



BASMATI

Baltic Sea Maritime Spatial Planning
for Sustainable Ecosystem Services

Guidelines for the establishment of the SDSS platform for MSP

Deliverable 5.4



BONUS BASMATI

Guidelines for the establishment of the SDSS platform for MSP

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BONUS BASMATI in Brief

BONUS call 2015:

Blue Baltic

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Latvian Institute of Aquatic Ecology, Latvia (LIAE)

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University of Turku, Finland (UTU)

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Theme 2.3 Integrated approaches to coastal management and Theme 4.1 Governance structures, policy performance and policy instruments

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Project abstract:

Maritime Spatial Planning (MSP) requires a spatially explicit framework for decision-making, and on that background the overall objective of BONUS BASMATI is to develop integrated and innovative solutions for MSP from the local to the Baltic Sea Region scale. This is to be realised through multi-level governance structures and interactive information technology aiming at developing an ecologically and socio-economically sound network of protected marine areas covering the Baltic Sea. Based on the results of former MSP projects, the BONUS BASMATI project sets out to analyse governance systems and their information needs regarding MSP in the Baltic Sea region in order to develop an operational, transnational model for MSP, while maintaining compliance with existing governance systems. It also develops methods and tools for assessments of different plan-proposals, while including spatially explicit pressures and effects on maritime ecosystem services in order to create the Baltic Explorer, which is a spatial decision support system (SDSS) for the Baltic Sea region to facilitate broad access to information. During the project running until 2020, new data will be produced and tested in assessments corresponding to policy goals. The data will support the combined analysis of the three elements of the concept of ecosystem services: the capacity, flow and benefit of provisioning, regulating and cultural services. A central aim of the project is to facilitate cross-border collaboration, and the project is carried out in close cooperation with relevant stakeholders in the BSR. The impact of the project will be facilitated and assessed in transnational case studies, where integrated solutions are required. The local scale will consist of case study areas in the South-West Baltic, the Latvian territorial and EEZ waters including open part of the Baltic Sea and the Gulf of Riga, and across the region, a pan-Baltic case study will be performed.

Report Summary

This deliverable describes and analyses the development process of the spatial decision support system (SDSS) for the maritime spatial planning (MSP) that has been conducted to create the Baltic Explorer prototype in the BONUS BASMATI Work Package 5. The process is presented in terms of the methodological framework of design science research (DSR) that has been applied by carefully defining the requirements for the system, by evaluating its use in realistic MSP situations including real planners and stakeholders, and by determining an appropriate user access control model.

Central guidelines for the establishment of the SDSS platform for MSP:

- Explicate a real-world problem in a detailed manner.
- Study and understand the application field extensively.
- Run the design process in close cooperation with stakeholders and end users.
- Evaluate the developed artefact both in the laboratory and with real end users.
- Develop in groups using roles like designer, frontend developer, backend developer and group leader.
- Keep up iterative development cycles.

The report has been set confidential due to intent to publish the material to the appropriate extent in journals Ocean & Coastal Management and / or Transactions in GIS.

1 Introduction

The BONUS BASMATI project, Work Package 5 has developed a prototype of multi-channel spatial decision support system (SDSS) that offers an interactive web map and a large display map application in a cloud environment for accessing, displaying and analysing harmonised cross-border data from marine SDIs available in the Baltic Sea region. The developed SDSS platform called Baltic Explorer can facilitate collaboration and negotiations between regional stakeholders through a multi-user and multi-device interface.

The Baltic Explorer has been constructed to an interactive web map based on free and open source software. The development has focused on collaborative aspects of the tool, which let the users browse maritime data layers from different data providers. The users can also conduct negotiation activities, such as drawing and editing spatial features in shared workspaces. Many users can work on the same view with different devices at the same time and look at a view on a common large screen simultaneously, for example, in a meeting room.

The Baltic Explorer has been tested with end users in two tests, “Workshop test” and “Game test”. The “Workshop test” concentrated on studying how the system can support collaboration among maritime spatial planners, fishers, wind farm builders and other stakeholders present in the meeting, who may often have conflicting interest for the use of the Baltic Sea. The “Game test” tried the support of the system for collaboration in a maritime spatial planning (MSP) game situation, in which the participants had to divide the use of a maritime area among their different interests.

This deliverable presents the development process of the Baltic Explorer from the design perspective and provides insight into how such process can proceed and be steered by using the methodological framework of design science research (DSR). DSR is a methodological approach of perceiving a real-world problem, devising a solution for the problem and then studying the solution. The solutions addressing a practical problem are called artefacts in DSR (Dresch et al., 2014). In addition to devising novel artefacts, design science research is a form of scientific knowledge creation. Therefore, DSR makes prescriptive scientific contributions that present knowledge about artefacts (Johannesson et al. 2014, Dresch et al. 2014). To simplify, design science research is about developing and studying artefacts such as Baltic Explorer. The DSR process can be presented as a framework involving the following generalised steps: explicate a problem, define the requirements, design and develop an artefact, demonstrate the artefact and evaluate the artefact.

Section 2 presents key characteristics and requirements for an SDSS in MSP and shortly describes how these are conveyed to the Baltic Explorer. Section 3 provides descriptions of the conducted user tests and their main results. Section 4 presents the solution of the Baltic Explorer for user access that is a key functionality of a collaborative SDSS. Finally, Section 5 concludes the deliverable, lists primary found guidelines for the establishment of the SDSS platform for MSP and visions for the future developments of the Baltic Explorer based on the findings.

2 Requirements for the SDSS for MSP

Requirements for SDSS in MSP in general have been discussed in Deliverable 5.1 (Koski et al., 2017). In this chapter we present key findings from eliciting requirements for collaborative SDSS for MSP from scientific literature. We distinguish between characteristics and functionalities of SDSS. Characteristics describe what the system should be like, while required functionalities describe what the system should be able to do. Requirements are an abstract description of characteristics and functionalities of collaborative SDSS for MSP. The requirements can be used to develop designs of collaborative SDSS for MSP that describe functionalities and software properties on a

concrete level.

2.1 Characterising SDSS for MSP

The existing literature on collaborative SDSS for MSP is limited. However, characteristics of successful collaborative SDSS for MSP can be derived from experiences of using collaborative SDSS for other decision-making processes, collaborative GIS, and other types of SDSS in MSP. From scientific literature, we identified five key characteristics that are required of a successful collaborative SDSS in MSP: multi-user, simple, easy to use, flexible, and easy to access. MSP workshop settings have multiple participants that can provide meaningful input to tasks in workshops. Therefore, collaborative SDSS for MSP need to support such a multi-user environment in a way that enables all users to interact with the system. A particular consideration is the need to support the varying roles that users have in decision making processes (Andrienko et al., 2007). Previous use of collaborative SDSS in MSP processes have shown that the size of the workshop is also to be taken into consideration in the design of the system (see Arciniegas & Janssen, 2012). Workshop participants should also have the means to not only see, but to interact with the system in some manner, as giving the participants control will increase the transparency of the planning process.

Stakeholders have limited technical skills and experiences with GIS software (Merrifield et al., 2013), and systems designed for collaborative MSP should acknowledge this by being simple and easy to use (Pınarbaşı et al., 2017). Users who are unfamiliar with a system can easily be overwhelmed by the complexity of its functionalities, or the overall complexity of the system. Ensuring that the system is also easy to use is crucial in collaborative applications for non-expert users. A system with high level usability can keep participants motivated and allows time to be spent on working on the planning task itself, rather than learning to use the SDSS.

A gap in the knowledge about SDSS for MSP is to understand to what degree analysis functionalities are needed and, due to their complexity, can be used in collaborative MSP settings. Analysis tools are strongly represented in the scientific literature about SDSS for MSP, yet such tools are scarcely used in real MSP processes (Pınarbaşı et al., 2017). Studies on SDSS for other fields have shown that including multi-criteria analysis tools in participatory decision-making tools can be successful (e.g. see Boroushaki & Malczewski, 2010). However, because most stakeholders lack the expertise to properly understand the models used in the tools and are therefore unable to have a meaningful contribution to the results, spatial analysis tools have also been criticised for being too complex for collaborative MSP. Stakeholders may feel reluctant to accept results of a model that they do not completely understand. Ruiz-Frau et al. (2015) propose that the way to connect the scientific models with collaborative MSP is to use the resulting map layers from analyses as a base for discussion in stakeholder workshops.

Spatial decision-making processes are often complex and ill-defined (Andrienko et al., 2007), and there are no two processes that are identical. In MSP this is also partly due to the fact that different sea areas have their own characteristics, and the scale at which planning is conducted varies between countries. MSP is also a multi-phase process, where each step requires different types of collaborative tasks to be performed. To see widespread use, tools need to be flexible and adaptable to different use cases, methods used by planners, and geographical areas (Pınarbaşı et al., 2017). Collaborative GIS can be divided into groups based on the time and location of collaboration: same time / same location, same time / different location, different time / same location, and different time / different location (Sun & Li, 2016). Different scenarios may affect which type of system should be used, and at least three of the four collaboration methods have been found to be useful for MSP. According to Merrifield et al. (2013), online data exploration tools are a critical first step in MSP, enabling visualisation of data to non-experts and cross-border communication of spatial information. Pınarbaşı et al. (2017) argue that real-time online participation systems are needed for MSP in the future. An example of different time / different

location in MSP context was the use of online visualisation of data through the use of Google Earth, to consult the public about the completeness and accuracy of the data, which ultimately helped to fill some important data gaps (Shucksmith et al., 2014a). According to Collie et al. (2013), non-interactive online participation, for example allowing stakeholders to submit their own plans for consideration, has been conducted with positive results. However, Alexander et al. (2012) argue that interaction between stakeholders is important for participatory planning and cannot be solely achieved through online participation. Workshops in MSP might also not solely be focused on work with an SDSS and might include other types of activities that cannot be done online. It can thus be concluded that there is a need for different location / same time support, as well as support for same time / same location. Same location / different time can also be used in collaboration (e.g. in rotating smaller groups between multiple tasks) and cannot be ruled out.

To see widespread use, tools in MSP also need to be easy to access. Aspects to consider in terms of access to the system include costs, licenses, availability, and language. Cost has been found to be a key issue in taking decision support tools into use in real MSP settings (Pınarbaşı et al., 2017).

Summary of key characteristics:

- Multi-user system
- Simple
- Easy to use
- Flexible
- Easy to access

2.2 Required functionalities

Based on the scientific literature and the characteristics of collaborative SDSS for MSP, we identified four required functionalities for collaborative SDSS in MSP: tools to support map-navigation, tools to enable data access and management, tools to support collaboration, and tools that enable configuring the system for different use cases.

Rose et al. (2016) argued that visual representation is the best way to increase the user-friendliness of a decision support tool. Since spatial data is a central element of SDSS, a map interface with appropriate navigation tools is required. Map navigation tools in map applications tends to be homogenous, typically featuring panning and zooming, supported by other elements that helps the user to orientate themselves e.g. scale bar or a mini-map.

Collaborative SDSS should also have efficient data access (Sun & Li, 2016), including access to existing spatial data infrastructures (SDIs) of MSP. Access to MSP SDIs gives users a wide range of data to use without the need to separately download and import the data into the system, which saves time, and it also ensures that the data is up to date (Shucksmith et al., 2014b). Participants in collaborative workshops need to be able to add their own data to the system as well as edit and modify data.

Collaborative SDSS needs tools that can support collaboration, for example to facilitate discussion. Yet, based on the existing literature about SDSS in MSP, it remains unclear what type of tools effectively facilitate discussion between workshop participants. Different tools that have been proposed for decision making processes include, tools that can be used to comment features, voting tools and chat boxes.

Finally, there needs to be some system configuration tools to support the user in adapting the system for different use cases. For making the system useful, flexible configuring is needed to help planners in preparing use cases in advance and in having results easily manageable after a workshop.

Summary of key functionalities:

- Tools for map navigation
- Tools for data access and management
- Tools to support collaboration
- Tools to support configuration of the system for different tasks

2.3 The Baltic Explorer Prototype

The Baltic Explorer prototype¹ (Figure 1; Deliverable 5.3: Koski et al., 2019) was built based on the characteristics and required functionalities for collaborative SDSS that were identified from the scientific literature. The Baltic Explorer prototype features wide access to MSP data, including access to MSP SDIs, and it enables importing, drawing, managing and editing of users own data. Its functionalities help to manage and visualise as well as facilitate discussion about spatial data in collaborative MSP workshops. It features a home page from where users access workspaces that are stored in the system. Workspaces are where users collaborate on map interfaces. In addition, the Baltic Explorer features an admin page where administrative users have control over the users and data in the system as well as workspaces. The Baltic Explorer is built on open source code (heavily utilising the code of the open source application uMap²). As a web application, it easily supports multiple simultaneous users and is easy to access. Because stakeholders in MSP have limited technical skill and experience with GIS software (Merrifield et al. 2013), the design of the system stresses simplicity and ease-of-use. In addition, to support planners in using the system for multiple types of tasks in collaborating with stakeholders, the Baltic Explorer is designed to be flexible, e.g. it adapts to different devices. In future iterations we will use the system to study how analyses used in MSP, often proving to be too complex for collaboration with stakeholders, could be integrated into the system effectively.

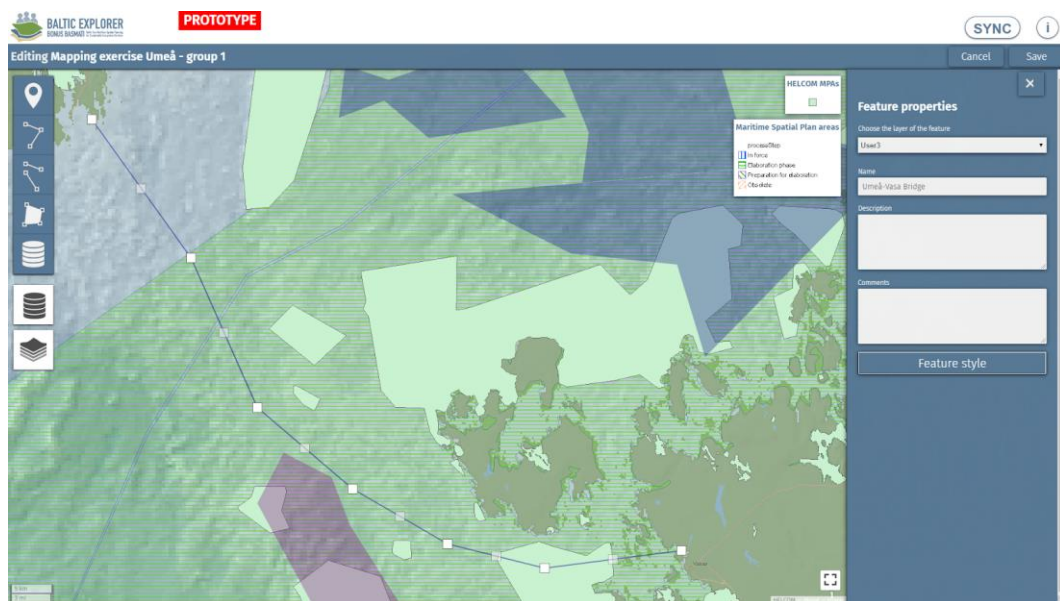


Figure 1

A workspace in Baltic explorer being used in a real-world MSP workshop session.

¹ <http://balticexplorer.eu>

² <http://umap.openstreetmap.fr/fi/>

3 Baltic Explorer tests

To gain insight into how groups collaborate using spatial decision support systems for collaborative maritime spatial planning, Baltic Explorer was used in two different user tests. In both tests the main methods of data collection were observing the use of Baltic Explorer and questionnaires.

3.1 Workshop test

In the first “Workshop test”, Baltic Explorer was tested with users in the Pan Baltic Scope cross-border meeting: “Better maritime planning – towards a shared future, together” organised by FIAXSE 26-27 March in Umeå, Sweden. The workshop presented a chance to test Baltic Explorer with real users and the participants were mainly MSP planners and stakeholders. The test focused on examining which functionality of a collaborative SDSS helps in common MSP tasks. The participants were given a short introductory presentation and then divided into two groups of around 15 to perform a task that took about an hour (Figure 2). Of the groups 19 participants responded to the questionnaire (Annex A). Both groups were assigned by FIAXSE with the same task of increasing awareness and knowledge of cross-border blue growth issues and needs while increasing international collaboration between the maritime spatial planners. Baltic Explorer was used to support the task. Both groups had a facilitator who led the conversation and a moderator who managed the shared Baltic Explorer view on a large screen. The facilitator and the rest of the participants used their personal devices to run Baltic Explorer. Most of the participants utilised laptops but some also utilised tablets and mobile devices. The use of Baltic Explorer was observed in both groups by researchers.



Figure 2

The “Workshop test” participants were divided into two groups and used Baltic Explorer to complete their task.

Participants in the workshop were asked in what tasks five different functionalities help them in six

different tasks. The question included two functionalities that have been implemented in Baltic Explorer (“Overlay data on map”, “Draw and edit features”), and three functionalities that are not implemented in Baltic Explorer, but have been revealed through scientific literature to have been used in other SDSS (“Feature commenting tool”, “Voting tool”, “Chat box”). The replies revealed that out of all the five tools that were asked about, “overlay data on the map” was regarded as the most important tool in four out of six tasks: “helps to understand the collaborative planning task”, “helps in expressing interests of your sector”, “helps in gaining insight into interests of other sectors” and “helps in building trust amongst collaborators” (Figure 3). It was also tied with the draw tools on “helps in reaching decisions among collaborators”. The “feature commenting tool” got most yes answers on “helps in promoting constructive decisions among collaborators”. The “voting tool”, was not considered helpful by more than a quarter of repliers for any of the tasks. In contrast, the “feature commenting tool” was considered helpful by more than half of the repliers for all tasks except lower for “helps in reaching decisions among collaborators”. The “chat box” was considered to be helpful by more than half of the repliers for “helping to promote constructive discussion across sectors” and “helps in understanding the collaborative planning task”.

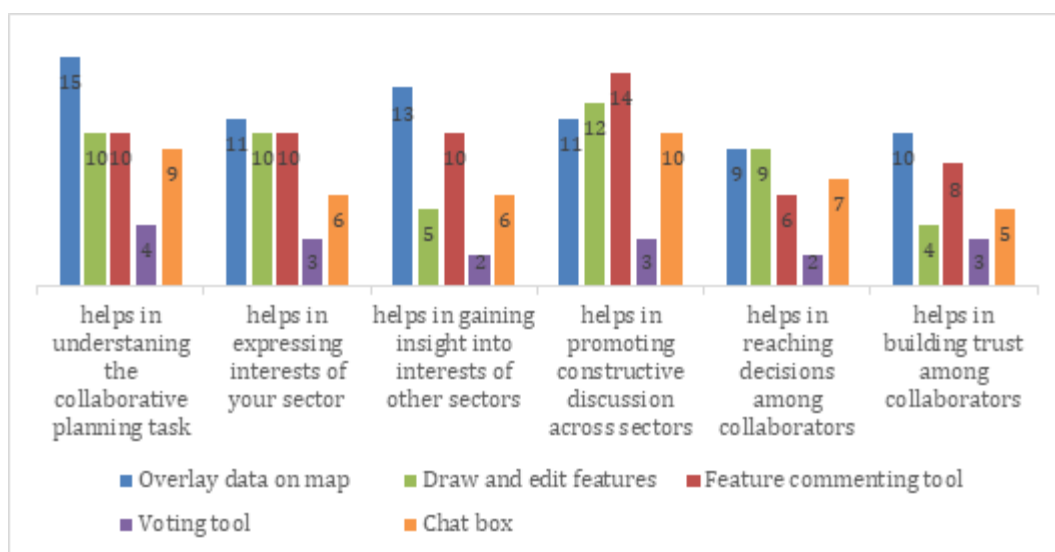


Figure 3
What tasks the workshop test participants felt that different tools helps them in.

3.2 Game test

In the second “Game test”, Baltic Explorer was user tested six times with varying groups of users, such as, MSP students, GIS experts and non-experts. Each group had three participants. The MSP students were tested in a BONUS BASMATI “Maritime Spatial Planning processes in Baltic Sea countries” PhD course organised by University of Turku 6.-8.5.2019 in Turku, Finland. The test focused on examining how well each device combination used by participants (personal, shared and both devices) supported common MSP tasks. The goal of the game was to collaborate in preparing a plan that takes into account the interests of each participant and the overall interests of all the participants. The participants were given a short introduction and then divided into groups of three. All groups were assigned the same task of playing an MSP game. Each participant acted as a sector representative (energy, tourism and environmental). Each participant had a map divided into 17 areas and a score sheet where each area had a score from 1 to 5 (Figure 4). For example, Area 1 had a score of 4 for the participant who represented Environment sector and 5 for the Energy and Tourism, making it a conflict area as all sectors are highly interested about the area. The rules of the game dictated that only one participant can claim each area and every participant must have a minimum of five areas claimed. To claim areas the participants added map markers matching their sector colour on the area. The first group had only a shared view to work with and the second group had only personal view. The third group had both personal devices and a shared

device. All the personal devices were laptops and the shared devices were large screens (either TV or projector). All devices were running modified instances of Baltic Explorer where the 17 areas were visible. The use of Baltic Explorer was observed for all groups by the researchers.

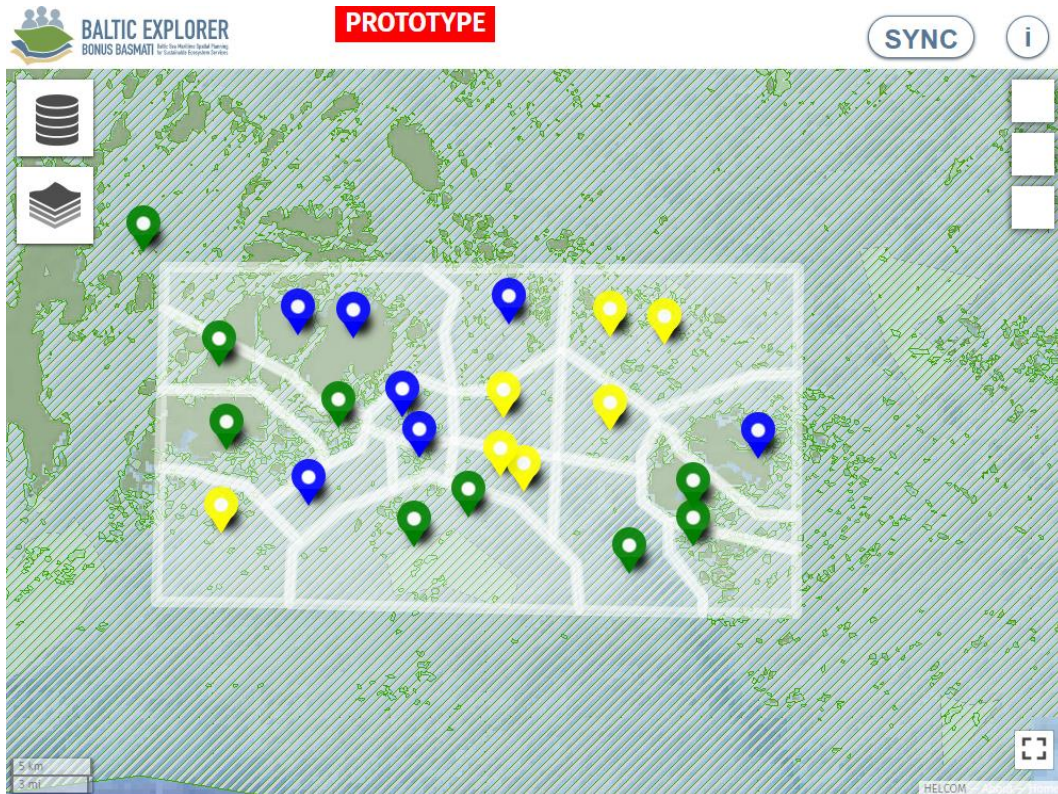


Figure 4

End result of one of the “Game test” groups where the goal of the game was to collaborate in preparing a plan that takes into account the interests of each participant and the overall interests of all the participants.

The questionnaire revealed that users regarded the personal screen to be more suitable for preparing to present their interest, while the shared device was perceived as being more suitable to present their interests. Both the personal and shared devices were regarded as having nearly the same importance for gaining insight of other’s interests and collaborating to find compromises. On the other hand, when comparing results between the groups with only a single type of device, the group with only personal devices thought the device to be more suitable to present their results to others than participants in groups with only a single large screen. In preparing to present interests, the group with only a large device regarded the device to be more suitable than the group with the personal devices. The group with personal devices were also slightly more satisfied with the suitability of their devices for gaining insight about the planning task and collaborating.

4 Access control in Baltic Explorer

Baltic Explorer is a communication-driven SDSS for collaborative MSP. Communication-driven SDSS facilitates the communication between different stakeholders to generate some form of results (Stelzenmüller et al., 2013). To determine how this collaboration works in Baltic Explorer, it is important to know what functionality users have access to in the system. This is determined by the concept of access control or control of user access. It was decided that role-based access control (RBAC) will be used in Baltic Explorer. In RBAC, permissions assigned to user roles are defined beforehand and users are then assigned to roles based on their responsibilities. The key questions regarding the RBAC are: which user roles are required and what functionality do the user

roles have access to?

Access control for Baltic Explorer, including user roles and access to functionality, have been designed based on the observations and feedback from the carried-out tests while taking into account the context of maritime spatial planning and spatial decision support systems. Therefore, role-based access control was chosen over a user-based access for Baltic Explorer since only a few user groups with special access to collaborative functionality were identified.

Thus, Baltic Explorer has three user roles: participant, contributor and moderator. Each user can use their own device to access the workspace and manage their personal view. Any local user can use their personal device to present their personal view of the workspace as the shared view visible for all. However, it is intended that the 'moderator', who has access to all the workspace functionality and is generally responsible for the workspace, should be the one presenting the shared view.

The access rights to functionality are divided into three categories: access, share and manage, (Figure 5). With 'access' the user can use the workspace but can't for example share features. The 'share' allows the user adding contents on the workspace. With 'manage' the user can fully control the workspace. All but the remote users can also see the shared view managed by the moderator as they are physically present at the event.

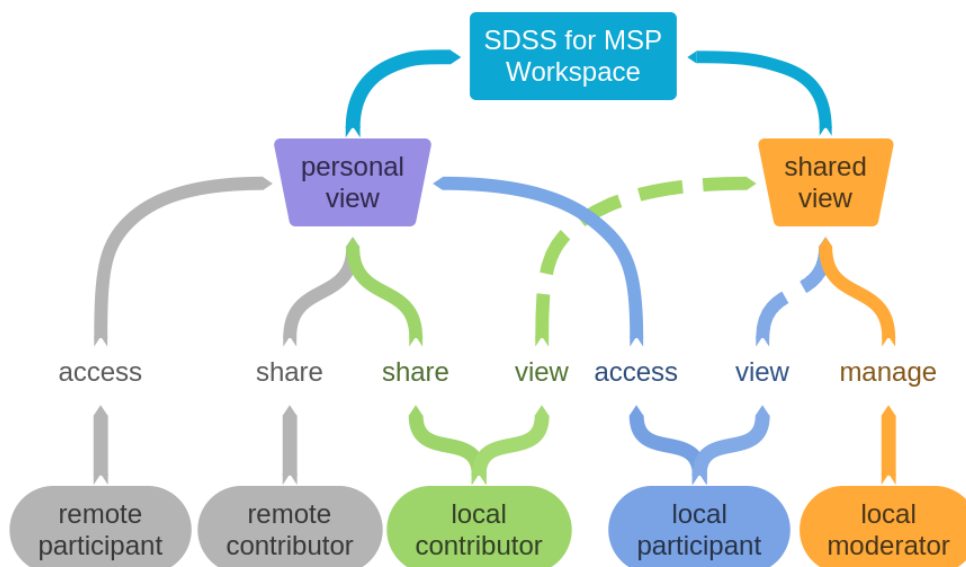


Figure 5

The functionality each local and remote user role has access to on personal and shared views of a Baltic Explorer workspace.

The participant group only has access to basic functionality, such as, viewing features and overlaying data. The main functionality participants use is synchronising the workspace to stay updated on the task, either using their own personal view or by paying attention to the shared view. Participants can change the overlaid data of their personal view, but if they synchronise their workspace, the overlaid data of the shared view is shown in their workspace, giving the moderator more control over the overlaid data. In an MSP setting, persons who don't actively want to contribute to the task but rather are interested in the process phases and the result of the task, can be assigned as participants. The contributors group have access to sharing functionality, such as, adding features to the workspace for all to see (Figure 6). Contributors can save the overlaid data of their personal view, share and edit features on the workspace and synchronise the workspace using their personal device. Contributors can for example be planners or stakeholders who actively want to contribute to the task phases and take part in the decision making. The moderator has

access to all functionality regarding the workspace (Figure 6). The moderator chooses the overlay data visible to the personal views of participants and the shared view. The moderator controls the workspace and keeps the shared view synchronised for all viewers. The moderator can edit all layers and features created by the contributors. The moderator can, for example, be the meeting chair or one of the meeting organisers in an MSP setting. The functionality user roles have access to in a Baltic Explorer workspace is presented in more detail in Figure 6. The moderator for example has access to all layer functionality whereas the contributor can only create layers.

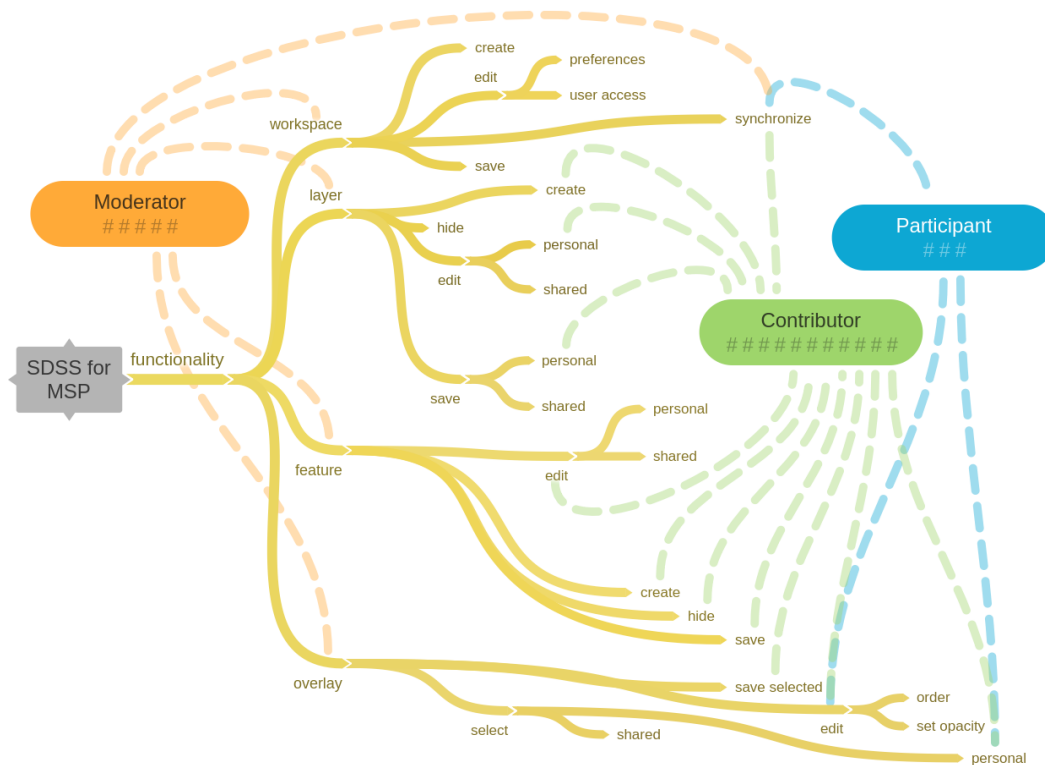


Figure 6
The functionality user roles have access to in a Baltic Explorer workspace.

The Baltic Explorer workspaces have a certain natural workflow of where the use of synchronizing determines what is seen on the personal views and the shared view. An example workflow of a Baltic Explorer workspace where a moderator and contributors collaborate in adding and editing features is presented in Figure 7.

During the “Workshop experiment” the participants and contributors were observed to pay close attention to the shared view. This was likely due to their personal view being in a different state than the shared view. For example, the user may have been focusing on a smaller area of the map and instead of adjusting their view they would simply look up to the shared view to get an overall view of the task. Another example of this situation was when a contributor was editing a feature not yet ready to be shared on the workspace, the contributor would from time to time have a look at the shared view to stay updated on the task. It was also observed that the moderator duties might be better to be performed by someone else than the meeting chair and contributors. The meeting chair usually has to focus on the more administrative parts of the tasks and contributors usually focus on getting their message across, therefore one of the organisers is a logical choice to act as the moderator. Contributors were observed to physically move to the shared view (projector, television) to point something out or to make their point come across better even though they had their personal view. During the “Game experiment” the users were often taking the role of the moderator to synchronise the shared view, even though they had their own personal views.

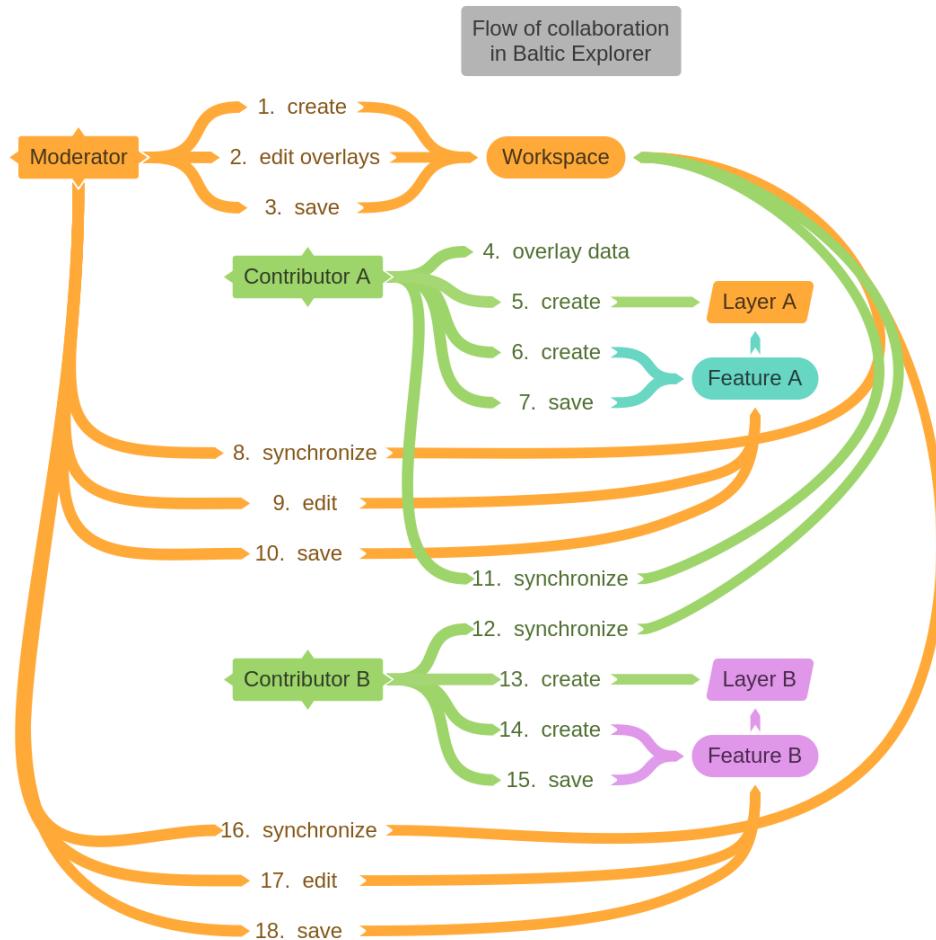


Figure 7

An example workflow of a Baltic Explorer workspace where a moderator and contributors collaborate in adding and editing features.

5 Conclusions, guidelines and remaining research

The development of the Baltic Explorer in the BONUS BASMATI Work Package 5 into a collaborative spatial decision support system for maritime spatial planning has proceeded to a usable prototype using the methodological framework of design science research. The key characteristics as well as functional and non-functional requirements and user access model have been defined, the web application implemented accordingly, and the application evaluated in two user tests including real maritime planning interaction among planners, stakeholders and other parties. This deliverable has described the development process and understanding that has been gathered for designing SDSS for MSP.

During the application of the DSR methodological framework for the Baltic Explorer, we learned following general design lessons:

- Explicate a real-world problem, present in the field you are developing the artefact for, in as much detail as possible to allow for a better understanding of what is actually needed.
- Study the field extensively in order to define requirements for the artefact in order to solve the problems found.

- Define the requirements in a way that also the stakeholders understand them.
- Design and develop the artefact iteratively in close relations to the end users.
- No point in reinventing the wheel when developing: use as much of previous technology and software as possible.
- Carefully select the base software on which the demonstrator will be built and prefer as modifiable software as possible – typically free and open source software.
- Demonstrate the artefact to the end users and stakeholders to gain valuable feedback between development cycles.
- Evaluate the artefact both in the laboratory environment, to gain specific feedback on issues, and in real world situations with real end users, to gain feedback on general issues and potential caveats in the development team's knowledge of the field.

As for improving on the design and development of SDSS for MSP:

- Complex systems benefit from development in groups with clearly defined roles such as designer, frontend developer, backend developer and group leader.
- Designing benefits from use of methods such as creating mockups in early phases of new functionality and presenting them to the stakeholders.
- Iterative development, where in between development cycles stakeholders are involved to give feedback, enables a more agile way of making changes.

The remaining research in the project is going to be focused at least on refinement of Baltic Explorer and the integration of the Latvian case study. We will refine Baltic Explorer in a number of ways in order to reach our goal of a useful SDSS tool for MSP. First, the access control as a whole still needs design and development as the system needs to respond to the needs of the end users. Second, the current utility requires refinement and there might be need for more functionality by the end users. Last, the usability of the utility is also an important aspect needing further refinement. The integration of the Latvian case study will continue by integrating analysis utility to Baltic Explorer that can be used in the case study. The goal is to evaluate the utility developed in a real-world situation in Latvia. In the later phases of the project, the exact balance of evaluation and refinement is to be decided but both will be done to further extent.

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Annex A

Baltic Explorer questionnaire



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Baltic Sea Maritime Spatial Planning
for Sustainable Ecosystem Services

MSP = Maritime Spatial Planning
SDSS = Spatial Decision Support System

1. Your role in MSP?

- Sector representative
- Planner
- Scientist
- Decision maker
- Other, _____

You can pick more than one option

2. Your experience with:

	No experience					Expert
MSP?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SDSS?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. The following functionality in collaborative SDSS

	Overlay data on map	Draw & edit features	*Feature commenting tool	*Voting tool	*Chat box
helps in understanding the collaborative planning task	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
helps in expressing interests of your sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
helps in gaining insight into interests of other sectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
helps in promoting constructive discussion across sectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
helps in reaching decisions among collaborators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
helps in building trust among collaborators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Not yet implemented in Baltic Explorer

You can pick more than one option

Please turn the page!

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Baltic Explorer questionnaire



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4. The effect of using Baltic Explorer in the group work:

1: not agree at all, 5: strongly agree

Use of Baltic Explorer:	1	2	3	4	5	Don't know
helped me to better understand the preconditions and interests of other sectors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
helped me to better understand the tasks and interests of authorities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enabled identifying and discussing competing interests in sea areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enabled identifying and discussing possible synergies/ co-existence in sea areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enabled a discussion across sectors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enabled a discussion across geographical and administrative scales	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Feedback, questions, ideas about Baltic Explorer:

Thank you!

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