



Implementation of the database architecture of the EU-wide bee health data web portal.

Deliverable D6.1:

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B-GOOD

**Giving Beekeeping Guidance by cOmputatiOnal-assisted Decision
making**



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Preface

This deliverable describes the foundation of the EU-wide bee health data web portal, called 'data portal' in this document. The data portal is a collection of bee health data collected in the B-GOOD project as well as external data.

This deliverable covers the work done in the second step of the development of the data portal. The first step was described in the milestone 35 (MS35): Van Vliet, G., Van Gennip, P., Van Delden, A., Schoonman, M. (2020). *Data portal architecture*.

Summary

Deliverable 6.1 is the database architecture for the EU-wide bee health data web portal, called 'data portal' in this document. After finalization of milestone 35 'Data portal architecture', a detailed user interface design was created which formed the basis for the final version of the data portal database design. A diagram of the implemented database is shown in chapter 4.

1. Final data portal design

Based on the work described in milestone 35 as well the B-GOOD document 'Publication and data sharing policy', a user interface design has been created to further detail the requirements of the underlying database. See below several screenshots of the design. The design is interactive, which means that a click on selected buttons navigates the user to a new screen. The design has been reviewed by the developers and future users among B-GOOD partners. The design includes comments in red for the technical development team.

Several examples of the design:

Login screen

The image shows a login screen design for the B-GOOD Bee Health Data portal. The design is centered on a white background. At the top, the B-GOOD logo (a stylized bee) is followed by the text 'B-GOOD Bee Health Data'. Below this, the word 'Login' is centered. There are two input fields: 'Email' and 'Password'. The 'Password' field has a small link 'forgot password' below it. A blue 'Submit' button is centered below the input fields. At the bottom, there is a footer with links: 'About | Contact | Terms and conditions | Github'. There are two red annotations: one at the top right saying 'Notes in red are for develop purposes and are not part of the final GUI' and one at the bottom right saying 'Link colour same as wikipedia default link colour: #0645AD'.

Notes in red are for develop purposes and are not part of the final GUI

B-GOOD Bee Health Data

Login

Email

Password

[forgot password](#)

[Submit](#)

[About](#) | [Contact](#) | [Terms and conditions](#) | [Github](#)

Link colour same as wikipedia default link colour: #0645AD

Home / Search screen

B-GOOD Bee Health Data

My account | Logout

Search

example

56 datasets available

Upload | Manage

About | Contact | Terms and conditions | Github

Search result

B-GOOD Bee Health Data

My account | Logout

Search

example

2 results

Dataset: Example1

Files: 2 (pdf, xlsx)
Last modified: 1-jan-2020
Keywords: abc def, def2
Owning organisation (authors): UGent (Name, A.B., Name, C.D.)
Description: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus sociis natoque penatibus et magnis dis parturient montes....

Dataset: Example1

Files: 2 (pdf, xlsx)
Last modified: 1-jan-2020
Keywords: abc def, def2
Owning organisation (authors): UGent (Name, A.B., Name, C.D.)
Description: Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus sociis natoque penatibus et magnis dis parturient montes....

By: date ascending, date descending (default)

Upload dataset

B-GOOD Bee Health Data

My account | Logout

New dataset

File(s)*	Name	Description	Type	Size	Last modified	Version	Actions
Example_file1	Abc dsafd ...	pdf	1.5Mb	09-feb-2019	1	Edit Remove New version	
Example_file2	def dash	xlsx	30.5Mb	17-dec-2019	1	uploading: 75%	

+ add file

Dataset name* Example1 8 / 140

Keywords* Example text x

Owning organisation Example organisation

Author(s) Example A.B. Example Actions Edit | Remove

+ add author

Description* 0 / 500

Permission to access

☐ Specific organizations
Users for the organizations you select are able to download this dataset.
Click here to add all B-GOOD partners

☐ All portal users

The design document consists of 36 screens, including the layout and content of notification emails. It leads to the final database model. The design document can be opened via this link: <https://xd.adobe.com/view/1bf60d4b-3beb-4518-816d-9fa29c5598a9-4ea5/>

2. Development

approach

Integrated, open, cost-effective approach

Both the data portal survey (see milestone 35) and the B-GOOD document 'Publication and data sharing policy' clearly state that partners want to be able to use fine-grained access levels to either only their own organisation, one or more partner organisations, all B-GOOD partners or all users with access to the data portal.

In the B-GOOD Description of Action (DoA) it is described that BEEP planned to use a portal system, owned by third party Akvo. And that after initial set-up (involving a fee), annual cost would be paid for the duration of the B-GOOD project. This portal system is however not fit for fine-grained access to datasets. Furthermore, Akvo does not have experience in managing fine-grained data access, and no longer supports the portal system. Now, they offer custom built portals, for which the required functionality and planned budget in WP6 does suffice.

Taking the above into consideration, our current approach is to carry out the open source development of the B-GOOD data portal in a team formed by BEEP and Pensoft. Pensoft has an experienced software development team and enough budget in WP6 to create and maintain the data portal. Furthermore, advantages over the initial approach are:

- relatively low annual maintenance cost;
- database (the back-end) and the user interface (front-end) can be developed at once;
- the data portal can have the exact required features required.

Development team

BEEP and Pensoft agreed to form the development team of the data portal. The following team members are involved in the creation of the abovementioned design, the creation of the database architecture of the data portal and in the development of the user interface:

- Marten Schoonman (BEEP)
- Pim van Gennip (BEEP)
- George van Vliet (BEEP)
- Teodor Georgiev (Pensoft)
- Georgi Zhelezov (Pensoft)

3. Development environment

BEEP makes use of the online, collaborative version management repository, known as Github (<https://github.com/>) for software development. See screenshots below. During the development, the repository will be closed, when the development is completed it will be opened to the public (open source).

The screenshot displays the GitHub repository page for `beepnl/bee-health-data-portal`. The repository is private and has 4 watches, 0 stars, and 0 forks. The main branch is `development` with 4 branches and 0 tags. The repository contains 55 commits and 63444af commit hash.

The file list shows the following files and their commit history:

File	Commit Message	Time
bee-health-data-portal	Merge branch 'development' of github.com:beepnl/bee-health-dat...	4 days ago
docs	Merge pull request #20 from beepnl/feature/data-model-review	28 days ago
.DS_Store	Add remarks on database model	28 days ago
.gitignore	Initial commit	2 months ago
README.md	Update README.md	last month

The README.md file content is as follows:

Bee Health Data Portal

EU-wide bee health data portal. This portal is used to share data between the different parties within the B-Good consortium.

UX

A UX design is available. The design has been made in Adobe XD which you can [download here](#). For access to the ux design please request access to Marten.

Class diagram

A class diagram has been distilled from the requirements and UX design. This class diagram is a tool for discussion and should not be seen as an authoritative document. It is important that the document is updated as our understanding of the domain evolves.

The class diagram has been made with [Star UML](#). You can find the class diagram [here](#)

Development flow

Please use git flow as a branching model. Create feature branches and name them in the following format: `feature/<github_issue_number>-<some_descriptive_keywords>`.

Once a feature is completed, please open a pull request that merges your feature branch into the `development` branch and flag `@georgevanvliet` for a code review.

After each sprint we can make a release branch, test it, and then merge into master. Master will then be backmerged into development.

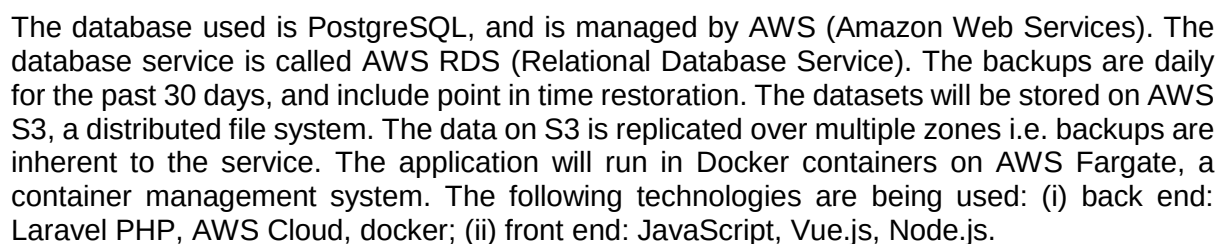
The right sidebar shows the repository's metadata:

- About:** EU-wide bee health data web portal
- Readme:** (link to README)
- Releases:** No releases published. [Create a new release](#)
- Contributors:** 3 contributors: [georgevanvliet](#) (George van Vliet), [howkins](#) (Georgi Zhelezov), and [pvgennip](#) (Pim van Gennip)
- Languages:** PHP 78.7%, Blade 18.9%, Shell 1.9%, Other 0.5%

Above: Main page of the Bee Health Data Portal on github.com

4. Implemented database architecture

The final data portal database as it is created is depicted below. It is an EER (Enhanced Entity Relationship) diagram that shows the structure of the different tables and the relationships between these tables.



The data portal user interface will be developed in the coming months. Version 1 will contain the most essential product features covered in the user interface design above. It will be tested by at least the WP6 partners and be ready for use at the latest in month 23 (milestone MS36). Up to that time, the database will only contain test data. After the finalisation and launch of MS36, datasets and other data will be entered in the database.

We would like to thank Pensoft for the creation of the data portal database and the other WP6 partners, AU, UGENT, WR and INRA, for their input and support.

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7. References

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