

Guide for the BRAHMS Botanic Garden app used on Android tablets

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Garden app introduction

The BRAHMS mobile app is used, in conjunction with BRAHMS desktop, to gather data and images for plants in botanic gardens or similar areas. The app removes the need for most paper records and optimises the process of updating your garden plant records.

Data for selected plant records are exported from BRAHMS desktop to a bespoke RDE file using the export tool provided. The RDE file is then transferred to your tablet device and opened on the app. Here, you can update you plant records by adding different categories of events and requests, add map data, images and other key categories of data. Example functions are to update stock levels, request labels, register plant moves, add species name verifications, check and/or update plant status, and add comments. You can also define and gather data for your own categories of event and request, for example phenology observations or tree maintenance requirements.

These data are then returned to BRAHMS desktop in the now updated RDE file. Here, they can be reviewed and then submitted to your database, updating existing plant records, registering new plants and adding images.

As with BRAHMS desktop, the app is provided with a flexible data grid with options to select visible columns, query/filter your data and sort records.

The app has the capability to work offline. Thus, you can gather data in garden areas that lack both internet and a phone signal.

Hardware

The app runs under android. We recommend you use the app on 8 - 11'' tablets which provides sensible access to the data grids, tool windows and the map functions. It can be used on smaller devices including phones of a sensible size but there will be restrictions with data visibility.

Installation and login

The brahms.apk file is ca. 25 MB. Copy the brahms.apk to your device using Bluetooth, a cable connection or in any other way. Run the installation on your device. This will replace any existing software. For convenience, you can add the BRAHMS icon to the tablet home page.

To login to the app on the tablet, you simply tap the BRAHMS icon and enter the surveyor's name. To work with the app, you will need to transfer at least one plant record RDE file to your tablet. This process is described below.

Transferring data from BRAHMS desktop to app

Creating an app RDE file

In BRAHMS, in the main plants table, tag the plant records you wish to send to the app. You then select **Collections > With tagged > Create a plant RDE...**

Your tagged plants would normally form a logical group such as plants from a selected area. You may want to create separate RDE files per garden location. You have the choice of exporting existing events/requests for the selected plants so that these can also be viewed in the app. Existing images are not exported. You can restrict existing events/requests by date range.

You can also restrict plants to those with a status representing 'alive'. If you have tagged one or more records in the garden localities table, you can also use the option to Export all plants of tagged locations. Once created, the next task is to copy your RDE survey file(s) to your device.

1	 Plant Status Identification 	Print/Request Labels Stock Count Clone Selected	
Event/Requ	est RDE Cr	eation Options	
		·	р.
Area 614			
Auto-created for tagged	I living plant records		
The Morton Arboretum			
	d locations.		
Restrict to living			
Include Ever	its	Include Request	ls
 No Events All Events 		 No Requests All Requests 	
	.)		
All Events	.) To 02/06/2021	All Requests Request Date Range (inc.)	02/06/2021 15
All Events Event Date Range (inc		All Requests Request Date Range (inc.)	
	Plant Event/Requ ate an RDE file for Plant E will be created in your lo Area 614 Auto-created for tagged The Morton Arboretum • Export tagged plants	ate an RDE file for Plant Events/Requests suitab will be created in your local BRAHMS RDE fole Area 614 Auto-created for tagged living plant records The Morton Arboretum • Export tagged plants • Export plants of tagged locations.	Plant Tools Event/Request RDE Creation Options ate an RDE file for Plant Events/Requests suitable for use with the BRAHMS Mobile Ap will be created in your local BRAHMS RDE folder using the following options: Area 614 Auto-created for tagged living plant records Export plants of tagged plants Export plants of tagged plants

The RDE file creation form. Once created, the RDE file can be copied to your android device.

Transfer of lookup lists

When you transfer to RDE, the relevant lookup lists are included in your RDE file. Thus, you should make sure that these are set as required before creating your RDE files. Having good lookup lists makes everything more efficient.

Lookup item	Notes
Staff person names	These are exported from entries in your Management > Assembled Names list - only for names where 'Is Staff' is selected. A list of names is required to select the name of the person doing the survey.
Event and request categories	These are added in a hierarchy from Event Type -> Event Group -> Event (the same for requests).
Plant Status categories	For example: Alive and Dead. These will be registered in your custom lookups for the field for LivingStatus. See guide section <u>Confirm/Update status</u> .
Reasons for plant status change	These are added as events see guide section Confirm/Update status.
Garden Locations	These are added from your garden locations table.
Plant sub-areas	These will be available if you have added lookups for you plant sub areas field(s).
Verifications	These are added as events see guide section Plant name verification.
Label categories	These should be registered using Collections > Label templates. For example, you may have main Label types as Engraved and Potting. Label template entries can then be added for each of these main label types.

RDE file database content summary

When you create an RDE file for the app, the file includes:

- Data for your selected plants records.
- Optionally, all or selected events/requests already linked to these plants.
- Lookup lists for all relevant fields, taken from your Lookup list table.
- Label format names, taken from the main Label Templates table.
- Garden locations.

Copying RDE files to your tablet

After creation, the RDE file is auto-registered in your RDE manager. You can open and check the RDE file to check the data – although this is not necessary.

Copy the RDE file(s) to your device using any method you like. Bluetooth is convenient but you may also use a cable connection or email. When you copy the RDE file(s) to the device, they normally go to your device's downloads folder. Note that when returning RDE files from the tablet to your desktop, if the RDE file includes images, we recommend you use a cable connection as this will be faster.

RDE File Manager for the app

Existing Documents list

When opened, the first screen you see is the **RDE File Manager** with a list of *Existing documents*. These documents refer to RDE files have already been imported into the app's workspace. If you do not see any files to import, check you have copied at least 1 RDE file to the tablet.

15:02 🕅 🖬 🖬 🔹						🕈 ବି, 🔒
RDE File Manag	er					
	Version: 2.0.0 (Build 50)					
		IMPORT AN RDE FILE				
		Previously Opened				
	Area 242_plantevents&requests.rde		OPEN	EXPORT	DELETE	
	Palm inventory_plantevents&requests.rde		OPEN	EXPORT	DELETE	
	Area 740_plantevents&requests.rde		OPEN	EXPORT	DELETE	
	574 Fruit Orchard_plantevents&requests.rde		OPEN	EXPORT	DELETE	
		Ο		<		

The app File Manager.

Load RDE from device to app

Use **IMPORT AN RDE FILE** ... to locate and register any RDE files that you have copied to the device but not yet registered within the app. When you import an RDE file, it will be auto opened and also added to the 'Previously Opened' list. The next time you wish to use the same RDE file, select OPEN for the selected RDE file.

When you load an RDE file you will be prompted to add the surveyor's name:

15:06 🛓 İ 🖬 🔹					Q 🕄 🛔
RDE File Manag					
				_	
	Version: 2.0.0 (Build 50)				
		IMPORT AN RDE FILE			
			1		
		Who is doing this survey?			
	Area 242_plantevents&requests.rde	Banks, J	OPEN EXPORT	DELETE	
		CONTINUE			
	Palm inventory_plantevents&requests.rde		OPEN EXPORT	DELETE	
	Area 740_plantevents&requests.rde		OPEN EXPORT	DELETE	
	574 Fruit Orchard_plantevents&requests.rde		OPEN EXPORT	DELETE	
		0	<		

This information is used to populate the various records where events and requests are recorded. These names are added to your BRAHMS desktop records making it easy to see who gathered the data.

Who is doing this survey? offers a list of names as included in the RDE file lookup list. Note that these names come from entries in your BRAHMS Assembled names list and will only include names marked with the 'Is Staff' field selected.

Export

Export is used when you have completed your editing tasks with an RDE file. Export creates a zip file that includes the selected RDE file and any images you have taken for the plants in that file. If there are a lot of images, the zip file will potentially be large. The zip file can then be cable-copied back to your desktop and subsequently processed. This is covered in a separate section in this guide.

Delete

Delete will remove the RDE file **and** any images associated with that file from the app workspace. Do not delete the file until you have used the Export option. Otherwise, you will lose the file and your images.



A warning message is given when you use the Delete option.

After exporting and copying the zip back to your desktop, it is your responsibility to delete any processed files in your device's downloads folder.

Data that can be added and edited

The following data can be added/edited. In some case this results in direct edits to the plant record, while in others, events and/or requests are added.

Data	Notes	Updates Plant record	Adds Event/Request
Plant Status Confirm	Confirm status of all selected records	*	*
Plant Status Change	Update status of all selected records	*	*
Stock Levels	Updating the remaining stock with notes.	*	*
Plant Location	Change to location including subareas.	*	*
Name Verification		*	*
Label Requests	Available label formats are as registered in your labels table.		*
Comments/Curation notes		*	
Propagation Requests			*
General Events	Add events as registered in your BRAHMS lookup list.		*
General Requests	Add requests as registered in your BRAHMS lookup list.		*
Map Data	Lat/Long	*	*
Images		Add image link	
New Plants		New Plant records	

Further details on data editing are provide below.

Application main menu

When you open an RDE file in the app, the menu appears in the top banner area with the RDE file name and some file stats.

15:10 🛓 İ 🖬 🔹				🛇 ्त, 🛢
574 Fruit Orchard_planteve	nts&requests.rde (482 reco	rds, 508 Events, 6 Requests, 1	l Images) close	
PLANTS	МАР	EVENTS	REQUESTS	IMAGES

The main menu includes the options:

- Plants: open the RDE table in an Excel-like data grid with editing tools.
- Map: display a map showing all plant records within the current filter group.
- Events: lists all plant events
- Requests: lists all plant requests
- Images: display thumbs for all images linked to plants in the open RDE table.

Data Grid View

The Plants View is the main viewing option for your plant records, opened by default when a file is opened. This grid has the following key options:

- Drag columns to change order.
- EDIT/LOAD VIEW: design or select a saved field view.
- To resize field width, drag header dividers.
- Tap header once to sort AZ. Tap again to sort ZA. Tap a third time to remove sort.
- Tap another column to sort on additional column. Sorts are additive.
- Tap the Selected check box to select record(s). This adds a red tick mark.
- Use *Clear selection/Select all* to tag/untag all records in file, within any filters you may have applied.
- Use *Hide unselected* to filter to only selected records.
- Use *Hide changes* to filter to records that have been edited.
- Double tap any cell value to apply a filter on that cell value. Apply filters on multiple values.
- Use ADD FILTER to manually add one or more filter settings.
- A single tap on a record opens the detail of that plant.
- Select ADD PLANT to register a new plant record.
- The *Close* option closes the opened document. Data are auto saved.

In addition to these grid functions, when the grid is open, you have access to the 'Act on selected' functions. These are further discussed below.

Grid columns EDIT VIEW LOAD VIEW Find by ID CLEAR I de changed Hide unselected Abberture by ID Abberture by ID CLEAR I de changed Hide unselected Abberture by ID Abberture by ID CLEAR I de changed Hide unselected Abberture by ID Abberture by ID by		PLANTS		MAP		EVEN	rs		REQUE	STS	IMAGES
Id Full Name # Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image # Events Status Remaining Locality Code Locality Name Image	Grid co	lumns	EDIT VIEW			_				Hide unselected	
MCR 400-1985*4 Caryan illinoinensis (Wangenh.) C.Koch 'Fritz' 0 1 A 1 575 575 FVG, Fruit Orchard check specint Image: Antiper Stress of the stress of th	Selecte	ed Ac	ct on Selecte	ed				E.			1
Image: More addresses C.Koch 'Fritz' Image: More addresses Image: More addreses Image: More addreses	lected	Changes	Id	Full Name	# Images	# Events	Status	Remaining	Locality Code	Locality Name	
Image: Section of the section of th	• ·	MCR	400-1985*4	Carya illinoinensis (Wangenh.) C.Koch 'Fritz'	0	1	A	1	575	575 FVG, Fruit Orchard	check specimen
IE 145-1990*3 Borkh. 'Mississippi Palisades' 0 4 D 0 573 575 FVG, Fruit Orchard IE 219-1985*3 Corylus avellana L. 'Butler' 1 3 D 0 575 575 FVG, Fruit Orchard IE 219-1985*3 Corylus avellana L. 'Butler' 1 3 D 0 575 575 FVG, Fruit Orchard	-	E	81-1995*1	Castanea 'Alachua'	0	3	D	0	575	575 FVG, Fruit Orchard	
Diff 2020#1 Fragaria × ananassa Duchesne 0 1 D 0 575 575 576 576 577 576 577 577 577 577	-	E	146-1990*3		0	4	D	0	575	575 FVG, Fruit Orchard	
	~ 1	IE	219-1985*3	Corylus avellana L. 'Butler'	1	3	D	0	575	575 FVG, Fruit Orchard	
			975-2020*1		0	1	D	0	575	575 FVG, Fruit Orchard	
Fragaria × ananassa Duchesne. 0 3 D 0 575 575 FVG, Fruit Orchard ADD PL		C C	lear selection		0	3	D	0	575	575 FVG, Fruit Orchard	ADD PLANT

A typical Plants grid view.

LOAD VIEW SAVE VIEW	RENAME SAVED VIEW	LETE SAVED VIEW		
DISPLAY ALL HIDE ALL	RESTORE DEFAULT COLUMNS			
Changes	Family	Field No.	Commemoration Date	0
🥌 Id	Genus Hybrid	Suffix	Commemoration End Date	
Full Name	Genus	Donor Code	Commemoration Notes	
# Images	Species Hybrid	Donor	Garden Code	
# Events	Species	Prov. Type	Garden Name	
# Requests	Subspecies	Parent Plant Material	Locality Area	
Contraction Status	Variety	Parent Plant Date	Locality Code	
Initial	Forma	Barcode	Locality Name	
Removed	Cultivar	Verified Category	Subarea 1	
Remaining	Label Range	Verified By	Subarea 2	
IUCN Red List	Collectors Code	Commemoration Category	Subarea 3	
MSB Serial No.	Collectors	Commemoration Name	Subarea 4	
Vernacular Name	Prefix	Commemoration Person	Subarea 5	
			APPLY DISCARD CHANG	ES

Editing column views.

Query Filter options in the Plants data grid

Find by ID

Typing into the Find by ID text box auto-filters plant records to those that contain your text entry.

11:49 ▲ Area 24	• 🖻 🖪 • 2_plantevents&requests.	rde (129	records, 447	7 Event	s, 1 Requ	iests, 0 li	mages)	CLOSE		० हि
	PLANTS	MA	λP		EVE	NTS		REQUE	ESTS	IMAGES
Grid c	olumns EDIT VIEW L	OAD VIEW	113	FILTER	Double-ta	CLEAR p in a cell t	o filter on th	lide changed at value	Hide unselected	
0 Select	ted Act on Selected)								
Selected	Full Name	Changes	Id	Status	# Images	# Events	Remaining	Locality Code	Locality Name	Com
	Fagus sylvatica		2012-1115*1	L	0	4	1	242	area 242	

Searching for a plant ID.

Double-tap data value

A double-tap on any data grid cell value will add this property and its value as a selected filter. Filters are additive.

	PLANTS	м/	\P		EVE	NTS		REQUE	STS	IMAGES
Grid o		LOAD VIEW		D FILTER	Remai		Contains	D	Hide un	×
elected	Full Name	Changes	Id 2015-582*1	Status	# Images	# Events	Remaining	Locality Code	Locality Name	
	Full Name Populus nigra Populus nigra subsp. betulifolia	Changes	ld 2015-583*1 1993-260*1	Status U D	# Images U	# Events 4 2	Remaining	Locality Code 242 242	Locality Name area 242 area 242	Northern edge of Lough Derg Kilcrow river. GR 800057. Ma river, height 17m. Alt. 30m. Hi petiols. Vinbossed.
	Populus nigra	Changes	2015-583*1	υ	U	4	Remaining 1 1	242	area 242	Northern edge of Lough Derg Kilcrow river. GR 800057. Ma river, height 17m. Alt.30m. H
	Populus nigra	Changes	2015-583*1 1993-260*1	D	0	4	Remaining 1 1 1 1	242	area 242 area 242	Kilcrow river. GR 800057. Ma river, height 17m. Alt.30m. H

In the above example, 3 filters have been added and can be viewed in a scrollable list. Individual filter selections can be removed using the X option.

Selecting any filter property and data value

By selecting the ADD FILTER option, you can select any data grid column and enter any value. Tapping on the Property text box lists all fields with the more commonly used fields listed at the top. Select 'Show all properties' to list less commonly used fields. The filter will be applied on the value added for the selected column using 'contains'.

	⊒ ≏ ⊠ • 12_plantevents&re	auaste via (490 essende .447 Fuerte 4 Postuaste & Imerae)										
	PLANTS	Select filter property										
		Living Status										
Grid o	columns EDIT VI	Full Name										
		Family										
0 Selec	ted Act on Sele	Genus										
U Selec	Actonised	Locality Name										
Selected	Full Name	Locality Code										
	Eucalyptus glaucescer	Collectors Code										
	Eucalyptus lacrimans	Collectors										
	Eucalyptus lacrimans	Field No.										
	Eucalyptus lacrimans	Donor Code										
	Eucalyptus pauciflora niphophila											
	Fagus sylvatica	Show all properties										
	Select all											
	∎ ≏ 🖪 • 12_plantevents&re	supple eds (100 separate 147 Fuente 1 Desupete 0 los										
Alea 24	PLANTS	Select filter property										
		Commemoration Category										
Grid c	columns EDIT VI	Commemoration Date										
		Commemoration End Date										
0 Selec	ted Act on Sele	Commemoration Notes										
0 Selec	Action sele	Commemoration Text										
Selected	Full Name	Comments										
	Eucalyptus glaucescer	Cultivar										
	Eucalyptus lacrimans	Donor										
	Eucalyptus lacrimans	Donor Code										
	Eucalyptus lacrimans	Family										
	Eucalyptus pauciflora niphophila	Field No.										
	Fagus sylvatica	Show all properties										
	Select all											

Sorting records

To sort records, simply tap the column header. The first tap sorts A-Z, the next Z-A and a third tap clears the sort. You can sort on multiple columns.

17:21 () 574 Fru		lantevents	&requests.rde MAP	(482 records, 997 Events EVE		ts, 4 Image	s) close REQUESTS		• IMAGES	
Grid c	olumns E	DIT VIEW	LOAD VIEW	Find by ID	CLEAR p in a cell to fil	-	hanged 🔲	Hide unselected		
482 Sel Selected	lected Act	on Selecte _{Changes}	d Family	Full Name	Locality Code	Status 1	Remaining	Ucculity Name	# Events	0
	1824-2004*1	EM	Amaryllidaceae	Narcissus (Cyclamineus Group) 'Jumblie' L.	575	A	500	575 FVG, Fruit Orchard	1	Narc
	2237-2005*1	ε	Amarylidaceae	Narcissus (Cyclamineus Group) 'Jumblie' L.	575	A	500	575 FVG, Fruit Orchard	1	Narc
	2236-2005*1	ε	Amaryllidaceae	Narcissus (Trumpet Group) Little Beauty J. Gerritsen & Son	575	A	500	575 FVG, Fruit Orchard	¥.	Narc
	1822-2004*1	ε	Amaryfidaceae	Narcissus (Trumpet Group) "Little Gern" J. Gerritsen & Son	575	A	500	575 FVG, Fruit Orchard	1	Narc
	2235/2005*1	E	Amarylidaceae	Narcissus (Trumpet Group) 'Little Gem' J. Gerritsen & Son	575	A	500	575 FVG. Fruit Orchard	1	Narc
	Clear I	election	Amarylidaceae	Narcissus (Trumpet Group) 'Little Beauty' J. Gerritsen & Son			490	575 FVG, Fruit Orch	D PLANT	Naro
			111	C)		<			

In this example, the data are sorted A-Z by Status and Z-A by remaining stock. The sort arrows indicate the sort direction.

Plant Detail View

Detail view

To select and edit an individual plant record, use a single tap on the plant record in any field. This displays all non-null fields in the left-hand panel. Across the top, there are menu options for Overview, Events, Requests and Images. Using the options on the right panel, you can add and edit the plant map location and add locality notes.



In plant detail mode, after tapping on a record, you can edit and view events, requests, map data and images.

Map data

If the plant already has a map location, the map zooms to and displays that plant. In **Edit Map Point** mode, the map becomes full screen, and a blue dot indicates your current location – this map marker changes as you move about. A Zoom to current location option is also provided. Tapping on the map updates the plant position which you can then save.



Act on this plant...

Also from the plant detail view, you can use the Act on this plant... options.

Overvie	ew	Events	Requests	Images
Act on this pl	ADD COMMENTS			
LOOK UP SPECIE	s POWO	Act on thi	is plant	
		Change Location	Adjust Stock	
	Plant properties	Confirm Status	Update Status	
ID	251-2022*1	Request Labels	Add Comment	Veril in +
Living Status	A	Request Labers	Add comment	
Garden Code	CBG	Add Verification	Create Event	0, 0, S. Geological Survey, CNES / Airbus, Maxar Technologies,
Garden Name	Chicago BG	Create Request		IT FROM MAP
Locality Area	Regenstein Fruit & Vegetable G			
Locality Code	575	Enter ad	ditional notes about th	ne plant's locality here
Locality Name	575 FVG, Fruit Orchard			
Garden Latitude	42.14967728			

Images

To take images, you must be in plant detail mode. From here, select **Images** > **TAKE PHOTO**. This uses the device camera as configured on your device and once the image is taken, it will link the image(s) to the current plant record. All images of the current plant are displayed as thumbs on the Images page. On most tablets, you have to select OK to confirm after taking each photo. To delete images, use the **DELETE** option.

Overview	Events	Requests	Images
ADD PICTURE FROM LIBRARY	TAKE PHOTO		
29/07/2023 DELETE	29/07/2023 DELETE		

Plant images are taken in plant detail mode.

Events and Requests

In plant detail mode, you can create new records using the **CREATE EVENT** option. To edit an existing event, tap on the event. To delete a record, swiping the record left exposes a **DELETE** option. The same applies to Requests. You can only delete events and request created on the app.

CREATE EVENT				
Event Date Type	Group Event	Person	Result	Notes
Plant Status Status Confirmed				DELETE
27/07/2023 Plant Status Stat	us Confirmed			

Online checks for species

Assuming you are online, you can check the current species online using the **LOOK UP SPECIES** option, currently provided with options for POWO, IPNI and Google Images.

Functions for selected records

Act on Selected

Standard editing functions are available for selected records. These functions are listed in the below screen:

	PLANTS		МАР	EVENTS REQUES					REQUES	STS	IMAGES
Grid c	olumns	EDIT VIEW	LOAD VIEW Find	by ID		CLEAR		Hide cha	anged	Hide unselected	
				ļ	Act on S	elected.	•		2)		
3 Selec	ted A	ct on Selecte	d C	hange Lo	cation	Adj	ust Stock				
				Confirm Status Update Status			late Status				
Selected	Changes	Id	Full Name						ity Code	Locality Name	
	IE	219-1985*3	Rocorylus avellana L. 'B	equest La	abels	Add	Comment			575 FVG, Fruit Orchard	
		975-2020*1	Fragaria × ananassa I A 'Albion'	dd Verific	ation	Cre	ate Event			575 FVG, Fruit Orchard	
	REI	507-2010*1	Fragaria × ananassa I 'All Star'	reate Req	luest					575 FVG, Fruit Orchard	
	RE	408-2019*1	Fragaria × ananassa buchesne 'Jewel'	0	5	A	47	575		575 FVG, Fruit Orchard	
	E	737-2017*1	Fragaria × ananassa Duchesne 'Jewel'	0	4	D	0	575		575 FVG, Fruit Orchard	
	🔽 c	lear selection	Fragaria × ananassa Duchesne 'Jewel'	0	2	D	0	575		575 FVG, Fruit Orchard	ADD PLANT

Change location

You can edit plant location details. The Subareas headings will be as defined in your BRAHMS location settings. Lookups are available at all locality levels.

	PLANTS			MAP	Update Location for 2002-410*3						
0.11					Garden Name	My Garden Name	×	-		_	
Grid c	olumns	EDIT	VIEW LOA	AD VIEW	Locality Area	Arboretum Nursery	×	•	anged	Hide un	selected
1 Select		t on C	elected		Locality Name	New location	×	•	e		
T Select		t on Se			Subarea 1 01		×	~			
Selected	Changes	Status	Id	Fi	Subarea 2	,	×	•	lity Code	Locality Name	Comme
	E	L	2002-410*3	Abelia uniflor						area 242	
		D	1988-8440*1	Betula calcico	Subarea 3 A		×	•		area 242	Oct.1987.
		D	1998-464*1	Betula platypi mandshurica	moved as p	part of display upgra	ding.			area 242	Deciduous tree to 6m x 4m. Comm west-facing slopes with Quercus m Phellodendron amurense and Fraxi substrate.
		L	2010-1847*1	Castanea sat	CANCEL	CHANGE LOCATION				area 242	Collected fom a single specimen ir 3 sq.m. 100 of plants producing se pollarded tree with trunk 15ft. in di edge of Pinus pinaster forest.
		ear sele	ction 1236*1	Cedrus atlant	ONNOLL	CHANGE ECOATION				area 242	ADD PLANT
									_		

Location names are passed to the app from your lookup lists.

Adjusting stock levels

Plant remaining stock can be adjusted. If the remaining stock is higher than the initial stock, the initial quantity is adjusted up. This option updates the plant record and also adds a stock adjustment event record to selected plant(s).

10:45 🛤 Area 24		events	krequests.rd	e (129 records	s, 446 Event	s, 1 Re	quests, 0 I	mages)	CLOSE		न्हेः <u>श्रे</u>	
Grid c	ted Ac		VIEW LOA	DVIEW	Adjust Stock Initial Quanti Remaining C	ty 10 Juantity	2-410*3 8		shanged lue			
Selected	Changes	Status	ld	Full	Removed Qu	iantity	2		ality Code	Locality Name	e Comment	
		L	2002-410*3	Abelia uniflora	Extra plar	nts fou	nd			area 242		
		D	1988-8440*1	Betula calcicola						area 242	Oct.1987.	
		D	1998-464*1	Betula platyphy mandshurica	CANCEL	ADJ	IUST STOCK		-	area 242	Deciduous tree to 6m x 4m. Common. west-facing slopes with Quercus mon Phellodendron amurense and Fraxinu: substrate.	
		L	2010-1847*1	Castanea sativa		0	4	1	242	area 242	Collected fom a single specimen in a 3 sq.m. 100 of plants producing seed pollarded tree with trunk 15ft. in diam edge of Pinus pinaster forest.	
	C C	lear sele	ction 1236*1	Cedrus atlantica		0	4	1	242	area 242	ADD PLANT	
		1	1973-11703*1	Cedrus atlantica		0	5	1	242	area 242		
	III III						0			<		

Stock adjustments are added as events but also update the main plant record.

11:05 🖼 🛤 🛓 🔹 rea 242_plantevents&requests.rde (129 records, 447 Events, 1 Requests, 0 Images) 🛛 🗖 💷 🗖 💷											
PLANT	s	MAP	EVE	ENTS	REQUESTS		IMAGES				
Plant ID	Event Date $~~\downarrow~$	Туре	Group	Event	Person	Result	Notes				
2002-410*3	30/07/2023 (NEW)	Inventory	Stock Check	Stock Adjusted	Banks, J		Initial quantity was now 10. Remaining quantity				

An example event added after a stock quantity update.

Confirm / Update Status

Confirm status for selected plants. Adds a confirm event record to selected plant(s). Update status allows you to change the status of a plant. Status values are available as in your BRAHMS lookup list. A reason for status change must be selected from your lookup list, otherwise the Chance Status button is not enabled. Adds a status change event record to selected plant(s).

Your plant status categories are added to your BRAHMS lookup list from Management > Lookup Fields by selecting the field Living Status and adding values as required. Also note that the value representing 'Alive' should be entered into your System > Options > Living Collections > Plants > Status code – Living.

The 'reason for status change' values are added to your BRAHMS lookup list from Management > Lookup Fields as follows:

EventType: Plant Status EventGroup: Status Change (parent = Plant Status) Event: list of values (parent = Status Change)

For further information on editing lookup lists, please refer to the main guide.

10:31 🖬 Area 24		events8	&requests.rd	e (129 recor	ds, 446 Even	its, 1 Rei	quests, 0	Images)	CLOSE			० हि. <u>म</u>
Grid c	olumns ted Ac		VIEW LOA	S	Find by ID. Jpdate status fo Status is D Reason: Dead	or 2002-41	CLEAR 0*3		Hide chang	jed	Hide u	nselected
Selected	Changes	Status	Id		Seems to ha	ve been	accident	ally cut on		Code	Locality Name	Comment
		L	2002-410*3	Abelia uni	main stem.						area 242	
		D	1988-8440*1	Betula cal							area 242	Oct.1987.
		D	1998-464*1	Betula pla mandshur	CANCEL	CHANGE	STATUS				area 242	Deciduous tree to 6m x 4m. Common, west-facing slopes with Quercus mon Phellodendron amurense and Fraxinus substrate.
		L	2010-1847*1	Castanea sativ	a	0	4	1	242		area 242	Collected fom a single specimen in a 3 sq.m. 100 of plants producing seed. pollarded tree with trunk 15ft. in diam edge of Pinus pinaster forest.
	C 🖸 C	lear sele	ction 236*1	Cedrus atlantic	a	0	4	1	242		area 242	ADD PLANT
		1	1973-11703*1	Cedrus atlantic	a	n	5	1	242		area 242	
				111			0				<	

Changing plant status. Note the Change Status option is only enabled after the status is changed and a status change reason is provided.

Request Labels

Label formats are listed as added to your plant labels table in BRAHMS desktop.

11:16 🖪 Area 24		events&	&requests.rd	e (129 records	s, 447 Eve	nts, 1 Re	equests, () Images)	CLOSE		오 कि है	
Grid c	olumns	EDIT	VIEW LOA	D VIEW	Request la Group	bels for 2 Engrave			changed	🔲 Hide u	nselected	
1 Select	ted Ad	ct on S	elected		Туре	Large - v	with plant	ing date				
Selected	Changes	Status	Id	Full	Quantity 2	2			ality Code	Locality Name	e Comment	
	E	L	2002-410*3	Abelia uniflora	Notes					area 242		
		D	1988-8440*1	Betula calcicola						area 242	Oct.1987.	
		D	1998-464*1	Betula platyphy mandshurica	CANCE	L REG	QUEST LAB	ELS	-	area 242	Deciduous tree to 6m x 4m. Common. west-facing slopes with Quercus mon Phellodendron amurense and Fraxinu- substrate.	
		L	2010-1847*1	Castanea sativa		0	4	1	242	area 242	Collected fom a single specimen in a 3 sq.m. 100 of plants producing seed, pollarded tree with trunk 15ft. in diam edge of Pinus pinaster forest.	
	C C	lear sele	ction 236*1	Cedrus atlantica		0	4	1	242	area 242	ADD PLANT	
		1	1973-11703*1	Cedrus atlantica		0	5	1	242	area 242		
							0			<		

Add Comments

Add any curatorial notes. These data are stored directly to the plant comments field.

Plant name verification

Add a plant name verification with verification type and notes. Updates plant record and adds a verification event record to selected plant(s). Verification categories and reasons are listed from your BRAHMS desktop lookup lists.

11:18 🖬 Area 24							0 Images	CLOSE			♥ 🗟 🖥
								REQUE			
Grid c	ted Ac		VIEW L	Add verification for 2002 Category Verification Reason		material	required		1	de unsele	cted
Selected	Changes	Status	Id	Verified By Banks, J		material	required	LOOKUP NAM		Name	Comment
	E	L	2002-410*3	not flowering					2		
		D	1988-8440*1						2	Oct	t.1987.
		D	1998-464*1	CANCEL ADD VE	RIFICATION				2	we Ph	ciduous tree to 6m x 4m. Common. st-facing slopes with Quercus mon ellodendron amurense and Fraxinu: ostrate.
		L	2010-1847*1	Castanea sativa	0	4	1	242	area 242	3 s pol	llected fom a single specimen in a q.m. 100 of plants producing seed. larded tree with trunk 15ft. in diam ge of Pinus pinaster forest.
	C C	lear sele	ction 1236*1	Cedrus atlantica	0	4	1	242	area 242		ADD PLANT
		1	1973-11703*1	Cedrus atlantica	n	5	1	242	area 242		
						0			<		

Note that verification change values are added to your BRAHMS lookup list from Management > Lookup Fields as follows:

Verification Category

EventType: Identification

EventGroup: Full Verification; Partial Verification; other values are required (parent = Identification) Event: list of values (parent = the above group values, for example Full verification; Partial Verification; ...)

For further information on editing lookup lists, please refer to the main guide.

Create Events and Requests

You can add events and requests for other general entries. For example, adding the phenology **Observation > Flowering > Full Flower** or a request for **Maintenance > Tree removal**. The event and request categories that you add must first be registered in BRAHMS desktop.

Mapping plants

If you are working offline or in an area with a poor signal, you may want to fully zoom into the area you are visiting prior to going to the field. The map data are cached on the device.

The Map option on the main menu will map all plants within the current filter group. Markers are coloured as shown on the map legend with different colours for Selected, Edited, Alive and Dead (or otherwise not alive).



Display all plants in the current filter group.



Tapping on a marker displays details of that plant in a small map label. It also allows you to select one of the 'Act on' options, for example to request labels or change the plant location.

Tapping on the map label opens the plant detail window together with the map point editor.

A long press on the map label opens the main plant data grid with the current plant selected.



You can turn on all map labels using SHOW ALL LABELS but this likely to useful only when you have a smallish number of points and/or are well zoomed in.

Adding a New Plant

Select **Add Plant** to register a new plant. When you add a new plant, the new plant Identifier default to PLANT01, PLANT02, etc. Plant IDs must be unique as any images linked to these plants will include the ID as part of the image name. You can add the basic details here. A locality name is required. Images may be linked, and you can also add a map reference.

Later on, when the RDE in being processed prior to transfer to BRAHMS, you can link the plant to an existing Accession - or add a new Accession.

18:28 🖬 🛓 N • 74 Fruit Orche Plants		CANCEL	Add New Plant	SUBMIT	MAGES
PLANT	S:	GRATOLE	Aud New Flant	oobiiii	IMAGES
Grid columns	EDIT VIEW	Identifier	PLANT01		unselected
		Genus	Salvia	×	
0 Selected		Species	pratensis	×	
elected Changes	i id	Locality Name	012 EWG, Vista Garden, S		Ry Name
	238-201.5*2				ruit Orchard
	386-1984*1	Subarea 1			ruit Orchard
	392-1984*1	Subarea 2			ruit Orchard
	1824-2004*1				ruit Orchard
	2237-2005*1	Subarea 3			ruit Orchard
•	1044-1017+1	Living Status	A		rut Orchan
-	Select all 1823-2004*1		-		rait Orchan

Adding a new plant record.

	SET MAP LOCATION
ADD PICTURE FROM LIBRARY	ТАКЕ РНОТО

The lower section of the Add plant form.

Transfer RDE Data and Images to BRAHMS

Copy and open RDE zip

When you open an RDE zip returned from the app, this will add the RDE file and all associated images to your RDE registered folder. You can either overwrite the original RDE file or, if you wish, rename or move the original. In practice, there's little point in keeping the original file. When you open the zip to your registered RDE folder, the RDE file will be listed in your RDE file list in BRAHMS.

Images

Before importing RDE files that have images back to BRAHMS, make sure that your *shared image folder* has been setup and is accessible. The shared images folder is edited using **System > Options > Shared Folders**.

When the RDE file is imported, the images are physically moved from your default RDE folder to your shared images folder and registered in the BRAHMS images table in that location. This means that other users will be able to see these images from within BRAHMS. Later on, these images may be moved elsewhere.

New plants and accessions

If there are new plants, these will be at the bottom of your RDE file. As a first step, you need to ensure all new plants have an accession number. To add this, use the lookup function provided. New plants that have no Accession cannot be imported.

Se	Select/Create Accession: 🔠 🕂 (enabled for new plant records only)							
	Record ID	Tag	Del	* New Plant	# Images	Accession #	Plant ID	Plant Status
7								
•	1				3	A1983-3323	1983-3323*1	D
_	2					A2009-610	2009-610*1	D

The Accession Lookup is only enabled for new plants. Choose an existing accession or add a new one.

The transfer process

Import reporting indicates the number of new events, requests and images for existing and new plants.

	elect/Crea	ate Ad	cessio	on: 🖽 🕂 (e	enabled for ne	w plant records onl	y)	
	Record ID	Tag	Del	* New Plant	# Images	Accession #	Plant ID	Plant Statu
7	1							
	1					A1983-3323	1983-3323*1	D
-	2					A2009-610	2009-610*1	D
-	3					A1994-2888	1994-2888*1	D
-	4					A1957-5611	1957-5611*1	D
-	5					A1964-34305	1964-34305*1	D
-	6			v			PLANT01	L

Newly added plants must be assigned an Accession number. If you do add an accession, the plant will not be imported.

	RDE Data Wizard							
St	Step 1: Run data analysis Restrict all import operations to tagged records only.							
S								
	Tag matched RDE records in the current database.							
	Autom	natically run the dat	ta import after successful analysis*.					
		o not process custo						
	(* unless	s there are custom field	s to be processed or tick the above to also skip custom field da	ita processing)				
Contraction of the second								
			Ru	n Analysis Caner				
			_					
B	eport Loo							
Re	IStatus		Data Summary	Comment				
Ra		Data Type	Data Summary	Comment				
R	Status	Data Type		Comment				
R			Deta Summary 1983-3323'1: 1 events.	Comment				
R	Status	Data Type		Comment				
R	Status	Data Type Events/Requests	1983-3323*1: 1 events.	Comment				
	Status New New New	Data Type Events/Requests Images	1983-3323*1: 1 events. 1983-3323*1: 3 images.	Comment				
	Status New New New	Data Type Events/Requests Images Events/Requests	1983-3323*1: 1 events. 1983-3323*1: 3 images. 2009-610*1: 2 events.	Comment				



The importer reports on the addition of events, requests, images transfers, image links and new plant additions.

Annex 1. app v. 2.0.0 update summary (July 2023)

Revised or new Item	Notes
User interface/layout	Overall upgrade to app user interface with improved menu layout and grouping of toolbar options.

Plant detail page	Upgrade to the plant details page with improved layout and a larger map area. Access to 'Act on this plant' options for the current plant. A new Add comments button.
Query/Filtering	Multiple filter options have an improved scroll-list display. Filter fields are prioritised with commonly used ones at the top of the field list.
Locate Accession #	A new search option to locate Accession numbers. This auto-updates the data grid as you type.
Column selections	Data grid column views can now be created, edited, named, saved and deleted more easily. Loading a selected grid view is generally faster.
New data grids for events and requests	New top level menu options added to access new plant event and plant request data grids.
Indication of plant 'edit status'	A new field "Changes" added to the data grid to indicate if a record has been edited. Coded letters indicate the plant record edit status. New events and requests are indicated with E and R respectively. Some edits use more specific codes: M for a map edit. I for an image addition. Thus, for example, it is possible to filter on all records that have had images taken or where map data have been updated.
Hide changed/unselected	New tick boxes to hide plant records already edited and/or unselected.
Label requests	Default to 1 per plant. Previous label category remembered.
Show/Hide edited records	A quick filter to show or hide record that have been edited.
Map point highlighting	Maps now highlight Selected, Edited, Alive, Dead records in separate colours. Maps have a colour point legend.
Act on selected on maps	The main map screen has an 'Act on Selected' option.
Map point to plant detail / grid	Tap map point to open legend. Tap legend to open plant detail page. Long press a map point legend open the data grid.
Copy to clipboard	Long press any field in grid or detail view to copy the data value to clipboard.
Text field wrapping	Longer text fields like locality notes and comments are displayed in full.

Garden App Privacy Policy

- The BRAHMS garden app software is independent from BRAHMS desktop software. It is managed and licensed by <u>Oxford University Innovation (OUI)</u>.
- The app receives plant record data from BRAHMS desktop via a BRAHMS RDE file. The app is used to edit these data by adding information from plant stock inventories. Data from the BRAHMS app are subsequently uploaded to BRAHMS desktop to update plant records.
- Aside from the plant records themselves, the data passed to the app from BRAHMS desktop includes a list of names from the BRAHMS assembled names list and marked as being staff members; a list of garden locations; and various lookup values as utilized by the app to expedite data entry.
- The app utilises the Google Maps API which returns a location and accuracy radius based on information about cell towers and WiFi nodes that the mobile client can detect. Before using this, users must have a Google Maps API key. Users of the BRAHMS app are bound by Google's Terms of Service as provided here: https://policies.google.com/privacy.
- The app utilizes Syncfusion data grid management software: <u>https://help.syncfusion.com/xamarin/datagrid/overview</u>.
- The app is able to access a number of internet sites (currently IPNI https://www.ipni.org and POWO https://powo.science.kew.org) to help with the verification of plant names.
- Plant records data managed by the app are not shared in any way except when the user selects to physically copy app data as gathered by the app to another device. Copying app data would be the normal procedure to upload the data to BRAHMS desktop.