



# **Establishment of a professional helpdesk to assist beekeepers and researchers that experiencing difficulties during the execution of the field studies.**

## **Deliverable D1.2**

16 December 2019

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### **B-GOOD**

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



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## Table of contents

Preface.....	5
Summary .....	5
1. BEEP helpdesk.....	5
1.1. BEEP knowledge base.....	5
1.2. BEEP support system.....	8
2. Software.....	9
2.1. Multilingual.....	9
2.2. Ticket categories .....	9
3. Implementation .....	10
4. Acknowledgements.....	11
5. References.....	11

## Preface

This deliverable is one out of nine within WP1. The BEEP app and base (measurement system) is used in all three tiers in work package 1. The users of the BEEP platform, and later also the EU-wide bee health and management data platform, will be supported via the helpdesk.

## Summary

Deliverable 1.2 consists of the development of a professional helpdesk to assist researchers and beekeepers who experience difficulties during the execution of the field studies required in B-GOOD.

### 1. BEEP helpdesk

B-GOOD's key focus is promoting healthy and sustainable beekeeping in the European Union. Within the project, the researchers will use the BEEP base (measurement system), and the BEEP app (web application) to monitor bees, collect data and share information.

The helpdesk consists of two parts. The first part is the *knowledge base*. It consists of manuals, protocols and other sources of information for BEEP users. The knowledge base aims to answer all relevant questions and is therefore the first stop. The second is *support*. Through the support section, users can ask questions for issues which cannot (yet) be found in the knowledge base.

In the design of the support system of the helpdesk we defined the following steps:

1. Search knowledge base
2. Suggest one or multiple knowledge articles to user.

If these do not provide a satisfying answer:

3. User fills contact form
4. A ticket is automatically created in the ticketing system
5. The ticket is attended to, and the user receives feedback
6. Where needed, the knowledge base is complemented with new information

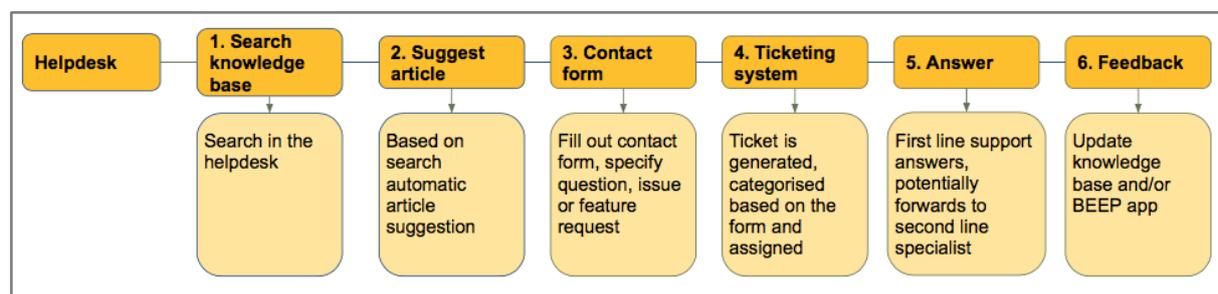


Figure 1: Flow of helpdesk structure

#### 1.1. BEEP knowledge base

In the knowledge base users can find information about the usage of the BEEP base, the BEEP app, other manuals and protocols. This is the first place that people can go to find an answer to their question. Step 1 and 2 of the support system are included here. The page includes the following:

- € *Search bar:* in the middle of the page will be a search bar. People can type their question and the software suggests articles that answers their question. The users do not have to search through the whole menu to find the section that contains the information they need.
- € *User manual:* the menu is a complete guide for the usage of BEEP, divided into separate articles. Users can click on the article of their interest and find their answers. Also, it is an easy overview of all the information for people that would like to see what information is available.

## Screenshots

The figures below show screenshots of the helpdesk on desktop and mobile phone.

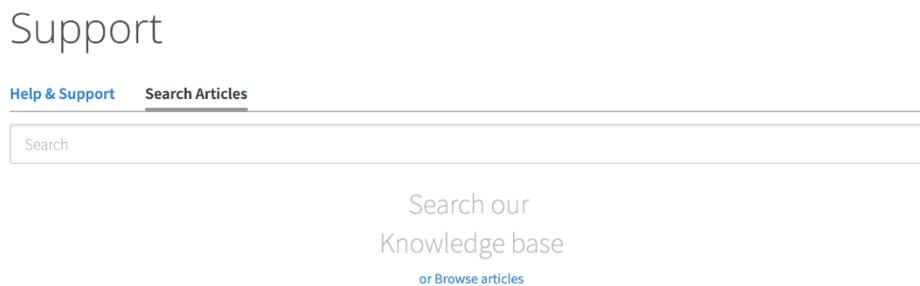


Figure 2: Screenshot of the search screen of the knowledge base.

## Knowledge base

### BEEP app

#### User manual (20)

- ☐ Login
- ☐ Create a new apiary
- ☐ Install your BEEP base
- ☐ Set language
- ☐ Overview of apiaries and hives
- [See all 20 articles](#)

### BEEP base

#### User manual (1)

- ☐ Connect your hives to the BEEP app

#### Technical specifications (1)

- ☐ BEEP base dimensions

Figure 3: Screenshot of the knowledge base when clicking 'Browse articles'.

The screenshot shows a knowledge base article titled "Create a new apiary". The breadcrumb trail is "Solution home / BEEP app / User manual". The article is created by Marten Schoonman and was last modified on Wednesday, 11 Dec, 2019 at 1:47 PM. A "Print" button is visible in the top right corner.

The main content of the article explains that the main menu can be opened by clicking on the hamburger menu icon. It lists the following elements in the main menu:

- Apiaries
- Hives
- Sensors
- Data export

The article then provides instructions for creating a new apiary, stating that the user should click on "Apiaries" and enter basic data such as name, location, and number of beehives. It notes that if a full address is provided, the system will automatically fill in the GPS coordinates and street name. The field for the apiary name is marked as a required field with an asterisk.

On the right side of the article, there is a "Related Articles" section with the following links:

- Move or archive beehives
- Creating or modifying a beehive
- Overview of apiaries and hives
- Collaborate
- Login
- Inspection overview
- Place BEEP app on your phone
- Using reminders
- Add an inspection
- Customise your inspection list

Figure 4: Screenshot of an example of a knowledge base article. Suggested related articles are shown automatically to help the user to navigate the knowledge base

## Support

The screenshot shows the "Support" page with a search bar and a "Search Articles" button. The search bar contains the text "apiary" and shows "4 matching articles". Below the search bar is a rich text editor with a toolbar containing icons for bold, italic, underline, list, link, unlink, and undo. Below the editor is a "Topic" dropdown menu. At the bottom of the page, there is a reCAPTCHA widget with the text "I'm not a robot" and a "reCAPTCHA Privacy - Terms" link.

Figure 5: Screenshot of the support desk. When one wants to enter a subject ('apiary' in this example), relevant knowledge base articles are shown. If these do not fit the need of the user, one can fill the support form and a ticket will be generated.

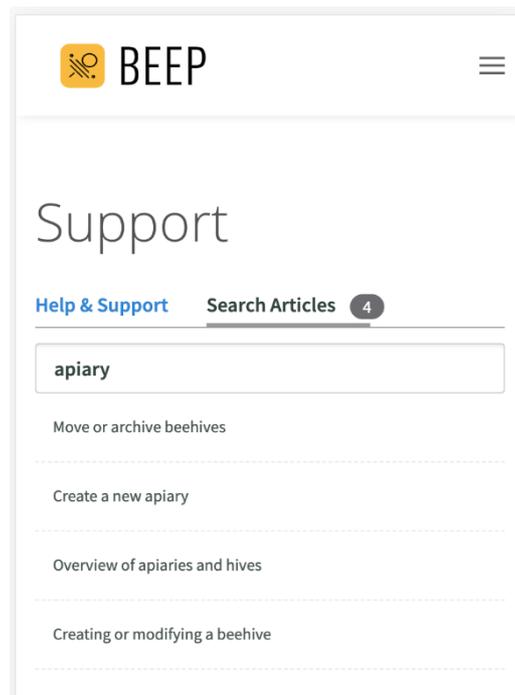


Figure 6: The design of the complete BEEP platform is 'responsive' i.e. it works on any screen size. This screenshot depicts the search feature on a mobile phone screen.

## Phone support

The first step is self-help via the knowledge base. Secondly, it is through a contact form and tickets. When the need arises, remote face-to-face support will also be provided. e.g. during the installation phase of the BEEP measurements. For personal call-back support, an appropriate tool is used for the specific circumstance, e.g. Telephone, Teams call or Skype. Screen sharing will also be used for easy support provision.

### 1.2. BEEP support system

The BEEP support system is integrated in the helpdesk. If users cannot find the information they are looking for or want to communicate about something else outside the scope of the knowledge base (e.g. new features, software issues, WP1 apiary questions, etc.), they can get support via the contact form.

- *Contact form*: the contact form on the helpdesk can be completed to find answers to specific questions. When filling in the contact form, the user must tick boxes to narrow down the subject of the question, which will speed up ticket processing. See figure 5 above.
- *Ticketing system*: when the question is sent through the contact form it will turn into a ticket automatically. The ticket is categorised (e.g. hardware, software) and assigned to the agent assigned to the category. The agent will receive an email to alert that a question needs attention.
- *Answer*: the first line support agent answers the questions. Ideally, most answers are already available in the knowledge base and therefore easy and fast to answer. If needed, the first line support agent forwards the question to the second line specialist. The agent will respond to the user via the ticketing system, which sends the response via email to the user.
- *Feedback*: if the question is useful to other users, we can update the knowledge base with the additional information. Feature requests and other software and hardware inquiries are collected and reviewed before creating new versions. The feedback loop

is important since it updates the knowledge base and the most frequently asked questions on the homepage.

## 2. Software

The helpdesk and ticketing system are integrated. In this way, the users can find all their information in one place. The system is also integrated in the app. This means that when a user is working in the app and needs more information, he or she can access the knowledge base or ask a question directly from the app. In case of offline use, a pdf version of the knowledge base can be used. All helpdesk features are available via both desktops, tablets and mobile phones.

The link to the helpdesk is: <https://beep.nl/support>

### 2.1. Multilingual

Due to the international character of the project, the helpdesk will be available in multiple languages. For now, BEEP and WR are partners that deliver agents to answer the tickets. In the future, this can be expanded to other B-GOOD partners or other stakeholders.

### 2.2. Ticket categories

By categorizing tickets in certain product type (hardware/software), action type (installation, commissioning, usage, etc.) and feature (apiary overview, hive inspection, etc.) categories, frequent arising problems and issues can be identified.

Some questions may be outside of the scope of the helpdesk. In WP1 Tier 1, we can allow questions on the BEEP platform, beekeeping and protocols for measurement. For Tier 2 and 3, questions from participating beekeepers will regarding the protocols are in scope but general beekeeping questions are out of scope.

By regularly analysing the amount of tickets in each category, the BEEP system can be structurally improved, resulting in a better user experience and in fewer data mining errors.

### 3. Implementation

The helpdesk will be occupied by multiple agents during the usage phase of Tier 1, 2 and 3 in work package 1 of the B-GOOD project. Hereby the schedule for Tier 1. This implementation will ensure a response within half a day and it is fitted to the (part-time) working schedule of the people involved.

Day:	Monday	Tuesday	Wednesday	Thursday	Friday
By:					
<b>April van Delden (BEEP)</b>		First line general			First line general
<b>Marten Schoonman (BEEP)</b>				First line general	
<b>Stephan Peterse (BEEP)</b>	First line general/ Second line hw		First line general/ Second line hw		
<b>Sijmen Janssen (BEEP)</b>		Second line hw		Second line hw	
<b>Pim van Gennip (BEEP)</b>	Second line sw	Second line sw	Second line sw	Second line sw	Second line hw/sw
<b>Zeynep Ülgezen (WR)</b>			Second line apiary	Second line apiary	Second line apiary
<b>Coby van Dooremalen (WR)</b>	Second line apiary	Second line apiary			

*Table 1: First and second line support division of tasks. Legend: sw = BEEP software; questions, issues and feedback on the use of the software. hw = BEEP hardware, BEEP base honey bee hive measurement questions. apiary = apiary setup (tier 1), beekeeping (tier 1) and protocol (tier 1, 2, and 3) related questions in work package 1.*

## **4. Acknowledgements**

n.a.

## **5. References**

n.a.