) and a user account management system (Keycloak).

### 3.2.1 Wagtail Content Management System

Each member organisation of the Biobord network has been given rights to the Wagtail Content Management System (CMS). In the CMS, the network members can upload data and images to the landing page and catalogues of news and services. The system enables the network members to add news and services as well as manage the data on their regional hub and connected organizations. For guidance on the use of Wagtail, detailed instructions are available in ‘Wagtail CMS Guide for Biobord 1.0’ (Annex 7).

### 3.2.2 Keycloak User Account Management System

Biobord web platform users can manage their user account settings through Keycloak, which is known as identity and access management service. Each registered user can use Keycloak to do the following:

- Edit account related information
- Change the password
- Enable the two factor authentication
- Monitor and manage all active sessions
- Read the list of all available roles and access permissions for different parts of web platform

For guidance on the use of Keycloak, detailed instructions are available in ‘User Account Management Guide for Biobord 1.0’ (Annex 8).

### 3.2.3 Landing Page with a Bioinnovator Service Map

Landing page is the access point to the Biobord platform and its features. It is a webpage with timely information, guidance to the platform and introduction to the Biobord network of bioeconomy innovation hubs. It also serves a purpose of marketing the network.

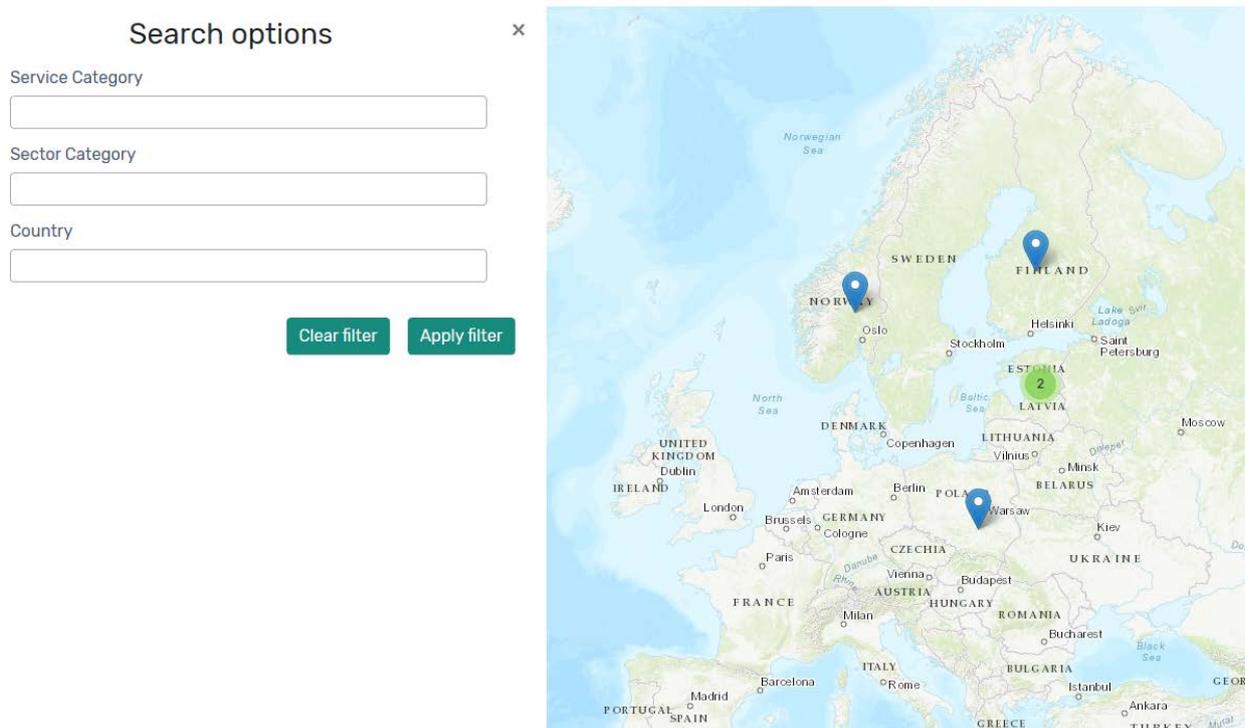
Landing page includes the following features:

- News Slider
- Our story – mission statement and highlighted success stories
- Bioinnovator Service Map
- Catalogues of News and Services
- Footer with contact details

**Bioinnovator Service Map** is a map element with category based search features. The member hubs of the Biobord network can share information on their innovation services and infrastructures via the map-based search engine. The map shows the innovation hubs connected to the network and displays their innovation services and infrastructures as information cards.

The information cards on the services and infrastructures have been tagged with pre-agreed categories to facilitate the search. The unified card design enables a simple visualization of the innovation services connected to each regional hub. Cards are available also as a catalogue on a separate page with same search features.

The information is mainly static and updated when relevant by the responsible editors from the regional hubs. Each network member has rights to the Wagtail Content Management System where the service information can be updated.



**Figure 12. Bioinnovator Service Map**

**Catalogues of News and Services** are separate pages where the news items and service cards are archived. The news items and service cards can be searched and sorted with different category tags. In the news catalogue, the relevant news items can be searched with filters on dates, hubs and bioeconomy sectors. In the service catalogue, the filter include bioeconomy

sectors, service types and hubs. As mentioned, the same search filters for services are also applicable in the Bioinnovator Service Map.

**The footer** has information on the social media connections and contact details for the Biobord network. In the coming upgrades, the footer will also connect to the terms of agreements for network members and a tutorial on joining the network.

### 3.2.3 Forum

Forum is a networking, information sharing, matchmaking and co-working area. The forum is divided into different categories for different activities and user groups. The category can have open and closed content depending on the user group's needs. The registered users are able to get involved in the discussions and create content to the topics open to them. The discussions are possible under shared topics, private messaging and chat.

Forum is developed with Discourse open access service. Registration is organized with Keycloak to enable one registration to all systems connected with Biobord platform. In order to create or comment the topic and join the discussion, you have to be registered to the platform. For guidance on the use of the Forum, detailed instructions are available as 'Biobord Forum Guide 1.0' (Annex 9.).

Users of the forum have different levels of rights for viewing, replying and posting topics. The rights can be altered with category specific settings. Table 5. defines the various user types, roles and rights in the Forum.

User Type	Role and Rights
<b>Staff: Administrator</b>	Staff members are official representatives of this community. Staff members involve administrators and moderators.  Administrators can: <ul style="list-style-type: none"> <li>• Create closed groups</li> <li>• Create categories and subcategories and tailor their settings</li> </ul>
<b>Staff: Moderator</b>	Moderators can edit all posts and/or preapprove the posts of the users.
<b>Registered user</b>	Can start topics in open categories and post replies to topics.
<b>Closed Groups</b>	Members of closed group are registered users that can see selected closed categories. Depending on the category settings, they can also start topics and reply to posts.
<b>Non-registered users</b>	Can read open content, but cannot post replies or start topics.
<b>Facilitator</b>	Registered user appointed to plan, lead and initiate the discussion and activities of an open or closed category.

**Table 5. User types, roles and rights in the Forum**

The members of the Biobord network have the right to introduce new forum categories based on the needs of their networks, projects or other target groups. The establishment of a new forum category is explained in the section 4.2 of this document. The categories that are included in the piloting phase starting on September 1, 2019, are presented in Table 6.

Categories	Open/ Closed	Description
<b>Biobord Network Actions</b>	Open	<p>‘Bioeconomy Network Actions’ is a discussion, networking and co-working space for the Biobord Network to plan and coordinate joint actions as well as exchange information and expertise.</p> <p>The topics relate to the Joint Action Plans of the RDI2CluB project, where the project partners from Central Finland, Hedmark (Norway), Świętokrzyskie Voivodeship (Poland), Vidzeme (Latvia) and Estonia have identified common interests for developing their bioeconomy innovation ecosystems or the transnational co-operation between regional actors. However, new proposals are welcomed to the network partners in line with the selected actions</p> <p>All interested registered users are invited to join the discussion. However, kindly follow the specific instructions of topic leaders when relevant. Discussion in this category is only in English.</p> <p>Closed groups can be started within the category based on the action leaders request.</p>
<b>Open Bar</b>	Open	<p>‘Open Bar’ is a networking, matchmaking and teambuilding area for the Biobord Network to find new opportunities, expertise and partners. All interested registered users are invited to join the discussion. Whether you are looking for help with your business idea or partners to a research pilot, this is a forum for you.</p> <p>Let’s take a look at the Bar and see what you can find here!</p> <p>In our ‘<b>Mix &amp; Mingle</b>’ area, you can search for new contacts. If you are looking for expertise, partners or talented professionals for a project or business venture, just post a topic and start to mingle. In case you have no luck right away, no worries. Our Biobord network builders will be in contact with you and help you in your quest.</p> <p>For solving your business challenges with fresh ideas, new technologies and innovation, you are also welcome to post your call for innovation at our ‘<b>Innovation Call</b>’ area. The growing network of bioeconomy developers may just entail the right solution for you – or we may jointly establish a group to solve it.</p>

		<p>Look for our <b>'Open tap'</b> to find timely announcements on funding opportunities and possibilities of getting involved in projects, pilots, networks and ventures.</p> <p>Finally, you are warmly welcome to our <b>'On stage'</b> events where we call on stage innovative bioeconomy technologies and business models. Furthermore, you can learn more of our hubs at the monthly <b>'On stage'</b> events where we take turns with our network member hubs to share their latest success stories and coming plans for boosting bioeconomy innovations and business in our regions.</p> <p>Discussion in this category is only in English. Specific target groups are entrepreneurs, SMEs, students, researchers and developers.</p>
<b>RDI2CluB</b>	Closed	<p>RDI2CluB category is for the interaction and co-working of working groups under RDI2CluB project. The category is closed for the members of the RDI2CluB project team. The category is the main communication channel for coordination of tasks, meetings and events of each working group.</p>
<b>Feedback</b>	Open	<p>The feedback category will include the feedback collection on the technical functions and usability of the platform. Administration will respond to all feedback and collect all feedback for further analysis to improve the site. Feedback is collected on all elements of the Biobord.eu platform.</p>
<b>Tutorials</b>	Open	<p>This category is for sharing and Q&amp;A on user guides and tutorials for the use of the Biobord.eu forum. Please share your challenges and good practices on creating dialogue and online co-working.</p>
<b>Regional Forums</b>	Open / Closed	<p>Starting from August 2019, all RDI2CluB partners can establish new categories under the Biobord.eu forum based on their identified user cases for piloting of the Biobord.eu platform and its operational model for innovation management. The categories can be also for regional target groups in local languages.</p> <p>The partner that has started the category will be in charge of its moderation, community building and engagement as well as working methods.</p>

**Table 6. Forum categories in action on September 1, 2019**

### 3.2.4 Dashboard Proposal

*Dashboard is a potential element to be introduced in the Biobord upgrades coming in January 2020. The proposal is currently undergoing a technical feasibility study.*

The purpose of a dashboard is to make it easy for the registered users of Biobord to follow the activities at the platform and to keep updated on the ongoing activities as well as information that is of interest to the user. Dashboard provides a personalised and visual display of relevant information from Biobord Platform that is tailored for each registered user. A basic dashboard is formed automatically based on selected interest areas via tagging. However, the user should also have an opportunity to manually add or disable data flow from parts of the Biobord based on tags, categories or groups to follow.

Information from the Biobord Forum, Knowledge base, Services and News sections to create an event calendar with leads from the forum and news, show personal notifications and announcements as well as network activity (active topics, new posts, trending topics). In addition, the dashboard would show the latest activities of the closed groups where the user is involved in.

The registered user can build the dashboard based on personal interest and preferences. The dashboard should display data automatically based on selected interests and involvement in groups of the Biobord. In addition, manual adding or distracting of data flow should be enabled for the user.

Personalised dashboard view that features selected data sources from the Biobord platform based on the choices of the registered user. The view should be visually attractive and concise with not much need for scrolling. Different data sources should be clearly structured and management of personal settings should be easy and intuitive to use (e.g. similar to common social media profile pages).

### 3.2.5 Knowledge Base Proposal

*Knowledge base is a potential element to be introduced in the Biobord upgrades coming in January 2020. The proposal is currently undergoing a technical feasibility study.*

Knowledge base is a document and resource library that connects to the Forum categories (same structure and categories) and provides a tool for document management and sharing for groups operating at the Forum. An opportunity to edit and co-write shared documents simultaneously would add value to the feature.

The documents and resources come from the registered Biobord users. The document management should be simple and convenient with a clear system for grouping and searching the documents and resources (e.g. tagging).

Only registered users should be able to view the knowledge base. All registered users with an access to the forum group can download and access documents in the corresponding knowledge base category. In other words, if the group is closed, only the members of the closed groups can see and create content.

The facilitators of the forum categories manage and moderate the documents and resources in the library. When establishing a forum category, the facilitator can select whether a folder in the knowledge base is needed for the forum category and whether all registered users or closed group members can create content.

The facilitator is coordinating the agreement of the open access principles, language restrictions and other conducts for the category and related resource folder in the Knowledge Base. The group can agree on a specific 'Creative Commons' licence for stipulating the rights to share, use and build upon the shared documents and resources. The facilitator should also advise on the naming of the documents and/or tagging, if relevant.

Library for documents, presentation and video materials that enables embedded video viewing. Library structure, viewing and content creation rights and moderation options should be aligned to operations, categories and groups of Biobord Forum. Folder type of structure based on categories is preferred with a good search features. The documents should have the same tagging as the forum categories. If feasible, the tagging should be automatic based on the category tags. The user should have an opportunity to read and access the document, without downloading it.

### 3.3 User profiles

User profiles are defined to better address and understand the motivation and needs of the user groups.

The user profiles are grouped to three groups:

1. Bridge builder (Coach) – Hub manager, connector and facilitator.
2. Developer (Player) – Actors with ideas, resources, needs, challenges and solutions.
3. Supporter (Fan) – End-users of innovative products and services

#### 3.3.1 Bioeconomy Bridge Builder

Bridge builders use the Biobord.eu platform as a tool in their work. They use the platform to find new connections and to connect actors. Business bridge builders can manage and grow their network with the help of the platform. The regional authorities can lead smart specialization processes of a network of RIS actors with the help of the platform. They can also utilize the platform to manage the project lifecycles from planning to impact generation.

#### Personality, skills and aptitudes

- Actively participating in networking events regionally
- Extrovert with a wide network and connections in the region
- Active social media content creator
- Competences in management, business development and innovation support

## **Roles**

- Facilitator of co-operation between actors from academia, business and government
- Provider of platforms and meeting places for dialogue and information exchange on bioeconomy development.
- Network builder and connection manager that guides people to right contacts and sources of capital, talent, support and expertise.
- Planner, coordinator or manager of regional or business development projects.

## **Professional profile**

- Regional development agents
- Business development agents
- Innovation brokers
- Technology and Knowledge Transfer officers
- Cluster organisations
- Business advocacy organisations

## **Motivation**

- Looking to solve challenges and break barriers in the development of regional bioeconomy business.
- Looking to strengthen smart specialization processes including triple helix co-operation
- Looking to support innovative bioeconomy SMEs, start-ups and pilots in the region to commercialize their ideas into products, services and improved processes.
- Looking for strategic partnerships and networks outside the region.
- Looking for new opportunities, partners and market leads for their partners.

### **3.3.2 Bioeconomy Developer**

Bioeconomy developer has an idea for a new biobased product or service, an aspiration to start or build a bioeconomy business venture or a challenge in making the business more viable or sustainable. At the Biobord.eu platform, the developer can find innovation support for projectization or commercialisation of an idea. They can also get connected with talent and expertise to build a team or get support for business development. Developers can find solutions for their challenges via participation to the capacity building and peer learning groups of the forum or with connections to right experts.

## **Personality, skills and aptitudes**

- Goal-oriented, looking for solutions and development potential
- Lacks networks, but willing to team-up with people who share the same aspirations
- High knowhow and skills on a specific field of bioeconomy

- Technology, business or research focused

### **Roles**

- Developer of new inventions and business ideas
- Bioeconomy forerunner with innovative products and services
- Highly specialized expert in bioeconomy fields
- Entrepreneur with a challenge in making the business more viable or sustainable

### **Professional profile**

- Entrepreneurs and experts from innovative bioeconomy SMEs
- Entrepreneurs in biomass production (farmers, foresters)
- Students with entrepreneurial aspirations
- Start-ups
- Researchers (applied research)

### **Motivation**

- Looking for new business models to ensure viability or renew operations of the traditional (family) business
- Looking for competences, development partners and information to test, pilot and commercialize a new product or service
- Interest in building a own business
- Interest in developing sustainability of business operations
- Interest in accessing new markets or customer segments

### **3.3.3 Bioeconomy Supporter**

Bioeconomy supporter has a value-driven interest to the development of bioeconomy in the regional or even global context. The supporter follows discussion and leads on sustainable and local bioeconomy products and services to support his or her sustainable lifestyle and personal aspirations. Supporter is also interested in helping bioeconomy development with taking part in open innovation panels or surveys, sharing information on innovations and local entrepreneurs in social media or even investing in start-ups or crowdfunding calls.

### **Personality, skills and aptitudes**

- High education and competences in fields such as information technology, design, brand management and marketing
- Active in civil society, NGOs and social media
- Value-driven interest to bioeconomy and sustainability

## Roles

- Consumer and customer with interest in value-added bio-products and services
- Opinion leader and messenger
- Early adopter
- Initiator of discussions in topics
- Provider of market signals and information on added value to consumers
- Followers and multiplier of message
- Private funding with investments and crowdfunding

## Professional profile

- KIBS (Knowledge Intensive Business Services) expert
- Media
- NGO advocate
- Local politicians
- Business angel, private investor

## Motivation

- Passionate about sustainable development, climate change mitigation and biodiversity
- Aspiration for sustainable living and lifestyles
- Looking to influence local, regional, national and global development
- Looking to support promising and innovative start-ups

## 3.4 Service Paths

Biobord has five distinctive service paths that are piloted in 2019-2020 to gain more insights into the good practices on implementation of each service path. Furthermore, the network will evaluate and upgrade the functionality of Biobord to deliver these outlined services.

### 3.4.1 Project Lifecycle

Project Lifecycle is a service path targeted for bridge builders as the coordinators of the project. However, the project target groups, beneficiaries and implementers can include a variety of user profiles.

With the help of the forum (and later knowledge base), the bridge builders can attain tools and a platform for planning, management and scaling of a project involving multiple actors and organisations in regional, national or international context. The project can be for example product or service development project, research pilot, case study, demonstration, RDI project or other activity of agreed period and action plan.



**Figure 13. Biobord service path of project lifecycle management**

### 3.4.2 Network Building

Network building is a service path targeted for bridge builders. With the help of the Forum and the ‘Bioinnovator service map’, as well as later the dashboard, the Biobord offers a tool for managing and connecting multiple target groups and networks. It also enables finding new connections and opening dialogue with the networks. The forum can be utilised as a platform for regional dialogue boosting triple helix co-operation, especially in the rural regions where distances between the actors hinder regular meetings face to face.

Ideally, a bridge builder could connect all the groups, projects and teams he or she is coordinating to the same platform and get a one-glance view of the new development and actions at the dashboard. This would make connecting people and information between the groups effortless. Direct messaging to different groups, group based chat discussions and tagging of groups to the forum topic enable effective and targeted communication to various teams and reference groups.



### Finding new connections

- Calls for expertise and talent in Forum
- Online networking events
- Automated matchmaking via dashboard based on shared interests or needed expertise



### Opening network dialogue

- Creating categories, topics on relevant issues (e.g. smart specialisation areas, joint action plans)
- Connecting different projects together
- Analysing the leads and trends of the discourse



### Managing networks

- Innovation service portfolio
- Dashboard on contacts and user groups
- Creating groups in the Forum

**Figure 14. Biobord service path of network building**

### 3.4.3 Capacity Building

Capacity building service path is targeted for bridge builders with an ultimate target group of developers and/or supporters. The capacity building service path utilises the forum (and later knowledge base) for education, expert consultation, information and best practice sharing as well as peer learning via application of digital learning solutions.

The forum enables creation of a peer-learning group with common challenges or aspirations for change and development. The group can interact freely together learning from each other and supporting each other with implementing the lessons learned. The experts input can be injected into the learning process as interactive materials including video consultation, virtual tours, podcasts and webinars.

As the speed of change is ever faster, the true measure of ability to learn will be the ability to network and co-operate. In the Forum, we can connect different peer learning groups and open learning services to enable wider team-building, partner finding and access to expertise and innovation support. We can enable and support the development of regional and international learning platforms where people come together to solve joint challenges, learn from each other's best practices and find partners in developing their business. The international connections as well as the higher connectivity between SMEs of the region enables joint challenges to become joint learning activities and finally new business opportunities.

### 3.4.4 Matchmaking

Matchmaking service path is most relevant to developers, although the bridge builders also play an important role as connectors of developers to the service. In the forum, the open bar category will offer a platform for finding new opportunities, expertise and partners. The

activities of the category will involve calls for expertise, innovation challenges, open funding calls, partner searchers and online networking events.

The matchmaking can also be an automated feature in the dashboard with coming upgrades. This feature would connect people with similar interest or based on demand and supply of expertise. The registered user would define the interests and expertise in their personal profile.

### 3.4.5 Innovation Support

The service path of innovation support is most relevant to developers looking for support in developing their ideas into commercial products or services. The services can be searched from the 'Bioinnovator Service Map' or the service catalogue. More information is available via contacting the relevant contact persons. Types of innovation services and the available service cards are depicted in Figure 14.

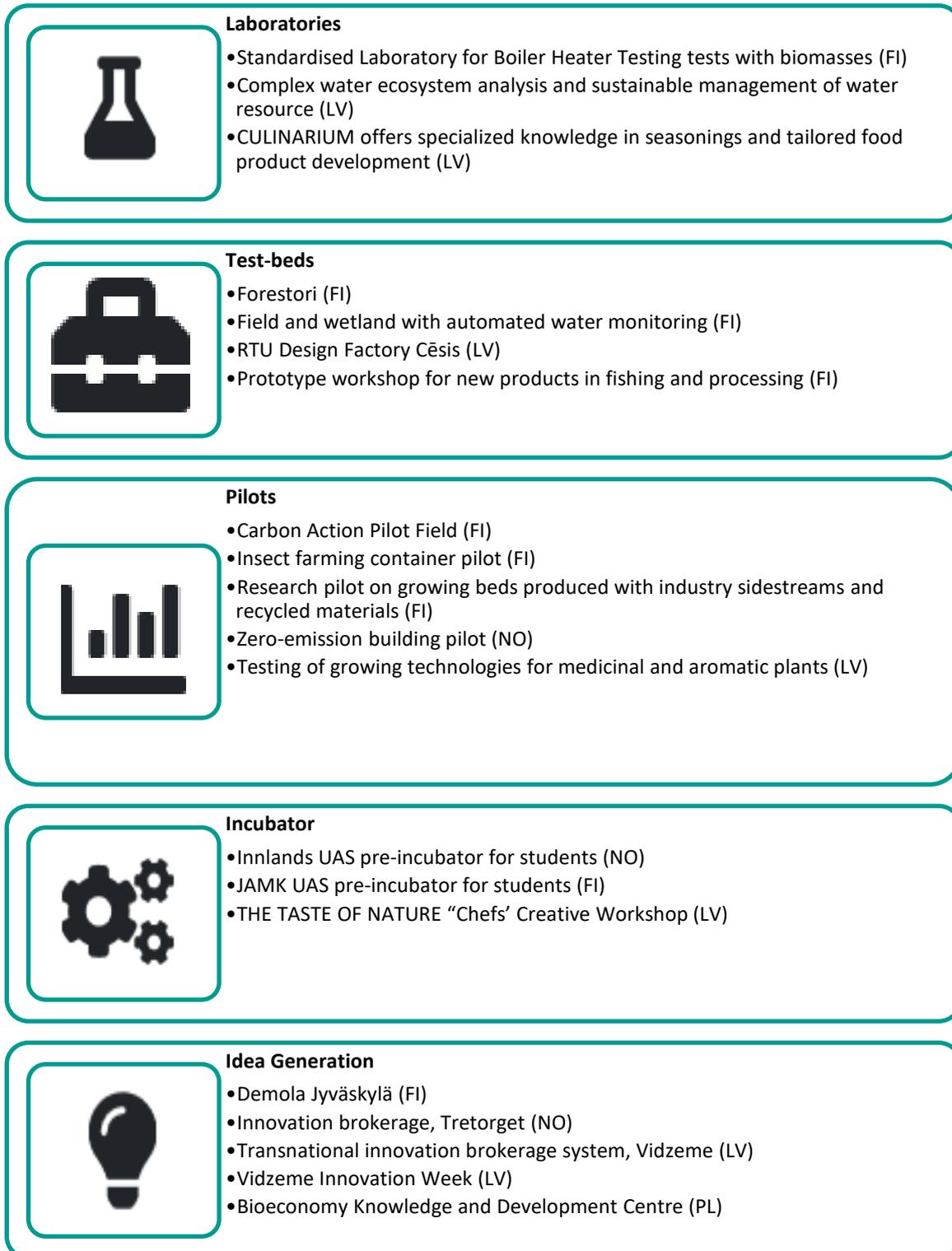


Figure 15. Examples of Innovation Services connected to the Biobord Network

## 4. Guidelines for Building Service Paths

### 4.1 Toolkit for Planning the Biobord Platform Uptake

Before launching the Biobord platform, each of the connected hubs implemented a planning process involving three-steps. In the first step, a reference group analysis is conducted based on the bioeconomy innovation ecosystem mapping. The purpose of the reference group analysis is to gain understanding of the potential of Biobord.eu platform for developing co-operation with the regional, national and international connections of the hub. This step forms a basis for defining the user groups and the potential co-operation partners for offering innovation services at the platform.

In the second step, the current and potential innovation services of the hub are defined in an innovation path matrix. The aim of this tool is to map the resources, assets and services that can be connected to the Biobord.eu platform as well as identifying regional partnerships for building the community on the platform. The innovation path matrix also provides a framework for identification of gaps in the service path and understanding the overall potential and long-term possibilities of the Biobord as a tool for the hub.

Finally, in the third step, potential first user groups and user cases are identified to launch the use of the Biobord. The aim of defining the user cases is to understand the needs of the user groups, to define activities and expected results as well as to form a basis for evaluation of the results of Biobord uptake.

The three steps have been compiled as a toolkit available as annex 2.

### 4.2 News

The News items connected to the News catalogue and Landing page slider are a tool for the hubs to share information on their achievements and new initiatives. News is also a tool for the Biobord Network to announce success stories and network achievements. The relevance of the news can be evaluated based on the connection to the Biobord Mission Statement.

All member organisations of the Biobord network are invited to present their News in the Biobord platform. The organisations will take the responsibility for the definition and management of the News item. The members are advised to use general news reporting principles, such as objectivity. Please note the following tips for news writing (Odgen, J. 2014).

- **Begin with the most important facts first.** The intro to every article needs to grab the reader's attention instantly and summarize the story with around 25 to 30 words. The first few sentences need to include "who, what, where, when, why, and how." Remember most people will not read more than 250 words before they start to skim. You should try to give them all the information they need as quickly as possible.

- **Use the active tense.** It is faster and uses fewer words. For example, “Argentina was beaten by Germany in last night’s World Cup final ...” takes longer to read than “Germany beat Argentina ...”
- **Communicate what is new or different.** Why would the reader care about what you have to say? Why is it relevant to them? Is there a trend happening in pop culture or the world that you can incorporate? What are people talking about right now, and how does this tie in with what you do?
- **Focus on human interest.** If you can put a human face to the story, you will create an emotional connection that will draw readers in and keep them engaged.
- **Avoid jargon.** Think about the language you use; keep it clear, concise, and to the point.
- **Write acronyms out in full in the first reference.**
- **Use quotes.** It is powerful to convey important thoughts with someone else’s words. However, when you quote others, make sure to get it right.
- **Report truthfully.**
- **Have someone else proofread your work.** Very few people can spot their own mistakes, so it is wise to have a colleague double-check your work before you publish.

### 4.3 Service Cards

The service cards connected to the service catalogue and ‘Bioinnovator Service Map’ are a tool for the hubs to share information and promote their expertise and services to the bioeconomy developers and bridge builders internationally. The map also provides a tool for visualising and analysing the Biobord network.

All member organisations of the Biobord network are invited to present their services in the Biobord platform. The organisations will take the responsibility for the definition and management of the service presented at the service catalogue and ‘Bioinnovator Service Map’. The technical implementation is explained in detail in the Annex 7. Content Management System guide 1.0.

In order to enable the search features of the service catalogue and ‘Bioinnovator Service Map’, the member organisations are requested to use appropriate category tags for the services. The tags include the service type (Table 7.) and bioeconomy sector.

Service type	Definition
Laboratory	Facility that provides controlled conditions in which scientific or technological research, experiments, and measurement are performed. The standardised testing possibilities should be described in detail in the service card.

<b>Test-bed</b>	Platform for conducting transparent and replicable testing of scientific theories, practices and processes, tools, and new technologies. The opportunities of SMEs and partners to utilise the test-bed should be defined in the service card.
<b>Pilot</b>	A pilot study, pilot project, pilot test, or pilot experiment is a small-scale trial conducted in order to evaluate feasibility, time, cost, adverse events, and improve upon the design prior to performance of full-scale implementation. The pilot can showcase special expertise of the organisation and hub.
<b>Living Lab</b>	User-centred, open-innovation system, integrating concurrent research and innovation processes within a public-private-people partnership. The opportunities of SMEs and partners to utilise the Living Lab should be defined in the service card.
<b>Incubator</b>	Services, support and facilities for start-ups.
<b>Idea Generation</b>	Processes, services and models for solving challenges or creating new business ideas or product and service concepts.

**Table 7. Service type categories in use at Biobord on 1.9.2019.**

The bioeconomy sectors can be selected from the following categories:

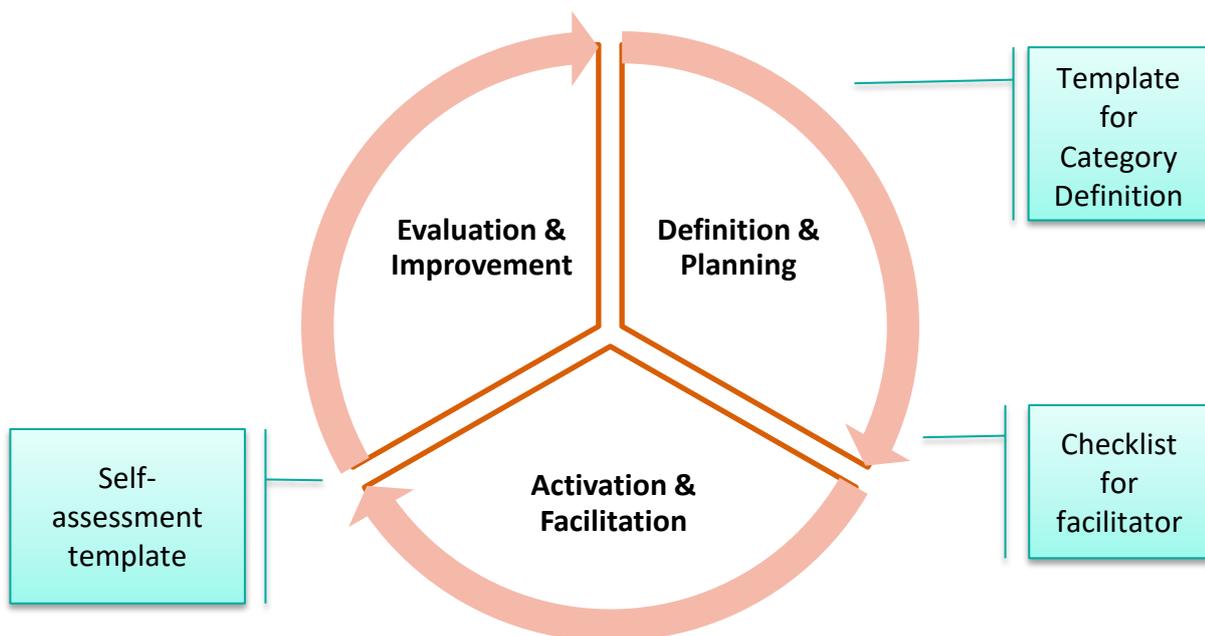
- Agriculture and Food
- Forest-based bioeconomy
- Circular bioeconomy
- Renewable energy
- Natural resource management
- Nature-based services

The member organisations are advised to implement these steps to manage their service cards.

1. Design an attractive service card with clear information of the possibilities to utilise the service. Use embedded videos, photos and links to enhance the information provided.
2. Make sure the information and contact details are up-to-date in the service card. Appoint a person responsible for the promotion and communication in Biobord.
3. Promote the service in the discussions of the Forum when relevant needs arise.
4. Share the success stories from the beneficiaries of your service via the 'News'.

## 4.4 Building and Managing a Forum Community

The process of building and managing a forum community has been outlined as a three-step process that will aim for continuous improvement with an iterative approach.



**Figure 16. Process of building and managing a forum community (Aalto, 2019)**

### 4.3.1 Definition

**Why?** The definition of a category is important for ensuring that the category is built based on a need and that there is a potential for raising a committed community of followers and participants for the category. Furthermore, the establishing the basic rules and conducts of the interaction at the category.

**Rule number 1.** A Forum category needs to be active to function, so the best approach is to build the categories based on need. Start a category when you have a targeted user group in mind with a need for active dialogue or team working.

**Who?** A facilitator is named for each forum category as a responsible person for establishing the rules and conducts for the activities in the category and an animator and coordinator of the activities. The facilitator can come from any member organisation of the Biobord network.

**How?** The facilitator is requested to fill a ‘Category Definition Template’ as a digital form submitted to the Forum administrator staff. The data in the format is needed to enable the technical development, to have adequate information for users on the rules and conducts as well as to create a framework for the evaluation.

The content of the template is presented here and in annex 3. The content includes the following information presented in Table 8.

Template sections	Mandatory information	Optional information
<b>Rules and conducts</b>	<ul style="list-style-type: none"> <li>• ‘About the Category’ topic</li> </ul>	<ul style="list-style-type: none"> <li>• IPR management approach</li> </ul>
<b>Category information for technical development</b>	<ul style="list-style-type: none"> <li>• Category name</li> <li>• Placement (parent category, if relevant)</li> <li>• Launch date</li> <li>• Rights of registered users</li> </ul>	<ul style="list-style-type: none"> <li>• Colours and images</li> <li>• Settings</li> <li>• Moderation</li> <li>• Development of closed groups</li> </ul>
<b>Background questions for evaluation</b>	<ul style="list-style-type: none"> <li>• Focus of the activities</li> </ul>	<ul style="list-style-type: none"> <li>• User Profile</li> </ul>

**Table 8. Required information for forum category definition**

**Rules and conducts** of a category are defined to provide information for the users on how to behave and what to expect in the category. Every category has an initial “About this category” topic as an open description as an introduction to the category. It should answer the questions:

- What is the purpose of this category?
- What is happening at this category? What can I do here?
- Who is this category meant for? Who are in the user group or target group?
- Who is facilitating or organizing the activities at the category?
- Where can I ask for more information?

“About this category” will be pinned to the top of the category. The description is very important for the users. The facilitator needs to make sure to give your new category a good, clear description, so people understand what belongs there. Keep the description simple; easy to approach and understand. Make sure your audience feels welcome to join in.

As a part of defining the rules and conducts, the facilitator is also encouraged to define the approach to intellectual property rights in case the category involves sharing or collaborative development of materials and resources. The use of Creative Commons approaches is recommended for the open categories and are applicable for many closed groups (Table 9).

However, the closed groups can also require a more strict IPR contract, which can be defined by the facilitator as needed.

Creative Commons licence	Description
<b>Attribution (by)</b>	All CC licenses require that others who use your work in any way must give you credit the way you request, but not in a way that suggests you endorse them or their use. If they want to use your work without giving you credit or for endorsement purposes, they must get your permission first.
<b>ShareAlike (sa)</b>	You let others copy, distribute, display, perform, and modify your work, as long as they distribute any modified work on the same terms. If they want to distribute modified works under other terms, they must get your permission first.
<b>NonCommercial (nc)</b>	You let others copy, distribute, display, perform, and (unless you have chosen NoDerivatives) modify and use your work for any purpose other than commercially unless they get your permission first.
<b>NoDerivatives (nd)</b>	You let others copy, distribute, display and perform only original copies of your work. If they want to modify your work, they must get your permission first.

**Table 9. Intellectual Property Management (IPR) approach based on Creative Commons (Creative Commons 2019)**

For **technical development**, the forum staff needs information of the category name, placement, rights of the registered users and the launch date. The rights of the registered users can be selected from the following options:

- See topics
- See topics and Reply to them
- See topics, Reply to them and Create own topics
- Only closed group can see the topic

As optional information, the facilitator can select to have closed groups, moderation or influence the settings and visual outlook of the category. If closed groups are opted for, the list of names and email of the members of the closed group need to be provided and the rights of the closed group members defined. If a moderator is opted for, the facilitator is asked to define whether the moderator should approve all topics or also all replies. In addition, the moderators name and email need to be provided.

Related to settings, the facilitator can choose if such features as ‘events’, ‘locations’, ‘map’ or ‘calendar’ are relevant for the category. In addition, the appearance of topics can be selected to

prefer the most active topics or the latest topics. The setting options for visual outlook involve category logo image, customised category background image for forum and a selection of colour (Hex Code #RRGGBB) for the category headline.

**Background questions for evaluation** are ‘focus of the activities’ and optional question about the ‘user profile’. Both are simple ‘tick a box’ questions that provide background information about the usage of the forum for the administrative purposes.

The focus of activities is a mandatory question in the piloting phase in order to collect data for evaluation of the activities. The selection of the focus will help us to understand the activities ongoing at the forum and the expectations of the facilitators have when starting the piloting. The selection of the focus will guide the evaluation, as the key indicators will be defined based on the focus.

#### 4.3.2 Checklist for Facilitator

Before starting to use the Forum category, the facilitator should confirm in their organization or team what commitment are you making for the use of the Forum. The checklist for facilitator (annex 4) is planned as a tool for the facilitator to plan the management and community building activities for the Forum category that they are facilitating. By filling the online checklist, the facilitator will receive a short commitment statement that will guide the facilitator in the management of the community.

The checklist offers different level of commitments for planning the interaction with the community of the forum category. It also provides choices for planning the ways to initiate and encourage discussion in the forum, examples for planning the marketing and communication actions.

#### 4.3.3 Evaluation

The success of a forum category can be evaluated with a direct poll to the community of user or with the use of key performance indicators. The success of a forum category can be followed with several indicators. Based on the purpose of your category, we propose three key performance indicators for each category (Table 10).

After a determined period, the forum staff can provide the facilitators an update of the key performance indicators. This information along with the potential polls to the community of users should be used as a data for analysing the results and planning steps to improve the facilitation and management approach.

The process for self-evaluation of the community building and management is outlined in the annex 5. The aim of the process is to encourage continuous improvement and it is recommended that the evaluation cycle would be quite short (2-3 months) in the beginning of the forum community building. At a more established stage, the evaluation cycle can grow longer up to 6-12 months.

FOCUS	Key performance indicators
<b>Team-work /Project Management</b>	<ul style="list-style-type: none"> <li>• Posts (new posts created)</li> <li>• Daily engaged users (number of users that have liked or posted during a day)</li> <li>• Average time for first response to new topics (hours)</li> </ul>
<b>Network management</b>	<ul style="list-style-type: none"> <li>• Topics (new topics created)</li> <li>• User visits</li> <li>• Forum pull (DAU/MAU = daily users/monthly users, indicates the commitment level. Preference is over 30 per cent.)</li> </ul>
<b>Capacity building</b>	<ul style="list-style-type: none"> <li>• Posts (new posts created)</li> <li>• User visits</li> <li>• Average time for first response to new topics (hours)</li> </ul>
<b>Matchmaking</b>	<ul style="list-style-type: none"> <li>• Topics (new topics created)</li> <li>• User visits</li> <li>• Average time for first response to new topics (hours)</li> </ul>
<b>Innovation support</b>	<ul style="list-style-type: none"> <li>• Topics (new topics created)</li> <li>• User visits</li> <li>• New contributors (new people that made posts)</li> </ul>

**Table 10. Key performance indicators**

In the first steps of the self-evaluation process, the facilitators are requested to analyse the results with the following questions.

- Do the performance results meet our expectations?
- What was surprising?
- Are we happy with the results?
- Is there some performance indicator that we hope to improve?
- Name one indicator that would be the most essential one to improve, if relevant.

In the second step, the facilitators will review the performance in relation to the commitments made as facilitator (annex 4) and analyse the results with the following questions.

- Did we manage to fulfil all our commitments? Which ones could we improve on?
- If you have not met all commitments, what have been the reasons behind that?
- If you have not met all commitments, what do you think has been the effect on the community?
- Name two areas where you should upgrade your commitments or improve their execution.

Finally, in the third step, the facilitators will name three commitments that they will concentrate on improving in the next phase. These commitments can be new ones or old commitments that should be implemented more effectively. In addition, the facilitator can set a target to the indicators in order to follow the impact of the new commitments.

## 5. Platform Policies

‘Privacy Policy’ and ‘Terms of Use’ are presented as it applies in the Biobord.eu forum starting on March 29, 2019. JAMK University of Applied Sciences has built the Privacy Policy based on the identified best practices of Discourse, a forum hosting company with experience of 1500+ customers.

Updates are made based on the agreement of RDI2CluB partnership in the piloting phase ending in August 2020. After that a coming network agreement will stipulate the content of the platform policies for the coming years. Updates will be announced to all registered users.

### 5.1 Privacy Policy

#### What information do we collect?

We collect information from you when you register on our site and gather data when you participate in the forum by reading, writing, and evaluating the content shared here.

When registering on our site, you may be asked to enter your name and e-mail address. You may, however, visit our site without registering. Your e-mail address will be verified by an email containing a unique link. If that link is visited, we know that you control the e-mail address.

When registered and posting, we record the IP address that the post originated from. We also may retain server logs, which include the IP address of every request to our server.

#### What do we use your information for?

Any of the information we collect from you may be used in one of the following ways:

- To personalize your experience; your information helps us to better respond to your individual needs.
- To improve our site; we continually strive to improve our site offerings based on the information and feedback we receive from you.
- To improve customer service; your information helps us to more effectively respond to your customer service requests and support needs.
- To send periodic emails; The email address you provide may be used to send you information, notifications that you request about changes to topics or in response to your user name, respond to inquiries, and/or other requests or questions.

#### How do we protect your information?

We implement a variety of security measures to maintain the safety of your personal information when you enter, submit, or access your personal information.

## **What is your data retention policy?**

We will make a good faith effort to:

- Retain server logs containing the IP address of all requests to this server no more than 90 days.
- Retain the IP addresses associated with registered users and their posts no more than 5 years.

## **Do we use cookies?**

Yes. Cookies are small files that a site or its service provider transfers to your computer's hard drive through your Web browser (if you allow). These cookies enable the site to recognize your browser and, if you have a registered account, associate it with your registered account.

We use cookies to understand and save your preferences for future visits and compile aggregate data about site traffic and site interaction so that we can offer better site experiences and tools in the future.

We may contract with third-party service providers to assist us in better understanding our site visitors. These service providers are not permitted to use the information collected on our behalf except to help us conduct and improve our business.

## **Do we disclose any information to outside parties?**

We do not sell, trade, or otherwise transfer to outside parties your personally identifiable information. This does not include trusted third parties who assist us in operating our site, conducting our business, or servicing you, so long as those parties agree to keep this information confidential.

We may also release your information when we believe release is appropriate to comply with the law, enforce our site policies, or protect others or our rights, property, or safety. However, non-personally identifiable visitor information may be provided to other parties for marketing, advertising, or other uses.

## **Third party links**

Occasionally, at our discretion, we may include or offer third party products or services on our site. These third party sites have separate and independent privacy policies. We therefore have no responsibility or liability for the content and activities of these linked sites. Nonetheless, we seek to protect the integrity of our site and welcome any feedback about these sites.

## **Children's Online Privacy Protection**

Our site, products and services are all directed to people who are at least 13 years old or older.

### **Online Privacy Policy Only**

This online privacy policy applies only to information collected through our site and not to information collected offline.

### **Your Consent**

By using our site, you consent to our web site privacy policy.

### **Changes to our Privacy Policy**

If we decide to change our privacy policy, we will post those changes on this page. This document was last updated March 29, 2019.

## **5.2 Terms of Use**

These terms govern use of the Internet forum at <http://forum.biobord.eu>. To use the forum, you must agree to these terms with JAMK University of Applied Sciences, the organization that runs the forum. The company may offer other products and services, under different terms. These terms apply only to use of the forum.

### **Important Terms**

These terms include a number of important provisions that affect your rights and responsibilities, such as the disclaimers, limits on the JAMK University of Applied Sciences liability to you, your agreement to cover the JAMK University of Applied Sciences for damages caused by your misuse of the forum in 'Responsibility for Your Use', and an agreement to arbitrate disputes.

### **Your Permission to Use the Forum**

Subject to these terms, the JAMK University of Applied Sciences gives you permission to use the forum. Everyone needs to agree to these terms to use the forum.

### **Conditions for Use of the Forum**

Your permission to use the forum is subject to the following conditions:

- You must be at least thirteen years old.
- You may no longer use the forum if the JAMK University of Applied Sciences contacts you directly to say that you may not.
- You must use the forum in accordance with 'Acceptable Use' and 'Content Standards'.

### **Acceptable Use**

- You may not break the law using the forum.

- You may not use or try to use another’s account on the forum without their specific permission.
- You may not buy, sell, or otherwise trade in user names or other unique identifiers on the forum.
- You may not send advertisements, chain letters, or other solicitations through the forum, or use the forum to gather addresses or other personal data for commercial mailing lists or databases.
- You may not automate access to the forum, or monitor the forum, such as with a web crawler, browser plug-in or add-on, or other computer program that is not a web browser.
- You may crawl the forum to index it for a publicly available search engine, if you run one.
- You may not use the forum to send e-mail to distribution lists, newsgroups, or group mail aliases.
- You may not falsely imply that you are affiliated with or endorsed by the JAMK University of Applied Sciences.
- You may not hyperlink to images or other non-hypertext content on the forum on other webpages.
- You may not remove any marks showing proprietary ownership from materials you download from the forum.
- You may not show any part of the forum on other websites with <iframe>.
- You may not disable, avoid, or circumvent any security or access restrictions of the forum.
- You may not strain infrastructure of the forum with an unreasonable volume of requests, or requests designed to impose an unreasonable load on information systems underlying the forum.
- You may not impersonate others through the forum.
- You may not encourage or help anyone in violation of these terms.

### **Content Standards**

- You may not submit content to the forum that is illegal, offensive, or otherwise harmful to others. This includes content that is harassing, inappropriate, or abusive.
- You may not submit content to the forum that violates the law, infringes anyone’s intellectual property rights, violates anyone’s privacy, or breaches agreements you have with others.
- You may not submit content to the forum containing malicious computer code, such as computer viruses or spyware.
- You may not submit content to the forum as a mere placeholder, to hold a particular address, user name, or other unique identifier.
- You may not use the forum to disclose information that you do not have the right to disclose, like others’ confidential or personal information.

## Enforcement

JAMK University of Applied Sciences may investigate and prosecute violations of these terms to the fullest legal extent. JAMK University of Applied Sciences may notify and cooperate with law enforcement authorities in prosecuting violations of the law and these terms.

JAMK University of Applied Sciences reserves the right to change, redact, and delete content on the forum for any reason. If you believe someone has submitted content to the forum in violation of these terms, contact us immediately.

## Your Account

You must create and log into an account to use some features of the forum. To create an account, you must provide some information about yourself. If you create an account, you agree to provide, at a minimum, a valid e-mail address, and to keep that address up-to-date. You may close your account at any time by e-mailing [janne.alatalo@jamk.fi](mailto:janne.alatalo@jamk.fi).

You agree to be responsible for all action taken using your account, whether authorized by you or not, until you either close your account or notify JAMK University of Applied Sciences that your account has been compromised. You agree to notify JAMK University of Applied Sciences immediately if you suspect your account has been compromised. You agree to select a secure password for your account, and keep it secret.

JAMK University of Applied Sciences may restrict, suspend, or close your account on the forum according to its policy for handling copyright-related takedown requests, or if JAMK University of Applied Sciences reasonably believes that, you have broken any rule in these terms.

## Your Content

Nothing in these terms gives JAMK University of Applied Sciences any ownership rights in intellectual property that you share with the forum, such as your account information, posts, or other content you submit to the forum. Nothing in these terms gives you any ownership rights in the JAMK University of Applied Sciences' intellectual property, either.

Between you and JAMK University of Applied Sciences, you remain solely responsible for content you submit to the forum. You agree not to wrongly imply that content you submit to the forum is sponsored or approved by the company. These terms do not obligate JAMK University of Applied Sciences to store, maintain, or provide copies of content you submit, and to change it, according to these terms.

Content you submit to the forum belongs to you, and you decide what permission to give others for it. However, at a minimum, you license JAMK University of Applied Sciences to provide content that you submit to the forum to other users of the forum. That special license allows JAMK University of Applied Sciences to copy, publish, and analyse content you submit to the forum.

When content you submit is removed from the forum, whether by you or by JAMK University of Applied Sciences, JAMK University of Applied Sciences' special license ends when the last copy disappears from JAMK University of Applied Sciences' backups, caches, and other systems.

Other licenses you apply to content you submit, such as Creative Commons licenses, may continue after your content is removed. Those licenses may give others, or JAMK University of Applied Sciences itself, the right to share your content through the forum again. Others who receive content you submit to the forum may violate the terms on which you license your content. You agree that the company will not be liable to you for those violations or their consequences.

### **Your Responsibility**

You agree to indemnify JAMK University of Applied Sciences from legal claims by others related to your breach of these terms, or breach of these terms by others using your account on the forum. Both you and JAMK University of Applied Sciences agree to notify the other side of any legal claims for which you might have to indemnify JAMK University of Applied Sciences as soon as possible. If JAMK University of Applied Sciences fails to notify you of a legal claim promptly, you will not have to indemnify JAMK University of Applied Sciences for damages that you could have defended against or mitigated with prompt notice. You agree to allow JAMK University of Applied Sciences to control investigation, defence, and settlement of legal claims for which you would have to indemnify JAMK University of Applied Sciences, and to cooperate with those efforts. JAMK University of Applied Sciences agrees not to agree to any settlement that admits fault for you or imposes obligations on you without your prior agreement.

### **Disclaimers**

You accept all risk of using the forum and content on the forum. As far as the law allows, JAMK University of Applied Sciences and its suppliers provide the forum as is, without any warranty whatsoever. The forum may hyperlink to and integrate forums and services run by others. JAMK University of Applied Sciences does not make any warranty about services run by others, or content they may provide. Use of services run by others may be governed by other terms between you and the one running service.

### **Limits on Liability**

Neither JAMK University of Applied Sciences nor its suppliers will be liable to you for breach-of contract damages their personnel could not have reasonably foreseen when you agreed to these terms.

### **Feedback**

JAMK University of Applied Sciences welcomes your feedback and suggestions for the forum as well as the Terms of Use, Privacy Policy and any Guides or Tutorials indicating the operational

models at the Forum. Communicate your feedback and suggestions via the 'Feedback' category of the Forum for joint dialogue and analysis.

You agree that JAMK University of Applied Sciences will be free to act on feedback and suggestions you provide. You agree not to submit feedback or suggestions that you believe might be confidential or proprietary, to you or others. JAMK University of Applied Sciences agrees to respond to all feedback in the testing period the piloting periods (pilot ongoing until 31.5.2020) and include it in the analysis of upgrades that JAMK University of Applied Sciences will make for the new any updates to the Forum or its operational terms.

### **Termination**

Either you or JAMK University of Applied Sciences may end the agreement written out in these terms at any time. When our agreement ends, your permission to use the forum also ends. The following provisions survive the end of our agreement: Your Content, Feedback, Your Responsibility, Disclaimers, Limits on Liability, and General Terms.

### **Disputes**

The members of organizations involved in the RDI2CluB partnership agree to seek injunctions related to these terms primarily in RDI2CluB Project Steering Committee and based on the procedures stipulated in the partnership agreement of the RDI2CluB project.

For users of Forum that are not members of the RDI2CluB partnership, you agree to endeavour to work towards a mutually acceptable settlement.

If efforts to achieve an amicable settlement should fail, the parties concerned are obliged to seek an out-of-court arbitration procedure of an ad-hoc arbitration committee according to the rules of the Finland Arbitration Institute. The parties shall be obliged to accept and apply the decisions of the arbitration committee, subject to the applicable law hereby agreed upon and in compliance with the provisions of the European law.

Each and any legal dispute that may result from or in connection with this agreement, including such over the validity of this agreement itself and the arbitration clause defined above, on which the amicable settlement method was ineffective and the disagreement persists in spite of all efforts being made in this respect, shall be finally decided by the courts. The place of jurisdiction is Jyväskylä, Finland.

### **General Terms**

If a provision of these terms is unenforceable as written, but could be changed to make it enforceable, that provision should be modified to the minimum extent necessary to make it enforceable. Otherwise, that provision should be removed.

You may not assign your agreement with JAMK University of Applied Sciences. JAMK University of Applied Sciences may not assign your agreement to other organizations.

These terms embody all the terms of agreement between you and JAMK University of Applied Sciences about use of the forum. These terms entirely replace any other agreements about your use of the forum, written or not.

### **Contact**

You may notify JAMK University of Applied Sciences under these terms, and send questions on the terms of use of Forum to JAMK University of Applied Sciences, at [anna.aalto@jamk.fi](mailto:anna.aalto@jamk.fi). The company may notify you under these terms using the e-mail address you provide for your account on the forum, or by posting a message to the homepage of the forum or your account page.

### **Changes**

The company last updated these terms on March 29, 2019, and may update these terms again. The company will post all updates to the forum. For updates that contain substantial changes, the company agrees to e-mail you, if you have created an account and provided a valid e-mail address. The company may also announce updates with special messages or alerts on the forum. Once you get notice of an update to these terms, you must agree to the new terms in order to keep using the forum.

## 6. Reference List

- Atwood, J. 2014. Building a Discourse Community. Available at: <https://blog.discourse.org/2014/08/building-a-discourse-community/>
- Atwood, J. 2018. Launching a Successful Discourse Community. Available at: <https://blog.discourse.org/2018/08/launching-a-successful-discourse-community/>
- Bonchek, M. & Choudary, S. P. 2013. *Three Elements of a Successful Platform Strategy*. Harvard Business Review. Available at: <https://hbr.org/2013/01/three-elements-of-a-successful-platform>. Referred to on 10.4.2018.
- Creative Commons 2019. Creative Commons licenses. Available at: <https://creativecommons.org/share-your-work/licensing-types-examples/>
- European Commission 2016. *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. Online Platforms and the Digital Single Market Opportunities and Challenges for Europe*. COM/2016/0288 final. Available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1466514160026&uri=CELEX:52016DC0288>
- European Commission 2016. *Commission Staff Working Document on Online Platforms, accompanying the document "Communication on Online Platforms and the Digital Single Market"*. COM/2016/288. Available at: <https://ec.europa.eu/digital-single-market/en/news/commission-staff-working-document-online-platforms>
- Grundel, I. & Dahlström, M. (2016). *A Quadruple and Quintuple Helix Approach to Regional Innovation Systems in the Transformation to a Forestry-Based Bioeconomy*. *J Knowl Econ* 7: 963. Available at: <https://doi.org/10.1007/s13132-016-0411-7>
- Gryszkiewich, L. & Friedereci, N. 2014. *Learning From Innovation Hubs: Fluidity, Serendipity, and Community Combined*. *Innovation Management*. Available at: <http://www.innovationmanagement.se/2014/12/15/learning-from-innovation-hubs-fluidity-serendipity-and-community-combined/>
- Ministry of Employment and the Economy of Finland 2014. *THE FINNISH BIOECONOMY STRATEGY*. Available at: [https://biotalous.fi/wp-content/uploads/2014/08/The\\_Finnish\\_Bioeconomy\\_Strategy\\_110620141.pdf](https://biotalous.fi/wp-content/uploads/2014/08/The_Finnish_Bioeconomy_Strategy_110620141.pdf)
- Odgen, J. 2014. Want to Hook Your Readers? Apply These 10 Principles to Create Captivating News Stories. Available at: <https://www.copyblogger.com/captivating-news-stories/>
- Regional Council of Central Finland, 2014. *CENTRAL FINLAND STRATEGY 2040*. Available at: [https://www.keskisuomi.fi/in\\_english/central\\_finland\\_strategy\\_2040](https://www.keskisuomi.fi/in_english/central_finland_strategy_2040)
- Toivonen, T. & Friedereci, N. 2015. *Time to Define What a "Hub" Really Is*. Available at: [https://ssir.org/articles/entry/time\\_to\\_define\\_what\\_a\\_hub\\_really\\_is](https://ssir.org/articles/entry/time_to_define_what_a_hub_really_is)

## 7. Terminology and Abbreviations

BIE	= Bioeconomy Innovation Ecosystem
BSR	= Baltic Sea Region
EUSBSR	= EU strategy for Baltic Sea Region
IPR	= Intellectual Property Rights
PA Bioeconomy	= Policy Area Bioeconomy (One of 13 EU Strategy for the Baltic Sea Region's Policy Areas included in the Action Plan)
RDI2CluB	= 'Rural RDI milieus in transition towards smart bioeconomy clusters and innovation ecosystems - Project developing Biobord.
RIS	= Regional Innovation Strategy or Regional Innovation System
RIS3	= Regional Innovation Strategies for Smart Specialization
S3	= Smart Specialization Strategy
SME	= Small and Medium sized Enterprise

## 8. Annexes

**Annex 1. Mapping Approach for Regional Bioeconomy Innovation Ecosystem**

**Annex 2. Tools for Planning the Uptake of Biobord**

**Annex 3. Template for definition of a forum community**

**Annex 4. Checklist for forum facilitator**

**Annex 5. Self-assessment survey for continuous improvement**

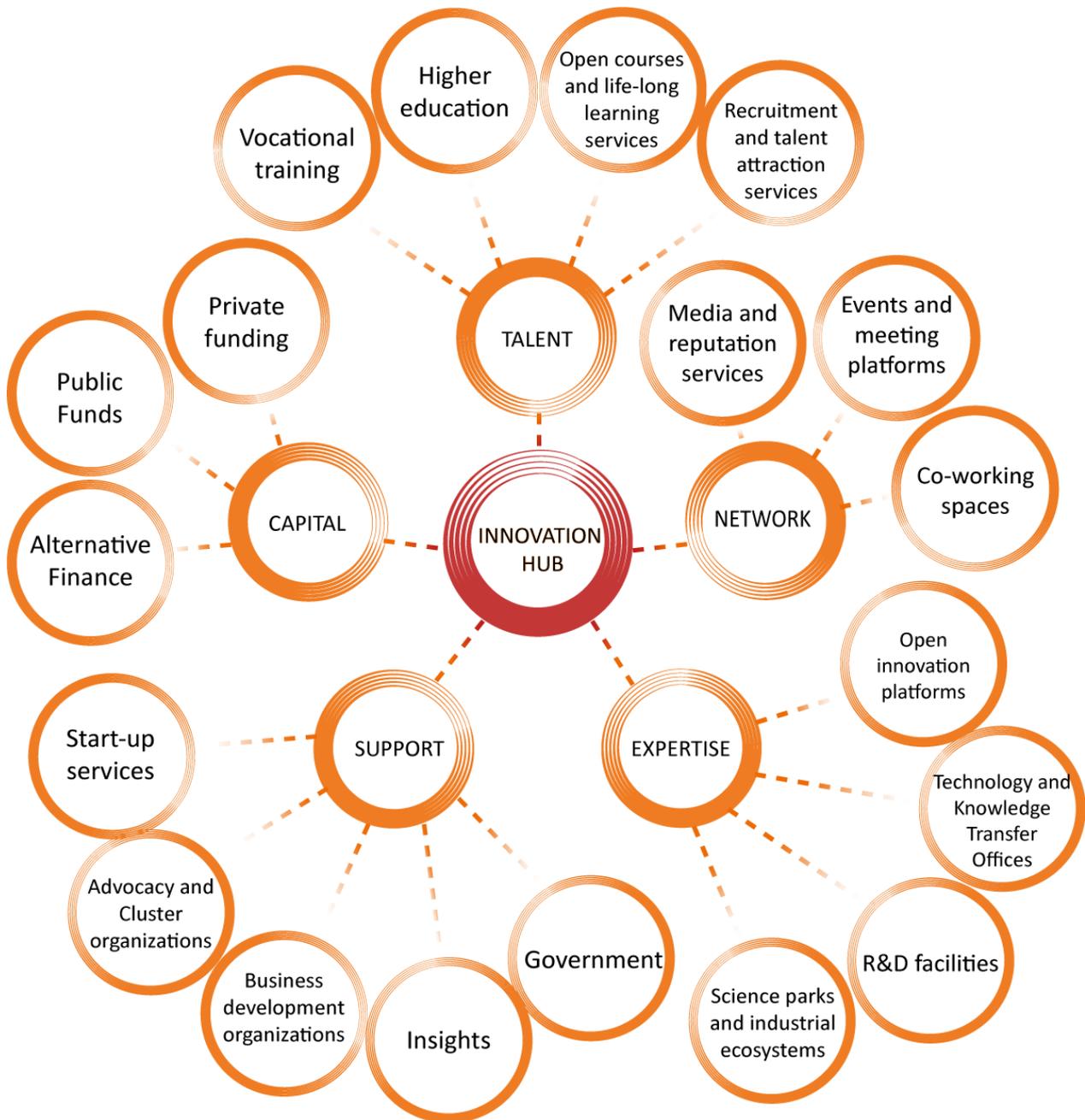
**Annex 6. Recommendations for Forum Facilitator**

**Annex 7. Wagtail CMS Guide for Biobord 1.0**

**Annex 8. User Account Management Guide for Biobord 1.0**

**Annex 9. Biobord Forum Guide 1.0**

## Annex 1. Mapping Approach for Regional Innovation System in Bioeconomy



### Description

The bioeconomy innovation ecosystem (BIE) diagram depicts the bioeconomy innovation ecosystem build around a bioeconomy innovation hub extending to regional, national and international levels. The BIE diagram is made up of a core and three circles:

- **Hub/Core:** The core of the diagram represents a specific bioeconomy innovation hub. The ecosystem is built around the hub consisting of its networks and partners. The hub is seen as a point of entry to the bioeconomy innovation ecosystem for the bioeconomy entrepreneurs (SMEs).
- **Innovation Ecosystem/first circle:** The first circle contains the five main pillars of the BIE that form the basis of any bioeconomy innovation ecosystem.
- **Innovation Services/second circle:** The second circle contains the main subcategories related to the five main pillars.
- **Partner Organizations and Structures/third circle:** The third circle presents the most important organizations currently involved in cooperation with the hub and that are providing the innovation services described in the second circle.
- **Potential Partners/fourth circle:** The fourth circle presents the most important organizations that are seen as potential co-operation partners for the innovation hub in providing the innovation services described in the second circle.

The BIE diagram is applied to the context of the Baltic Sea Region bioeconomy ecosystem and its most important stakeholders. It should be noted that a rapid development of the ecosystem means that this BIE diagram will also be continuously updated.

**A. Network:** Connecting bioeconomy entrepreneurs (SMEs) to other entrepreneurs in the bioeconomy ecosystem as well as to actors in the bioeconomy innovation ecosystem in regional, national and international scopes.

- **A1. Media and reputation services:** Media with strong presence in the community of bioeconomy entrepreneurs (SMEs); Awards, competitions and media for promotion of bioeconomy innovations in different stages
- **A2. Events and meeting platforms:** Physical and online
- **A3. Co-working spaces:** Physical and online

**B. Talent:** Enhancing skills and competences in bioeconomy innovations and availability of skilled professionals for bioeconomy entrepreneurs (SMEs).

- **B1. Vocational training:** in bioeconomy
- **B2. Higher education:** degree programs in bioeconomy
- **B3. Open courses and life-long learning services**
- **B4. Recruitment and talent attraction services**

**C. Support:** Supporting bioeconomy development in the region with business start-up, invest-in and growth services.

- **C1. Start-up services:** incubators, accelerators, venture builders
- **C2. Government:** local and regional authorities and policy makers creating an enabling environment for bioeconomy testing, piloting and up-scaling (public procurement)

- **C3. Insights:** Think-tanks on regional bioeconomy development, future foresight and trends for bioeconomy development
- **C4. Business development organizations:** public agencies, growth services, advisory and development services for SMEs, business premises and invest-in services
- **C5. Advocacy and Cluster organizations:** memberships

**D. Capital:** Providing access to capital and investments for bioeconomy entrepreneurs (SMEs) in regional, national and international scopes.

- **D1. Private funding:** Business Angels, venture capitalists and investors, Corporate Venture Funds
- **D2. Public Funds:** RDI funding and support for investments
- **D3. Alternative Finance:** Crowdfunding

**E. Expertise:** Providing access to innovation services and research & development results, facilities and expertise for bioeconomy entrepreneurs (SMEs) to test and develop their business ideas.

- **E1. Technology and Knowledge Transfer Offices (TTO & KTO):** offering access to expertise within knowledge institutes and academia
- **E2. R&D facilities:** Test-beds, laboratories, demonstrations & pilot sites, prototype workshops etc.
- **E3. Open innovation platforms:** Living labs, open experimentation & development platforms, open source data and tools, idea banks, product development panels etc.
- **E4. Science and business parks:** An area devoted to scientific research or the development of science-based or technological bio-based industries. Industrial ecosystems and symbiosis with bioeconomy focus.

## Annex 2. Tools for Planning the Uptake of Biobord

The toolbox for regional hubs planning the uptake of the Biobord involves three steps designed to assist the planning of the uptake of Biobord and implementation of the operating model.

- Reference Group Analysis
- Innovation Path Matrix
- User Cases

### Step 1: Reference Group Analysis

- Aim:** Understanding the potential of Biobord.eu platform for developing co-operation with the regional, national and international connections of the hub. Forming a basis for defining user cases and identifying the potential co-operation partners for offering innovation services at the platform.
- Reference materials:** Mapping the Bioeconomy Innovation Ecosystem. A list of the bioeconomy innovation ecosystem actors connected to the hub; Biobord Operating Model (user profiles and service paths).
- Implementation method:** Group discussion with relevant coordination team of the regional hub.
- Tool and instructions:** Instructions for compiling the reference group analysis (recommended to conduct as an Excel sheet).
1. Fill 'Bioeconomy Innovation Ecosystem Connection' columns based on the information gathered in 3.1.1 in your region. Categories for 'type of organization' are based on the Bioeconomy Ecosystem mapping categories of **Innovation ecosystem/first circle**: The first circle contains the five main pillars of the BIE that form the basis of any bioeconomy innovation ecosystem AND **Innovation Services/second circle**: The second circle contains the main subcategories related to the five main pillars. Finally, add the 'name of the organisation'.
  2. When you have the complete list of organisations from 3.1.1 phase, you can organize a meeting with some core group of experts from your hub and/or the regional coordination team to deliberate the 'potential relation' of the organizations to the biobord.eu platform. The potential relation is selected from the following 4 categories:
    - A. Co-operation in service development
    - B. Beneficiary of the platform services (users)
    - C. Competition in service provision
    - D. No relation

3. In 'motivation to selection and further details' you can give further information about your choice, e.g. what type of cooperation would be feasible, what user profile the organization may represent, what competing service is the organisation offering or how likely you see that the organisation would be interested in using the platform.

Bioeconomy Innovation Ecosystem Connection		Potential relation (A, B, C and D)		Motivation to selection and further details
Type of organization	Name of the organisation			
<b>A. Network</b>	<i>A.1 Media and reputation services</i>	...	...	
...	...	...	...	

**Table 1. Example of the Reference Group Analysis**

## Step 2: Innovation Path Matrix

- Aim:** Mapping the resources, assets and services that can be connected to the Biobord.eu platform. Identifying regional partnerships for building the community on the platform as well as gaps in the innovation service paths.
- Understanding the overall potential and long-term possibilities of the Biobord as a tool for the hub.
- Reference materials:** Reference Group Analysis  
Biobord Operating Model (user profiles and service paths)
- Implementation method:** Group discussion with relevant coordination team of the regional hub.
- Tool and instructions:** Instructions for compiling the innovation path matrix (recommended to conduct as an Excel sheet).
1. Identify the innovation services and business development services offered by your innovation hub (alone or in co-operation).
  2. In a workshop or via co-working of regional coordination team and stakeholder dialogue, identify which existing innovation services and business development services would be connected to the platform as:

- a. Services promoted via the platform (connection to the service achieved at the platform)
  - b. Services offered at the platform (process partly or totally implemented at the platform)
3. In a workshop or via co-working of regional coordination team and stakeholder dialogue, also identify possible new services that can be developed in regional or transnational cooperation to be connected to the platform.
  4. After identification of the services to be connected to the platform, fill the template 'Innovation path' to provide a description of the service. Please provide also an open description of each service (max. 1 page).

Service	Service path	Innovation approach	Platform element	Stage of innovation path	User profile	Geographical scope	Responsible partner	Other partners (also regional)
Project X								
Service X								
Pilot X								
...								

**Table 2. Example of an Innovation Path Matrix**

### Classification categories

#### Service paths

- (1) Project planning, management and scaling (product/service development project, research pilot, case study, demonstration, RDI project etc.)
- (2) Network building and management
- (3) Smart specialization process (regional dialogues, triple helix co-operation, etc.)
- (4) Calls (for partners, ideas, solutions, talent or expertise)
- (5) Matchmaker (transnational innovation brokerage)
- (6) Product development support (laboratories, test-beds, pilot sites, prototypes & modelling, living labs, assessment panels)
- (7) Business development support (incubator services, soft-landing services, market analysis, feedstock analysis, sustainability assessment and project design)
- (8) Capacity building and awareness raising

## Innovation approach

- (1) Triple helix: innovation process connects actors and resources from academy, research, business and policy
- (2) Quadruple helix: innovation process connects end-users and consumers with triple helix
- (3) Quintuple helix: innovation process connects data on state of the environment and society with triple helix

## Platform element

- (1) Landing page
- (2) Forum
- (3) Dashboard (coming in 2020)
- (4) Knowledge base (coming in 2020)

## Stage of innovation path

- (1) Idea generation
- (2) Idea sharing
- (3) Idea assessment
- (4) Innovation support, including funding, talent, networks, expertise and support

## User profile

- (1) Bridge builder
- (2) Developer
- (3) Supporter

## Geographical scope

- (1) Regional
- (2) National
- (3) International

## Step 3. User Cases for Biobord

<b>Aim:</b>	Understanding the needs of the user groups. Definition of the activities and expected results. Forming a basis for evaluation of the results of Biobord uptake.
<b>Reference materials:</b>	Reference group map; Innovation Path Matrix Biobord Operating Model (user profiles and service paths)
<b>Implementation method:</b>	Regional coordination team co-working and stakeholder dialogue

**Tool and instructions:**

The user case description should be done prior to consultation with the Biobord technical support team. The description includes:

- Open description of the planned use (briefly)
- User group: Expected number of users, organisations, connection to hub
- Specific aims for testing as indicated by the user group
- Geographical scope: regional, national, international
- Implementation period
- Requested support for the implementation

## Annex 3. Checklist for Definition of a Forum Community

### Purpose of the Forum Community

What is the main purpose of the Forum category for the users involved? Is your focus on communication, capacity building, innovation, network, matchmaking or teamwork? Select your focus and provide an open description of the purpose of the Forum category.

#### 1. Focus of the activities

##### TEAM-WORK /PROJECT MANAGEMENT FOCUSED

- Co-working in an adhoc team [ ]
- Co-working in a project team [ ]
- Co-working in an organisational team [ ]

##### NETWORK FOCUSED

- Information sharing within a regional network [ ]
- Information sharing within a national network [ ]
- Information sharing within an international network [ ]

##### CAPACITY BUILDING FOCUSED

- Knowledge building via crowd sourcing [ ]
- Peer learning [ ]
- Expert led capacity building [ ]

##### MATCHMAKING FOCUSED

- Call for solutions [ ]
- Call for partners [ ]
- Call for talent [ ]

##### INNOVATION SUPPORT FOCUSED

- Idea generation [ ]
- Idea assessment [ ]
- Idea promotion [ ]

### 2. User profile

Define user profile to better address and understand the motivation and needs of the user group.

##### USER PROFILE

- Bridge builder [ ]

- Developer [ ]
- Supporter [ ]

### 3. Template on Category Information for Forum Staff

This template will be available via the Platform as an online form. By filling the online form, the Forum Staff will get the needed information for establishing a forum group and/or category.

#### Basic Information

Category Name\*: *Preferably 1-2 words*

Parent category\*: *YES, NO, if YES define the parent category*

Color code: *Hex Code #RRGGBB*

Launch date\*:

#### Permissions & users

Everyone (all registered users) can\*:

- See topics [ ]
- See topics and Reply to them [ ]
- See topics, Reply to them and Create own topics [ ]
- Only closed group can see the topic [ ]

Closed group (registered users upgraded to the closed group) can\*:

- No closed group [ ]
- See topics [ ]
- See topics and Reply to them [ ]
- See topics, Reply to them and Create own topics [ ]

List the names and emails of members to the closed group\*: *(mandatory information if there is a closed group)*

Category has a moderator\*: *YES, NO*

- Require moderator approval of all new topics\* [ ]
- Require moderator approval of all new replies\* [ ]
- Name of the moderator(s)\*: *(mandatory information if there is a closed group)*
- Email of the moderator(s)\*: *(mandatory information if there is a closed group)*

#### Settings

Category has events. [ ]

Category has a calendar. [ ]

Category has locations and a map. [ ]

Appearance of topics is per: 'Latest'  OR 'Most active'

If appearance per 'Most active', please select the preference period:

- All time
- Yearly
- Quarterly
- Monthly
- Weekly
- Daily

## Images

Category Logo Image

Category Background Image

## 4. IPR management approach

- Open group – Attribution (by) licence (Creative Commons)
- Open group – ShareAlike (sa) licence (Creative Commons)
- Open group – NonCommercial (nc) licence (Creative Commons)
- Open group – NoDerivatives (nd) licence (Creative Commons)
- Closed groups - define privacy terms within the group

## 5. 'About this Category'

Every category has an initial "About this category" topic as an open description as an introduction to the category. It should answer the questions:

- What is the purpose of this category?
- What is happening at this category? What can I do here?
- Who is this category meant for? Who are in the user group or target group?
- Who is facilitating or organizing the activities at the category?
- Where can I ask for more information?

"About this category" should be pinned to the top of the category. The description is very important for the users. Make sure to give your new category a good, clear description, so people understand what belongs there!

Keep the description simple; easy to approach and understand. Make sure your audience feels welcome to join in.

## Annex 4. Checklist for Forum Facilitator

### Make a commitment as a facilitator

Before you start using the Forum category, confirm in your organisation or team what commitment are you making for the use of the Forum.

### Our organisation or team will commit to the following

Inviting the user group to join

- Engaging (potential) user group directly with personal invitation [ ]
- Engaging (potential) user group directly with a face-to-face event to support launch [ ]
- Directing a user group from another communication channel or platform to Biobord [ ]

Welcoming new comers

- Send a greeting message to all new registered users from our region [ ]
- Send a greeting message to all new registered users discussing in our category [ ]
- Like all posts from new users and reply to them to welcome new comers to join the discussion [ ]

Initiating discussion

- Starting discussion with open-ended 'getting to know you' topics for people to share their opinions, experiences, stories, or pictures, e.g. an "introduce yourself" topic. [ ]
- Moving discussions from private email silos to the forum area. [ ]
- Share interesting articles or videos from the web as new topics to start discussions. [ ]
- Seeding the discussion with interesting topics before and during the launch of the category [ ]

Having a quick response time

- Responding to any post in my category within 1 working day [ ]
- Responding to any posts in my category within 3 working days [ ]
- Responding to any posts in my category within 5 working days [ ]

Leading the discussion

- Making 3-5 topics weekly [ ]
- Making a new topic at least weekly [ ]

Monitoring the discussion

- Informing Forum Staff of the inappropriate or suspicious posts and replies [ ]
- Moderating the posts before publication [ ]

Replacing other communication channels in communication related to the category purpose

- Replacing or minimizing use of email in favor of Biobord [ ]
- Replacing or minimizing the use of internal communication platforms in favor of Biobord [ ]
- Replacing or minimizing the use of external communication platforms in favor of Biobord [ ]

Planning and implementing a team building approach for the forum community

- Keeping the description of the category updated ('About the category' text) [ ]
- Identifying and utilizing a strategy for team-building in online meetings [ ]
- Identifying and utilizing supporting programmes and tools where needed [ ]
- Identifying and utilizing an IPR management approach and communicating it clearly to users [ ]

Communication and promotion of the Forum community

- Linking the Forum category via our organization's website landing page (preferably icon, banner or main navigation) [ ]
- Linking the Forum category via our organization's newsletters, blogs etc. [ ]
- Linking the Forum category via our organization's email signature [ ]
- Linking the Forum category via our Twitter, Facebook, and other social media [ ]
- Linking via our partner's communication channels [ ]
- Organising a social media campaign to support the launch [ ]
- Organising a reward system for active users, or new comers [ ]
- Organising promotional events or training workshops for potential user groups [ ]

Involvement of organisation

- All our members will register as users as Biobord will be an official communication platform. [ ]
- All members are encouraged to register as users to engage with external stakeholders and target groups. [ ]
- Only specific team will be using the Biobord platform to carry out the activities related to management and facilitation of the forum category. [ ]

## Annex 5. Self-assessment Survey for Continuous Improvement

### 1. Review Indicators

FOCUS	Key performance indicators
<b>Team-work /Project Management</b>	<ul style="list-style-type: none"> <li>• Posts (new posts created)</li> <li>• Daily engaged users (number of users that have liked or posted during a day)</li> <li>• Average time for first response to new topics (hours)</li> </ul>
<b>Network management</b>	<ul style="list-style-type: none"> <li>• Topics (new topics created)</li> <li>• User visits</li> <li>• Forum pull (DAU/MAU = daily users/monthly users, indicates the commitment level. Preference is over 30 per cent.)</li> </ul>
<b>Capacity building</b>	<ul style="list-style-type: none"> <li>• Posts (new posts created)</li> <li>• User visits</li> <li>• Average time for first response to new topics (hours)</li> </ul>
<b>Matchmaking</b>	<ul style="list-style-type: none"> <li>• Topics (new topics created)</li> <li>• User visits</li> <li>• Average time for first response to new topics (hours)</li> </ul>
<b>Innovation support</b>	<ul style="list-style-type: none"> <li>• Topics (new topics created)</li> <li>• User visits</li> <li>• New contributors (new people that made posts)</li> </ul>

Based on your focus, there are three key performance indicators for evaluation of your success in running the category. Forum staff will provide you an update of your key performance indicators. Analyse the results with the following questions.

- Do the performance results meet our expectations?
- What was surprising?
- Are we happy with the results?
- Is there some performance indicator that we hope to improve?
- Name one indicator that would be the most essential one to improve, if relevant.

### 2. Review Our Commitment

Based on the checklist for building gravity, review the performance in relation to the commitments made as facilitator. Analyse the results with the following questions.

- Did we manage to fulfil all our commitments? Which ones could we improve on?

- If you have not met all commitments, what have been the reasons behind that?
- If you have not met all commitments, what do you think has been the effect on the community?
- Name two areas where you should upgrade your commitments or improve their execution.

### 3. Renewed commitment

Name three new commitments you will concentrate on improving in the next phase.

## Annex 6: Recommendations for Forum Facilitator

*The recommended conducts for the management of the forum category have been defined based on the experiences and identified best practices of Discourse, a forum hosting company with experience of 1500+ customers. The recommendations for planning the launch are adapted from the blogs of Discourse Co-founder Jeff Atwood guiding new forum hosts in the development of forum communities (Atwood 2014 & 2018).*

### Plan the Launch (Atwood 2014 & 2018)

Before launching, be sure to:

- Clearly define your community's purpose.
- Seed the discussion with interesting topics.
- Commit to visiting and participating regularly.
- Link your community everywhere and promote it so people can find it.

### Clearly define your community's purpose

Every category has an initial "About this category" topic. The very first thing people will ask — **what is this place?** How would you describe your community to someone you just met in a 60 second elevator ride? Make sure that is visible on your home page, as a banner or pinned topic. The "About this category" should be pinned to the top of the category, and the description you enter will be used in a bunch of places. Be sure to give your new category a good, clear description, so people understand what belongs there!

Do not create too many initial categories, as you can overwhelm your audience. You can always add more categories, and easily categorize topics later. It is better to figure out the organization as you go rather than assuming you will get it all right from the beginning.

The categories need to be active to function, so the best approach is to build the categories based on need. Start a category when you have a targeted user group in mind with a need for active dialogue or team working.

*Pinned topics: Once someone reads to the bottom of a pinned topic, it is automatically unpinned for them specifically. They can change this via the personal pin controls at the bottom of the topic. When staff pins a topic, they can pin it globally to all topic lists, or just within its category.*

*Banner topics: If a pin is not visible enough, you can also turn one single topic into a banner. The banner topic floats on top of all topics and all primary pages. Users can permanently dismiss this floating banner by clicking the × in the upper right corner.*

## Seed the discussion with interesting topics

Your next order of business is to seed your site with interesting topics and replies. The worst thing you can do is open with a blank site.

The initial topics are critical:

- To further explain what your community is. The topics you see on the front page right now? These are the kinds of conversations that happen here. This is what we tend to generally talk about. This is what our community is.
- To provide examples of the sort of content you want. To let everyone know that yes, topics like these are welcome on our site. Create more discussions like these!
- To invite participation. Have some getting to know you topics for people to share about themselves, and some topics that are open ended and encourage replying with opinions, stories, or pictures.
- Recruit friends, recruit colleagues, recruit power users, do whatever it takes to build out an initial solid base of content. Send out invites! You cannot launch your community without it.

## Initiate Conversation!

- Have some open-ended getting to know you topics for people to share their opinions, experiences, stories, or pictures. An “introduce yourself” topic is always fun, and you should go first!
- Generously like any and every post you enjoy! What type of content gets liked is a major part of your community’s culture. Set an example by frequently liking posts in the early days of your forum. Seeing liked posts also encourages people to reciprocate in kind, and come back for more.
- Are there common themes that tend to come up again and again with a specific group? Try moving those discussions out of private email silos into your public (or private) discussion area.
- If you find an interesting article on the web you want to discuss, quickly start a new topic by pasting a link into the topic title. Try it!
- Where have you seen interesting, thoughtful discussions recently? Can you bring the spirit of those discussions to your site? Imagine what a model user you would love to see on your site would do – and then try doing that yourself. Invite friends or co-workers to post example topics and reply to them so visitors can browse the existing conversations to discover what your community is about.

## Start with yourself

Leadership comes from the top. The presence of staff speaks volumes about whether your community is alive and thriving. Do not just say you believe in this community; demonstrate that through your personal participation and enthusiasm. Lead by example. Reply to questions people have, help your community learn the ropes, gently guide and shape the community as you go.

Half of any community is showing up regularly. There is no substitute for simply being there, each day, every day. Welcome and respond to new users as they arrive. Listen to their feedback. Encourage everyone else to do the same over a period of months and soon you will have a core of regulars that form the heart of your community – maybe even a few members so engaged they could eventually become community moderators.

*Be patient. Building communities is hard. It takes months if not years. No software alone can guarantee the success of a community. However, you can! Integrate your community into your organizations and hubs daily activities - and your community will be off to a solid start.*

## Link your community everywhere and promote it

Start by linking the Forum *everywhere*:

- From your website in your main navigation
- In newsletters, email, blog...
- On Twitter, Facebook, and other social media

Think where you can place links to your community so that people (and web search engines) will naturally discover it.

Have some special launch fanfare when your community opens. This will drive an initial rush of new community members, some of whom will stick around and seed early growth. Consider offering small rewards or benefits for people who sign up and become active users.

Send personal invitations to your staff, power users, or friends, to log in early and reply to your initial topics to generate activity. Send one-click email invites via your Discourse invite page (it is on your user profile page). You can also send bulk invites to many email addresses at once.

One way to get people to visit your site is to invite them via email. You can do this via:

- The Invite button at the bottom of the topic.
- The Invite area on your profile page.
- The invite area on your profile page also includes advanced Staff methods of sending bulk invites, and inviting users into groups.

## Good Practices of Facilitation

Group facilitation is an important factor determining the success of the co-working in the forum. Good facilitation can help a team achieve their goals in the most effective and constructive manner. The facilitation of co-working should address at least the following aspects to create fruitful co-working premises for the team:

- Ensure the expected outcome/s or objectives are clear
- Establish what the expectations of the participants are concerning the working methods and results
- Energise and manage participation with suitable group working methods and roles for participants
- Recognise and reinforce supportive behaviours and responses. Establish and build trust with honest and transparent communication culture as well as team building exercises
- Evaluate success either by using individual or group feedback, to review and draw out responsibility for the action points

## Five simple ways to strengthen trust and interaction in forum co-working

- Update your user profile. Use a photo, background photo and introduce yourself.
- Post your topics as first person accounts. Tell the information from your personal perspective and include your personal reflections. Emoticons, videos and photos can help as well.
- Do not simply attach a document. Try to summarise the main points and the needed actions as text, so that the reader can react to your topic without opening the attachment.
- Involve an action message in your topic. Ask for a specific feedback or include a question, poll or vote.
- Respond and react to the topics posted by others. If nothing else, like the topic and let them know you read their text.



# WAGTAIL CMS GUIDE FOR BIOBORD

EDITION 1.0

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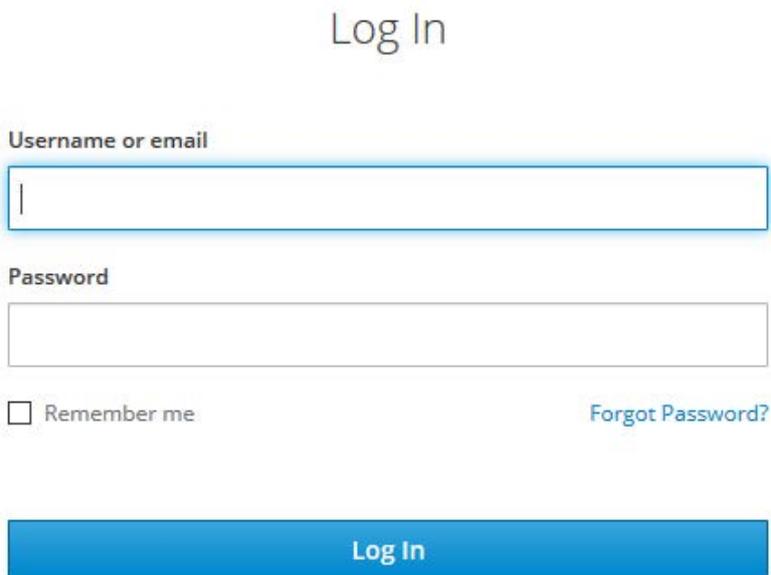
## Content

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## 1. Login Screen

To create new content for the landing page view, login must be performed. The purpose of login is to check that authorized users from each hub can create hub specific content like news articles, organisations and services provided by each organisation.

Start by opening the following address with your web browser: <https://biobord.eu/admin> . The login screen shown in figure 1 should appear. Login with your email address and password you have created earlier. This login allows you to perform actions across the whole web platform, for example taking a part in discussions and so on.



Log In

Username or email

Password

Remember me [Forgot Password?](#)

Log In

**Figure 1. Login screen**

After successful login you should see CMS home page similar to one presented in Figure 2. The navigation items and descriptions are included in the figure.

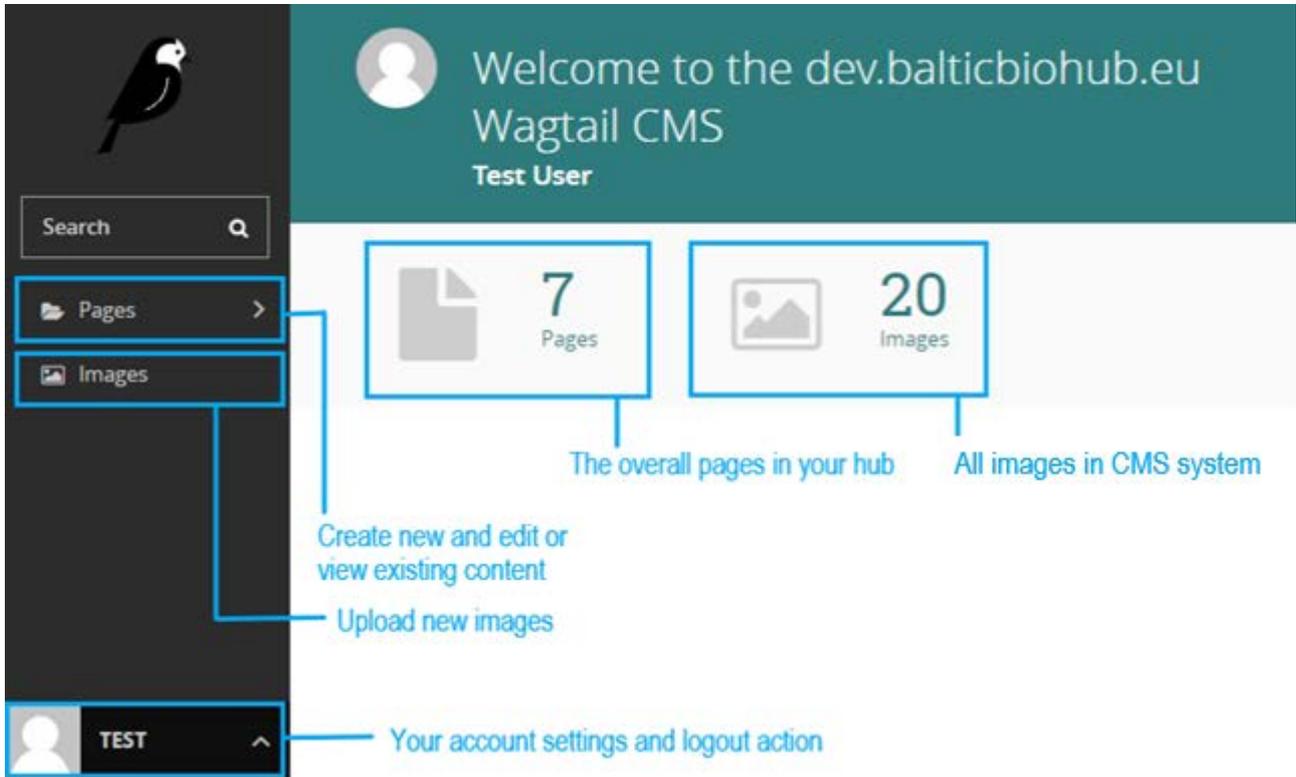


Figure 2. CMS home page view

## 2. Account Settings

Your account settings can be changed by clicking your username in the lower left corner of Wagtail admin (presented in Figure 3). This menu can be used to either Log out and end your session or modify your account settings.

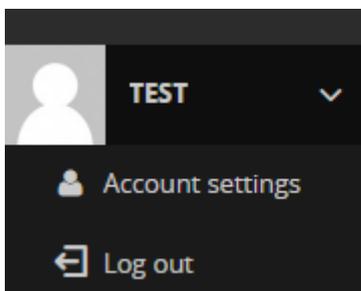
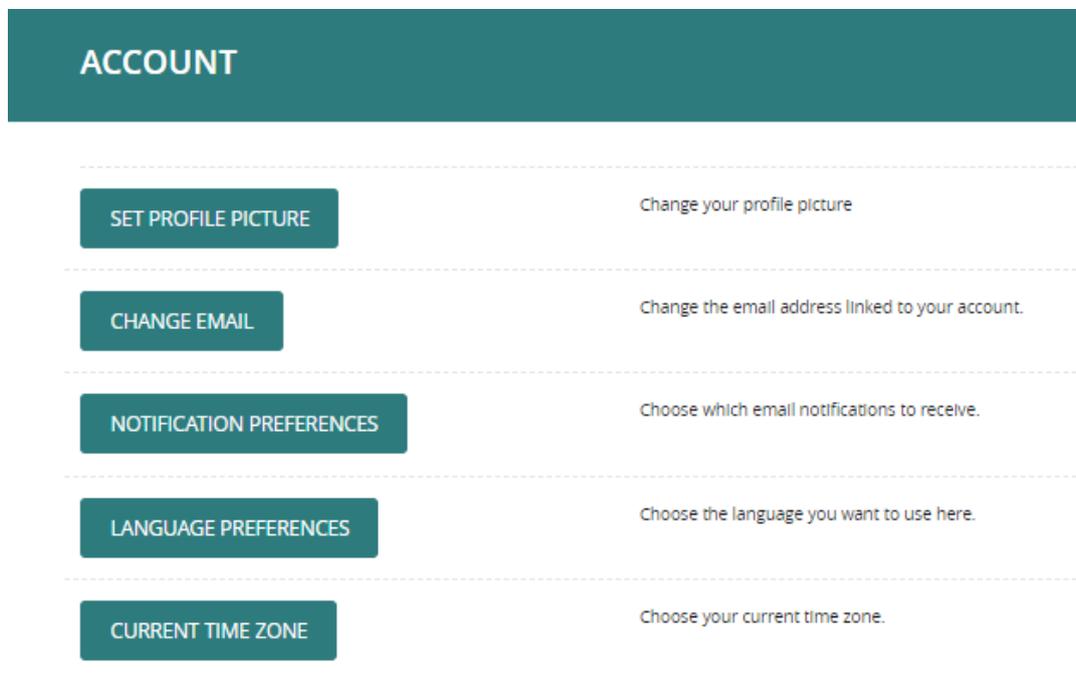


Figure 3. Account menu

Account settings menu is presented in Figure 4. It has five settings you may edit:

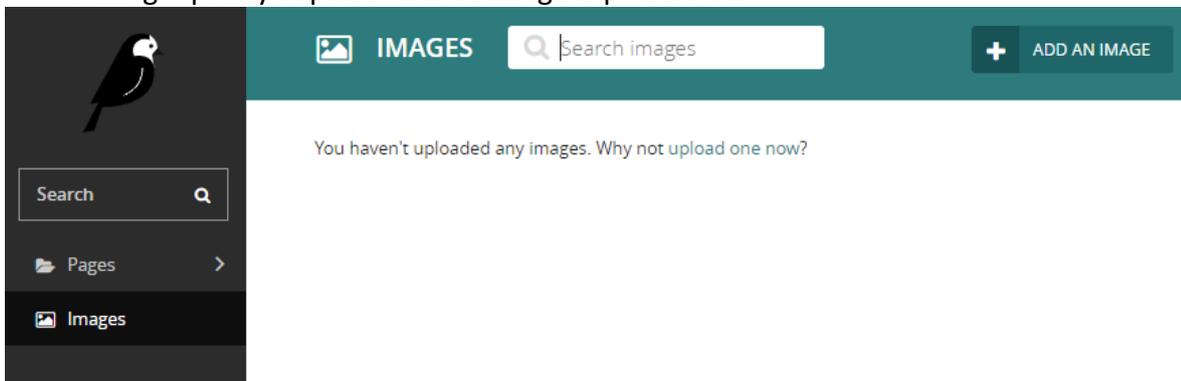
- Set your profile picture
- Change your accounts email address (**do not change since this is attached to the external authentication system!**)
- Notifications (these settings won't have effect since moderation for page edits and publications is not used)
- Change your Wagtail admin system user interface language
- Set your time zone setting for your country



**Figure 4. Account settings menu**

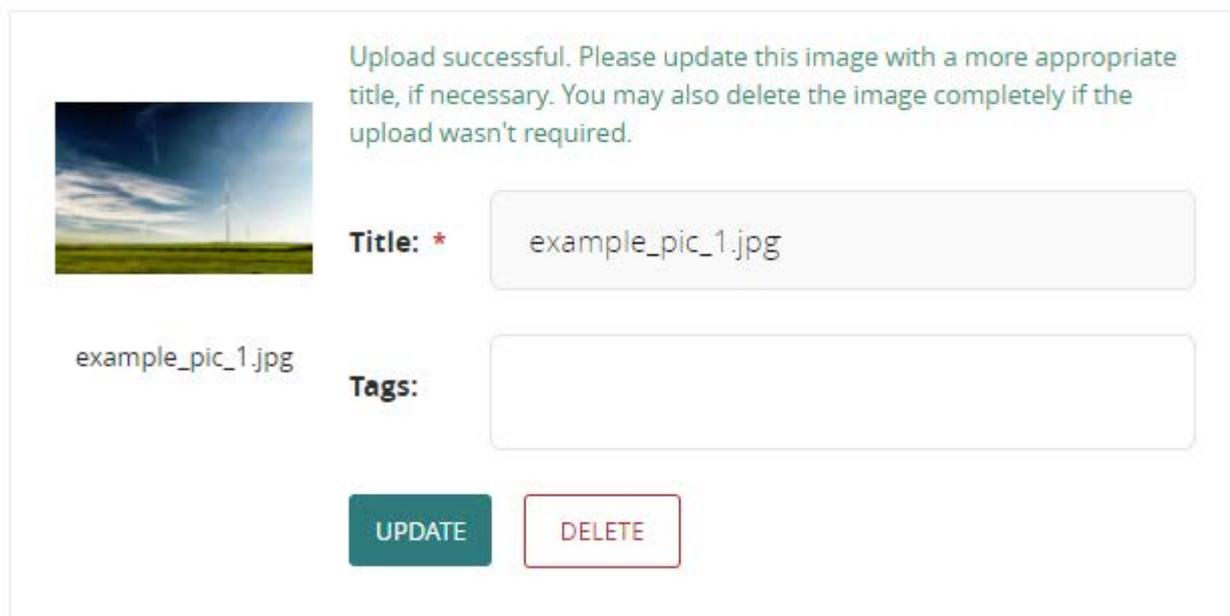
### 3. Uploading Images

Images can be uploaded in two ways within the CMS. There is a separate menu found from the left navigation bar (this is shown in Figure 5). As shown in the figure, there aren't any default images for the user. You may start transferring images by choosing either the **upload one now** – option or **add an image** –option. Images can be uploaded by dragging them into the gray box area or by using the file browser option for navigating them from your computer. Multiple images can be uploaded in a group. Before performing the upload, check that each individual image is under 10 MB in size and has one of the following file extensions: gif, jpeg or png. It is also suggested that uploaded images have the minimum dimensions of 1000x800 to ensure better image quality in places where image is presented.



**Figure 5. Image upload tool**

After the successful upload action, each image should have its own preview box like the one shown in Figure 6. You may edit the title of the image and attach tags for the image. Tags can be used for categorizing images within the Wagtail CMS system. When you are ready to upload the image, select **update**.



**Figure 6. Example of an uploaded image**

Another way for uploading images is to use the image upload property when creating new content. All uploaded images can be modified afterwards through Images menu. It is recommended to set focal area for each uploaded image. Focal area ensures that the most important part of the image is shown in the web platform (for example the news preview in the landing page). Figure 7 illustrates the setting of focal area.

**FOCAL POINT (OPTIONAL)**

To define this image's most important region, drag a box over the image above.

REMOVE FOCAL AREA

MAX DIMENSIONS

3648x2432

FILESIZE

1.5 MB

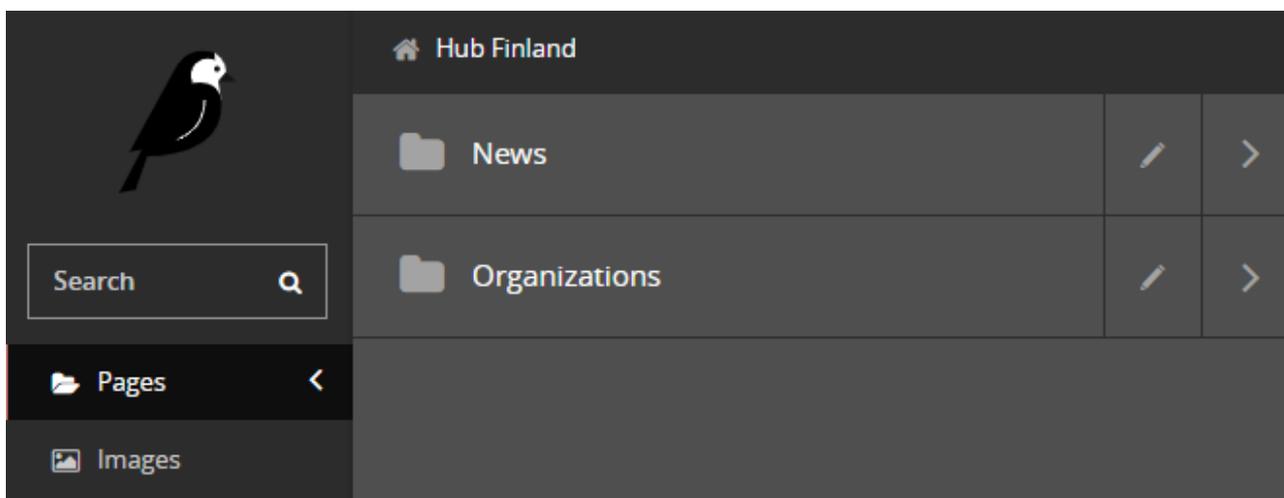
**Figure 7. Setting the focal area for the image**

## 4. Creating New Content

The administrators of each hub are allowed to create new content related to their own hub. Content can be categorized in the following way:

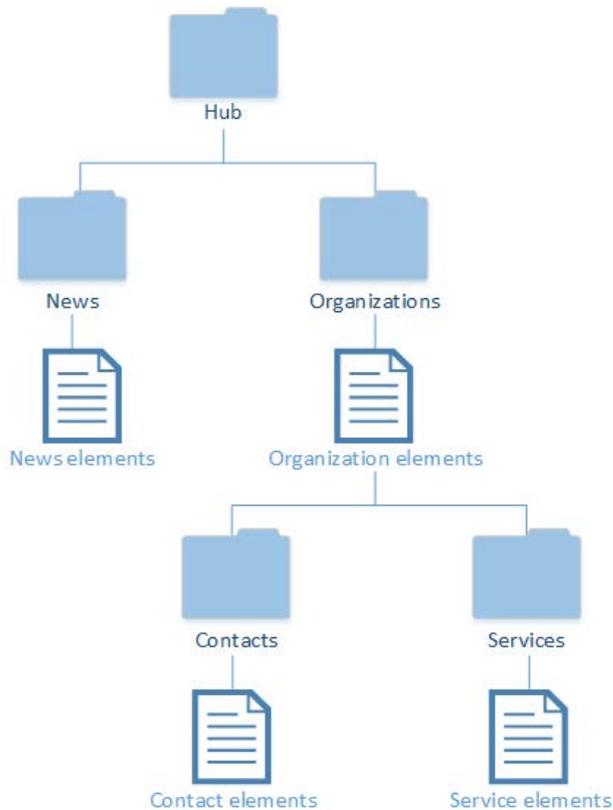
- News articles
- Organisations
- Services provided by organisations

By clicking the Pages selection in the left navigation menu, hub specific navigation menu appears as shown in Figure 7.



**Figure 7. Hub specific menu**

The structure for adding the content is shown in Figure 8. Each hub has two folders under their root folder: *News* and *Organisations*. All hub related news are created under the News folder and all organisations are created under the Organisations folder. Each organisation created under the Organisations folder will again have Contacts and Services folders available. Contacts should be created first in order to have them listed when adding a new service.



**Figure 8. CMS folder hierarchy**

## 4.1 Creating News Articles

To create and publish a news article for the web platform, perform the following steps:

- Hover your mouse cursor over the news row and the plus sign should appear at the end of the row as presented in Figure 9
- You can add a new news article by clicking the plus sign (this applies only for the first news article as the following news articles can be added by clicking the arrow at the end of the row and selecting **Add child page**)
- Fill in the following information:
  - **Title:** The name for the news article
  - **News content:** This field may include text, lists, images, links, documents and embedded videos.

- **Sector categories:** Choose bio economy related categories which this news article belongs to. You may choose multiple categories by holding Ctrl button while selecting the options.
- **Image:** Choose title image for your news article. You can use images that you have previously uploaded to the CMS or upload a new one using the **upload** tab.
- You can select the **preview** option at the bottom of the page before publishing the news article in order to check how it looks like.
- You can now either publish it by selecting **publish** or save it as a draft by selecting **save draft** from the dropdown menu at the bottom of the page. You should select **save draft** if you aren't able to finish filling the news article completely during this session.

## 4.2 Creating a New Organisation

Organisations are created the same way as news articles. To create one, follow these steps:

- Hover your mouse cursor over the Organisations row and the plus sign should appear at the end of the row as presented in Figure 9
- You can add a new organization by clicking the plus sign (this applies only for the first organisation as the following organisations can be added by clicking the arrow at the end of the row and selecting **Add child page**)
- Fill in the following information:
  - **Title:** Organisation name
  - **Title image:** Choose title image for the organisation
  - **Link:** The web address of the organisation home page
  - **Organisation description:** The descriptive text of the organisation. Like news articles, this also may contain text, lists, images, links, documents and embedded videos.
- As with the news articles, same options are available for organisations: **save draft**, **publish** and **preview**.

TITLE ▾	UPDATED ▲	TYPE ▾	STATUS ▾	
Organisations	1 month, 3 weeks ago	Organisation sub folder	LIVE	
News	1 month, 3 weeks ago	News sub folder	LIVE	

Hover your mouse over the row and click the plus sign to add organisation / news

**Figure 9. Adding new organization / news**

### 4.3 Creating a New Service

To create a new service, first choose the service providing organisation under the hub by clicking the arrow at the end of the selected organisation row. Follow these steps:

- Hover your mouse cursor over the Services row and the plus sign should appear at the end of the row as presented in Figure 10
- You can add a new organization by clicking the plus sign (this applies only for the first service as the following services can be added by clicking the arrow at the end of the row and selecting **Add child page**)
- Fill in the following information:
  - **Title:** The name of the service
  - **Title image:** Choose title image for this service.
  - **Service content:** The description of the service. This field can include text, lists, links, images, documents and embedded videos.
  - **Service categories:** Choose one or multiple service categories that best describe this service. You may choose multiple options by holding Ctrl button while selecting.
  - **Sector categories:** Choose one or multiple bio economy sector categories that best describe this service. You may choose multiple options by holding Ctrl button while selecting.

- **Contacts:** Choose one or multiple contact persons for the service. Contact persons must be added first through previous menu (see 5.4 Creating new contact). The email address of the contact person will be shown as contact information in the footer section of the service card.

#### 4.4 Creating a New Contact

To create a new contact, first choose the service providing organisation under the hub by clicking the arrow at the end of the selected organisation row. Follow these steps:

- Hover your mouse cursor over the Contacts row and the plus sign should appear at the end of the row as presented in Figure 10
- You can add a new contact by clicking the plus sign (this applies only for the first contact as the following contacts can be added by clicking the arrow at the end of the row and selecting **Add child page**)
- Fill in the following information:
  - **First name**
  - **Last name**
  - **Email address**

↑↓ SORT	TITLE ▾	UPDATED ▾	TYPE ▾	STATUS ▾
	<b>Services</b> [EDIT] [ADD CHILD PAGE] [MORE ▾]		Services sub folder	[LIVE] 
	<b>Contacts</b>		Contacts sub folder	[LIVE]

Hover your mouse over the row and click the plus sign to add contacts / services

**Figure 10. Adding new service / contact**



# USER ACCOUNT MANAGEMENT GUIDE FOR BIOBORD

EDITION 1.0

ANTTI HÄKKINEN, JAMK UNIVERSITY OF APPLIED SCIENCES  
PUBLISHED: AUGUST 27, 2019

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## 1. Briefing

Biobord web platform users can manage their user account settings through Keycloak, which is known as identity and access management service. Each registered users can use Keycloak to do the following:

- Edit account related information
- Change the password
- Enable the two factor authentication
- Monitor and manage all active sessions
- Read the list of all available roles and access permissions for different parts of web platform

## 2. Registration for the Platform

Our platform supports the self-registration process where users may create their own account. Start by going to the address <https://forum.biobord.eu/> and clicking the *Sign Up* button at the upper right part of the page as illustrated in Figure 1.



**Figure 1. Sign Up button**

You will be redirected to login page. Click the Register link as shown in Figure 2.

Log In

Username or email

Password

Remember me [Forgot Password?](#)

[Log In](#)

New user? [Register](#)

**Figure 2. Link for registration**

The registration form will be shown. Fill in all fields and click Register. You will now need to verify your email address by clicking the link to email address verification found in the email you entered during the registration. If you cannot find the verification email in your inbox, check the spam folder to be sure. You can also re-send the email by clicking the link shown in Figure 3.

Email verification

 You need to verify your email address to activate your account.

An email with instructions to verify your email address has been sent to you.

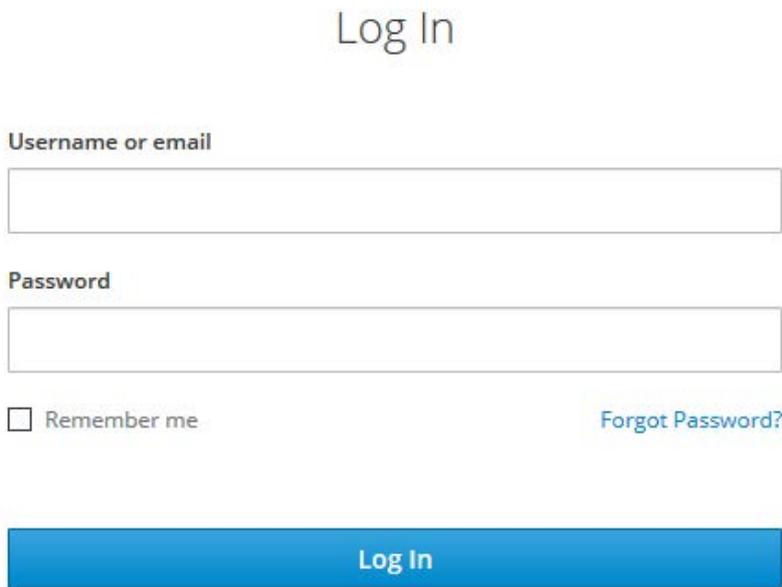
Haven't received a verification code in your email? [Click here](#) to re-send the email.

**Figure 3. Email verification notification**

After clicking the verification link, you will be redirected to discussion forum with popup message including the registration information. These values come from previous registration form and you can confirm these by clicking the *Create New Account* button.

### 3. Resetting the Password

If you forget your password for the web platform, it can be reset with Keycloak. To reset the password click the **Forgot Password** link shown in the login form (see Figure 4). In order to reset the password, you must provide the valid username or email address, which you own and have been registered for the system previously. The link for resetting the password will be sent for your email address. For security reasons, the link is active only for 5 minutes. If you cannot find the mail from your received emails box, check the spam folder. After clicking the link found from the received email message, you will be provided with password reset form where the new password is required.



Log In

Username or email

Password

Remember me [Forgot Password?](#)

Log In

Figure 4. Login form

### 4. User Account Management

You can edit your user account settings by entering the following url in your web browser: <https://auth.biobord.eu/auth/realms/master/account>. The user management page has five sections:

- Account
- Password
- Authentication
- Sessions
- Applications

## 4.1 Account Section

Account section screen is shown in Figure 5. You may change your preferred username, email address and your name information. Both username and email address can be used for login. Email address is required for resetting your password.

Edit Account

\* Required fields

Username \*

Email \*

First name \*

Last name \*

Figure 5. Edit Account screen

## 4.2 Password Section

In Password section presented in Figure 6, you may change your current password. This is done by entering the existing password in the first field (**Password**), your new password in the second field (**New Password**) and your new password again in the third field (**Confirmation**).

Change Password

All fields required

Password

New Password

Confirmation

Figure 6. Change password screen

### 4.3 Authenticator Section

In authenticator section, you can enable two factor authentication if you prefer it. Two factor authentication means that each authentication action (for example user logging into the system) has two phases:

- Enter your user account credentials (username and password)
- Enter the token provided from authenticator you access with your mobile phone

This further increases the security for your user account. Authenticator screen is presented in Figure 7. You must first install either one of the presented authenticator applications for your mobile phone (FreeOTP or Google Authenticator). After the installation open the installed application and it provides the camera view with barcode reader which is used to scan the barcode shown in the authenticator screen. It then provides the code which can be used once. Enter the given code into **one-time code** field and finish the setup with **Save** button.

#### Authenticator

1. Install one of the following applications on your mobile

- FreeOTP
- Google Authenticator

2. Open the application and scan the barcode



[Unable to scan?](#)

3. Enter the one-time code provided by the application and click Save to finish the setup.

One-time code

Cancel

Save

**Figure 7. Authenticator screen**

## 4.4 Sessions Section

This section is used to manage your existing sessions where your user account is logged in with Keycloak service. You can terminate all active sessions by clicking the **Log out all sessions** button. This logs user out of the current Keycloak session also. Figure 8 illustrates the situation where same user has logged in with two different devices (for example with laptop and mobile phone).

### Sessions

IP	Started	Last Access	Expires	Clients
::ffff:195.148.26.24	Mar 27, 2019 6:53:10 AM	Mar 27, 2019 6:58:05 AM	Mar 27, 2019 4:53:10 PM	account
::ffff:37.219.100.176	Mar 27, 2019 6:57:53 AM	Mar 27, 2019 6:57:54 AM	Mar 27, 2019 4:57:53 PM	account

Log out all sessions

**Figure 8. Sessions screen**

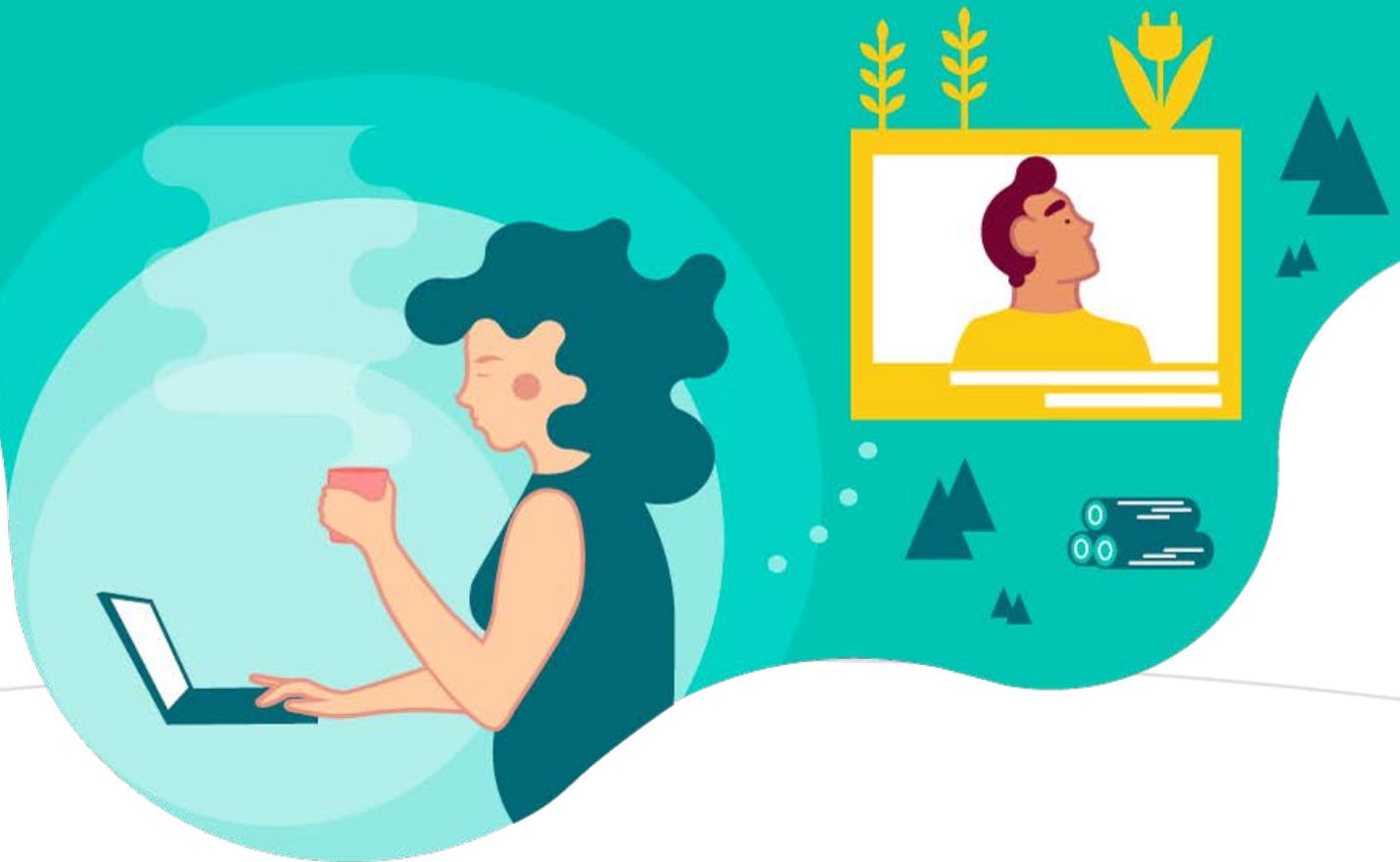
## 4.5 Applications Screen

Applications section has the list of all sections on web platform where you have access. This section is for read only viewing and you cannot modify any access rights. As stated in Figure 9, user has access to Wagtail CMS system for content creation and to Discourse discussion forum in order to take a part into discussions.

### Applications

Application	Available Roles	Granted Permissions	Additional Grants	Action
Account	Offline access , View profile in <b>Account</b> , Manage account in <b>Account</b> , Manage account links in <b>Account</b>	<b>Full Access</b>		
Broker	Offline access	<b>Full Access</b>		
wagtail	Obtain permissions , Offline access , View profile in <b>Account</b> , Manage account in <b>Account</b> , Manage account links in <b>Account</b>	<b>Full Access</b>		
discourse	Obtain permissions , Offline access , View profile in <b>Account</b> , Manage account in <b>Account</b> , Manage account links in <b>Account</b>	<b>Full Access</b>		

**Figure 9. Application screen**



# BIOBORD FORUM GUIDE

EDITION 1.0

ANTTI HÄKKINEN, JAMK UNIVERSITY OF APPLIED SCIENCES

PUBLISHED: AUGUST 27, 2019

## Content

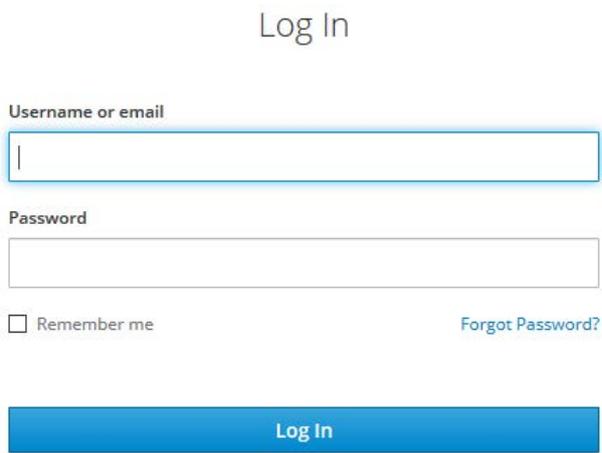
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## 1. Briefing

Discussion forum in Biobord web platform is meant for discussions between users through categorized topics. Users may also utilize real-time chat service for quicker communication. This document describes the main features of the discussion forum.

## 2. Login

User authentication is handled with Keycloak as a part of the login process. After you click the login button at the top right corner of the page, you will be redirected to Keycloak authentication service and the login form is presented as illustrated in Figure 1.



Log In

Username or email

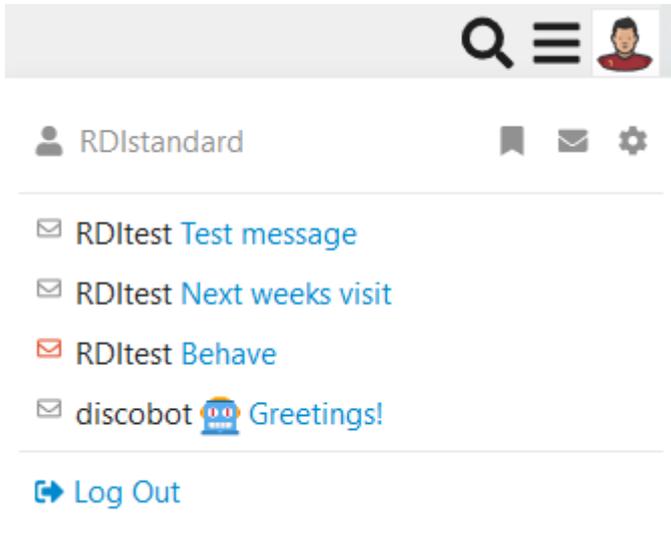
Password

Remember me [Forgot Password?](#)

Log In

### Figure 1. Login form

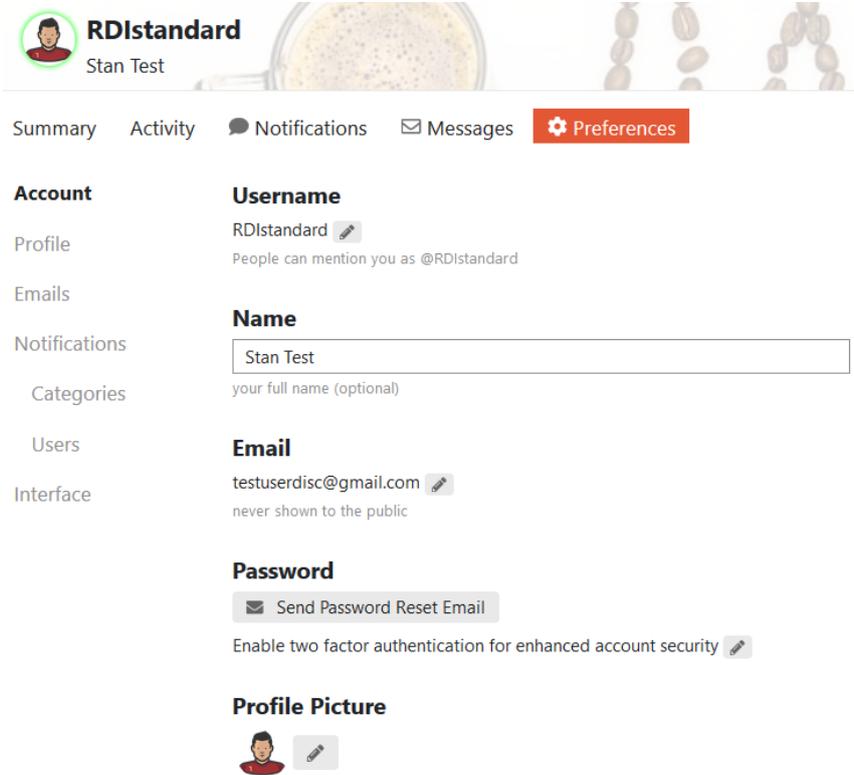
After successful login, you should see your user avatar at the top right corner as presented in Figure 2. Now you should be able to take a part to discussions in public categories and closed categories that are dedicated for your user account. This active login session also allows you to utilize other parts of the web platform in the same browser session where you have access rights.



**Figure 2. User menu for logged in user**

### **3. User Profile Settings**

Before using the discussion forum, it is advised to go through your user profile preferences to personalize your user experience. You can access your user profile preferences by clicking your avatar in the top right corner of the page and then clicking the cog icon  from the dropdown menu. The view should change and you should see the preferences page like presented in Figure 3.



**RDlstandard**  
Stan Test

Summary Activity Notifications Messages Preferences

**Account**

Profile Username  
RDlstandard   
People can mention you as @RDlstandard

Emails Name  
Stan Test  
your full name (optional)

Notifications

Categories

Users Email  
testuserdisc@gmail.com   
never shown to the public

Interface Password  
 Send Password Reset Email  
Enable two factor authentication for enhanced account security 

Profile Picture  
 

**Figure 3. User profile settings**

Here is the list what you should not and what you can edit from your profile:

- Account
  - **Can edit:** *Username, Name* and *Profile Picture*
  - **Do not change your email or enable two factor authentication here** (these settings should only be modified through Keycloak user account management!)
- Profile
  - **Can edit:** *About me, Location, your personal Web Site, Profile Background* and *User Card Background*
- Emails
  - **Can edit:** *Email settings, Activity Summary* and *Mailing list mode*
- Notifications
  - **Can edit:** *Notification settings, Live notifications* and *Messages*

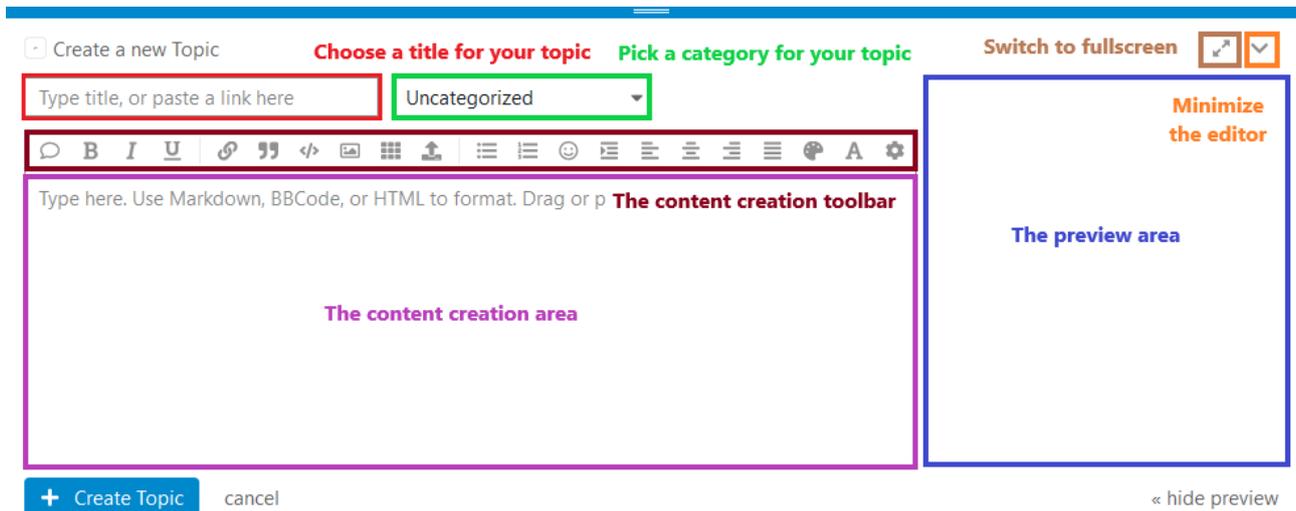
- You can include or exclude new topic and category notifications here under **Categories** selection
- Interface
  - **Can edit:** *Theme, Text Size, Interface language, Default Home Page, Other, Babble* and *Calendar*

In addition to your user profile preferences, you can use the following sections here:

- Summary: Your discussion forum statistics
- Activity: Your activity throughout the forum
- Notifications: Information about all received notification messages
- Messages: You can send and receive messages through this section

## 4. Creating a New Topic

To start a new topic click a **New Topic** button found from the upper right corner of the forum. The content creation tool is presented in Figure 4 with descriptions for different actions. It is recommended to check the preview area content before clicking the **Create topic** button in order to see the final version of your posting.



**Figure 4. Content creation tool**

Content creation toolbar has many useful features to use on your posts. All possible tools included with preview content are presented in Appendix 1.

## 5. Adding a Poll to Your Topic

You can add a new poll to your topic by clicking the cog icon at the end of toolbar row and selecting **Build Poll** from the dropdown menu as illustrated in Figure 5.

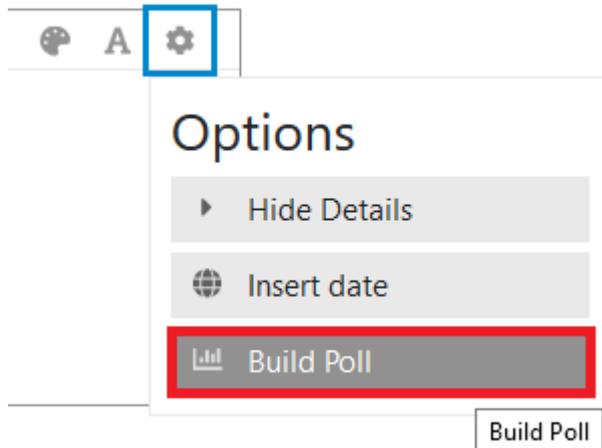


Figure 5. Build Poll option

Poll creation menu like presented in Figure 6 should appear. After setting the preferred options, click **Insert Poll** button. Now you should see the poll structure inserted in the content creation area and at this point you can continue adding more polls or other content. When finished, click **Reply**.

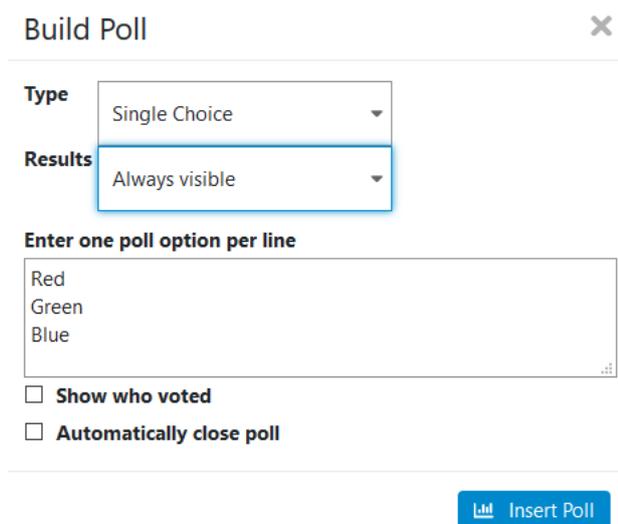
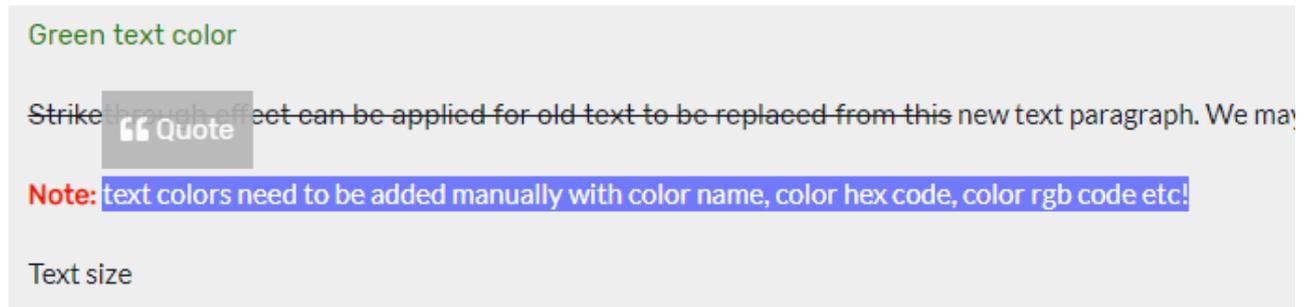
A screenshot of the 'Build Poll' dialog box. The dialog has a title bar 'Build Poll' with a close button 'X'. Below the title bar, there are two dropdown menus: 'Type' with 'Single Choice' selected, and 'Results' with 'Always visible' selected. Below these, there is a text area with the prompt 'Enter one poll option per line' and the text 'Red', 'Green', and 'Blue' entered on separate lines. At the bottom, there are two checkboxes: 'Show who voted' and 'Automatically close poll', both of which are unchecked. At the bottom right, there is a blue button labeled 'Insert Poll'.

Figure 6. Poll creation menu



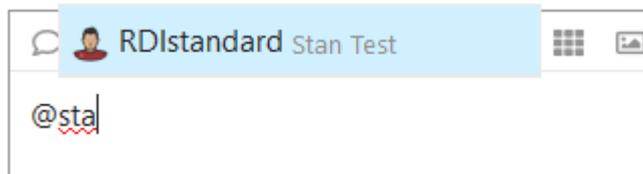
You can also use quotation from other user's post. This is done by selecting a text from another post and Quote-option should appear on top of your selection like shown in Figure 7. After clicking the quotation option, selected quote should be automatically inserted within your content creation area.



**Figure 7. Quotation feature**

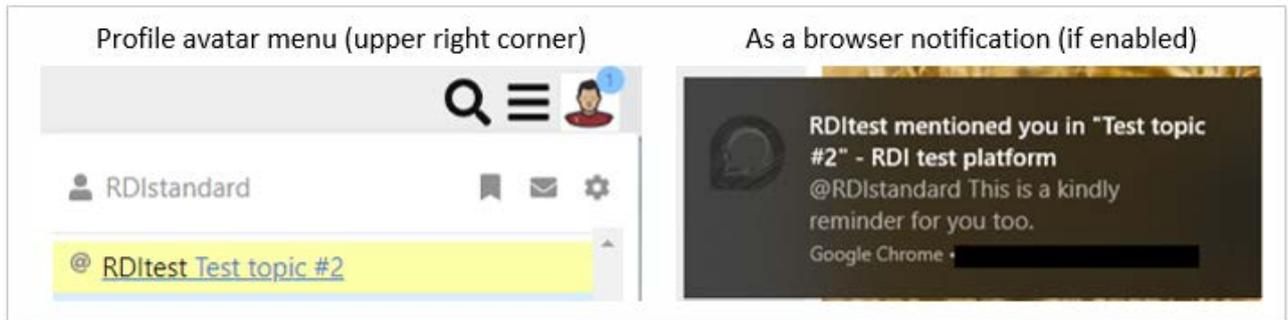
## 7. Tagging and Notifications

You may tag users or user groups when writing a new post or reply for an existing post. By adding the @-character first and then start writing username or group name, the system should give suggestions matching the set of characters written so far. The example of this is illustrated in Figure 8.



**Figure 8. Tagging a user**

Target user should see at least the left most illustration of notification after the message have been sent. In addition, if user has notifications enabled (which is recommended for active users especially), browser will show an indication of a new message as a popup message.



**Figure 9. Notifications indicating a new message received**

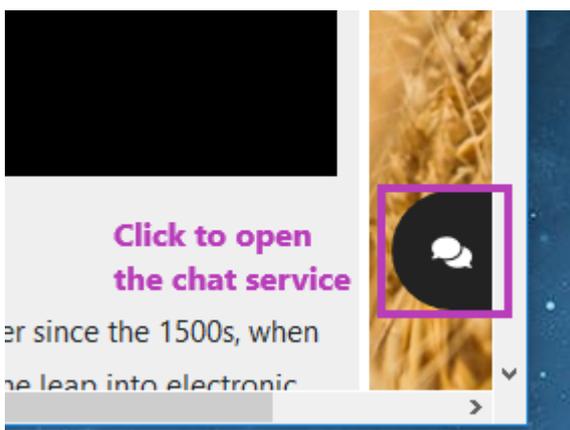
In order to receive notifications from discussion forum through your browser, you can enable notifications by clicking the banner message at the front page of the discussion forum (see Figure 10).



**Figure 10. Banner message for enabling notifications**

## 8. Babble – the Real-time Chat Service

Chat communication option is available to all registered users who are logged in. Chat service icon will appear in the lower right corner of the screen (see Figure 11).



**Figure 11. Chat service icon**

Once you open the chat service, menu similar to the view presented in Figure 12 should appear. You can take a part to category-wide discussion by selecting any of the listed categories or start

a chat with someone in person by clicking the user's name under the **Direct Messages** section. You can also search for a user by clicking the search icon. This is especially useful feature when the user list is long.

## Channels ×

---

### Categories

Uncategorized

Open innovation forum

Project calls

Bioeconomy foresight and forerunners

Biotalouskampus, Tarvaala

### Direct Messages 🔍



Platform Admin



Lisa

**Figure 12. Chat service menu**

Chat communications may have attachments like images or documents and emoji in addition to plain text messages. You can delete any message and they are treated the same way as any individual post in the forum: messages are deleted permanently within 24 hours and cannot be seen by others except administrators.

 <b>quote whole post</b>	<code>[quote="RDltest, post:9, topic:19, full:true"]</code> This is the test reply message <code>[/quote]</code>	 RDltest: This is the test reply message
<b>B</b> <b>strong text</b>	<code>**Strong text**</code>	<b>Strong text</b>
<b>I</b> <b>emphasis</b>	<code>*Italic text*</code>	<i>Italic text</i>
<b>U</b> <b>underline text</b>	<code>[u]Underlined text[/u]</code>	<u>Underlined text</u>
 <b>hyperlink</b>	<code>[https://biobord.eu](https://biobord.eu)</code>	<a href="https://biobord.eu">https://biobord.eu</a>
 <b>blockquote</b>	<code>&gt; This is the blockquote</code>	This is the blockquote
 <b>preformatted text</b>	<code>indent preformatted text by 4 spaces</code>	indent preformatted text by 4 spaces
 <b>bulleted list</b>	<code>* First</code> <code>* Second</code> <code>* Third</code>	<ul style="list-style-type: none"> <li>• First</li> <li>• Second</li> <li>• Third</li> </ul>
 <b>numbered list</b>	<code>1. First</code> <code>2. Second</code> <code>3. Third</code>	<ol style="list-style-type: none"> <li>1. First</li> <li>2. Second</li> <li>3. Third</li> </ol>
 <b>left, center and right alignment</b>	<code>[left]Left aligned text[/left]</code> <code>[center]Center aligned text[/center]</code> <code>[right]Right align text[/right]</code>	<p>Left aligned text</p> <p>Center aligned text</p> <p>Right align text</p>
 <b>justify a text</b>	<code>[justify]Justified text Justified text Justified text .</code> <code>text Justified text Justified text Justified text Jus</code> <code>text Justified text[/justify]</code>	<p>Justified text Justified text Justified text Justified text</p> <p>Justified text Justified text Justified text Justified text</p> <p>Justified text Justified text Justified text Justified text</p> <p>Justified text</p>
 <b>color text</b>	<code>[color=red]Red text[/color]</code> <code>[color=green]Green text[/color]</code> <code>[color=blue]Blue text[/color]</code>	<p>Red text</p> <p>Green text</p> <p>Blue text</p>
<b>A</b> <b>change the size of your text</b>	<code>[size=1]Text size 1[/size]</code> <code>[size=2]Text size 2[/size]</code> <code>[size=3]Text size 3[/size]</code> <code>[size=4]Text size 4[/size]</code> <code>[size=5]Text size 5[/size]</code> <code>[size=6]Text size 6[/size]</code> <code>[size=7]Text size 7[/size]</code>	<p>Text size 1</p> <p>Text size 2</p> <p>Text size 3</p> <p>Text size 4</p> <p>Text size 5</p> <p>Text size 6</p> <p>Text size 7</p>
<b>checkbox</b>	<code>[ ] First phase</code> <code>[ ] Second phase</code> <code>[*] Third phase</code> <code>[ ] Fourth phase</code>	<p><input type="checkbox"/> First phase</p> <p><input type="checkbox"/> Second phase</p> <p><input checked="" type="checkbox"/> Third phase</p> <p><input type="checkbox"/> Fourth phase</p>