

BG-Counter

Location-based Data Storage

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Reference

This document:

Detailed explanation of concepts and used cases for location-based data storage in the new BG-Counter web app

Other resources:

Manual for the new BG-Counter Web App

<https://eu.biogents.com/wp-content/uploads/Manual-BG-Counter2-App-EN-web.pdf>

Webpage with info and links about the BG-Counter

<https://eu.biogents.com/bg-counter/>

Overview

The new BG-Counter App (launched 2024) uses a concept for data storage that is different from the previous app version: Trap counts, environmental data, and other parameters like CO₂ schedule are now stored by location.

- Locations can be created manually or automatically
- Traps can be assigned to locations automatically (based on “geofencing” using transmitted GPS coordinates) or manually
- Parameters such as CO₂ schedule can be set for many locations all at once

Configure a counter trap for automatic location assignment:

- Trap Management > set Geolocation to “Auto”

Configure a counter trap for manual location assignment:

- Trap Management > set Geolocation to “Fixed”
- Select the location from the drop-down menu “Current Location”

The default setting is “Auto”.

Geolocation settings

Geolocation = “Auto”

The location will be automatically set by geofencing:

- When a trap is within the geofence radius (100 m) of an existing location, it will automatically assign itself to that location and operate with the same settings that were previously established for that location.
- Otherwise, a new location will be created automatically with a default name that includes the IMEI; example: “*-123456789-1234-cityname”.

It is easy to change the names of automatically created locations or fine-adjust the coordinates; see sections “Change location name” and “Fine-adjust coordinates”, below.

Geolocation = “Fixed”

When Geolocation is set to “Fixed”, the trap data will be assigned to the selected location independent of transmitted GPS coordinates. The location must already exist.

You can edit all parameters (including name) for a fixed location at any time on the “Settings: Single Locations” page.

Change location name

The location name (including the default name) can be changed in the location settings. To get to the settings from the Dashboard, first navigate to the Location Summary:

- Table: scroll to location or use filter > click name > Location Summary is displayed
- Map: zoom > click icon > click name > Location Summary

To change the name (first line in the Location Info box):

- Click "View/Edit" > edit the name > click "Save" (at top right of window)

After clicking "View/Edit", the page name changes to "Settings: Single Location"; on this page you can also change all other parameters for this location.

Remember to click "Save", or changes will be discarded!

Fine-adjust coordinates

Using map navigation and the satellite image, it is possible to fine-adjust location coordinates, so they match the true location exactly, for example under a particular bush.

The procedure to navigate to the "Settings: Single Location" from the Dashboard is the same as described above.

After clicking "View/Edit", the map will automatically zoom to the area immediately around the current coordinates. Pan and zoom as desired, then right-click and drag the location marker to the desired spot. The coordinates at the bottom tip of the marker are used.

- Fine-adjust location: hold down right mouse button and drag the location marker
- To zoom the map: click "+/-" button or turn mouse scroll wheel
- To pan the map: hold down left mouse button and drag

Remember to click "Save", or changes will be discarded!

Create a location manually

Dashboard > click "New Location" > Settings: Single Location > ... > click "Save" when finished

On the settings page, enter name and coordinates; trap parameters can also be defined here

Coordinates can be typed or selected directly from the map:

- To zoom the map: click "+/-" button or turn mouse scroll wheel
- To pan the map: hold down left mouse button and drag
- To pick coordinates: point and right-click
(location marker appears, coordinate fields filled)
- Fine-adjust location: hold down right mouse button and drag marker

Remember to click "Save", or changes will be discarded!

Benefit of locations created prior to deployment

The benefit of having locations defined ahead of deployment is that you can set the same schedule for all locations (or groups of locations) all at once using the “Settings: Selected Locations” feature. Please refer to the manual for details.

Use cases

Use Case 1: Operate a single BG-Counter at multiple locations

Scenario: A BG-Counter trap is first placed at one location, remains there for a while and then is moved to a different location. This might occur in an outbreak situation or for an investigation about high mosquito abundance at a particular location.

Setup: Use Geolocation mode “Auto”.

Result: The data will be automatically stored for the current location of the counter trap.

- If a previously defined location exists (within the geofence of 100m), data will be assigned to that location.
- If no such location exists, a new location will be automatically created.

Advantage: There is no need to keep a log of when and where a counter trap was operated to access and analyze the data associated with an operational situation; instead of having all the data stored for one IMEI (as in the previous app), data is now stored for as many locations as the trap was used at.

Please note: If you use your BG-Counters on multiple locations, then the Location table (main menu - Dashboard) will have more entries than the Trap Management table (main menu - Traps)

Detailed setup instructions:

A BG-Counter is active on a location that you called “BGC Location A” -> data and settings are stored for “BGC Location A”; you want to move the same Counter to another location named “BGC Location B”.

- If the location named “BGC Location B” already exists:
The trap will recognize that it is now placed on “BGC Location B” and will store the data for this location. It will use the same settings that you have previously used at this location. If you want other settings (schedule, CO₂ settings, etc.), then you will have to adapt them accordingly.
- If the location does not yet exist, you have two options of how to proceed:
 - a) Manually create the new location prior to moving the trap
See section Geolocation settings, Create a location manually

- b) Let the counter trap automatically create the new location
See section Geolocation settings, Geolocation = "Auto"
- Check the BG-Counter schedule and other parameters for each location and adjust as necessary.

Use Case 2: Combine data in one location even if the counter trap is moved

Scenario: A BG-Counter trap is designated to operate near a landmark or public place, but it may be shifted around by more than the geofence radius, so it is desirable to keep all the data together under one location designation. Example: airport.

Setup: Use Geolocation mode "Fixed" and assign the counter trap to the designation location.

Result: All data will be assigned to the designated location even if the GPS coordinates are outside the geofence radius.

Detailed setup instructions:

If you want all data to be stored for the same location ("BGC Location A"):

- If "BGC Location A" does not exist, manually create it (section Geolocation settings, Create a location manually)
- BEFORE deployment, in Trap Management, set Geolocation to "Fixed" and assign it to "Location A"
- When you now activate the BG-Counter on Location B (or any other location), it will disregard GPS and continue to collect data for Location A.
- Check the BG-Counter schedule and other parameters for each location and adjust as necessary.

Use Case 3: Counter trap deployment across seasons

At the start of a new mosquito season, when you put the traps back to the field at already existing locations, set geolocation to "auto" and the traps will automatically assign themselves to their respective locations, regardless of where they were located the previous season.

You don't need to make sure that a BG-Counter unit with a certain IMEI is placed again at the same location of the previous season, to have continuation of historical data.

If you have new monitoring locations, you can either manually create these locations prior to activating the traps in the field or let the counter traps create them automatically. Don't forget to adjust the settings for the new locations.

Use Case 4: A BG-Counter requires service and is replaced at least temporarily

If the replacement BG-Counter is set to geolocation = "Auto" and is placed at the same existing location as the one requiring service, the data of the two BG-Counter units (e.g., 2 IMEIs) will be

stored for the same location and you will have continuation of your historical data for that location.

Use case 5: Operating two or more counter traps close to each other (< 100 m)

With the geofence radius at 100m, some precautions must be taken if two counter traps are operated in locations that are less than this distance apart.

Once a counter trap A in "Auto" mode is assigned to a location by geofencing and is sending data, no other counter trap can "occupy" this location. If a second counter trap B in "Auto" mode sends GPS data within the geofence of A, it will automatically be switched to "Fixed" mode and a new location will be created for it.

This is likely to lead to operator confusion, therefore, we strongly recommend creating the locations manually prior to deployment, and setting both counter traps A and B to Geolocation mode "Fixed".

Refer to section Geolocation settings, Create a location manually.