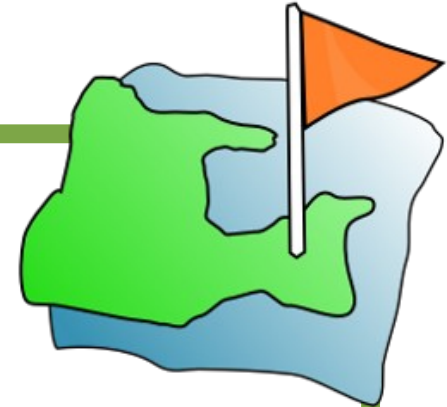


ZamiaDroid

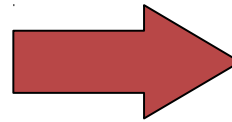
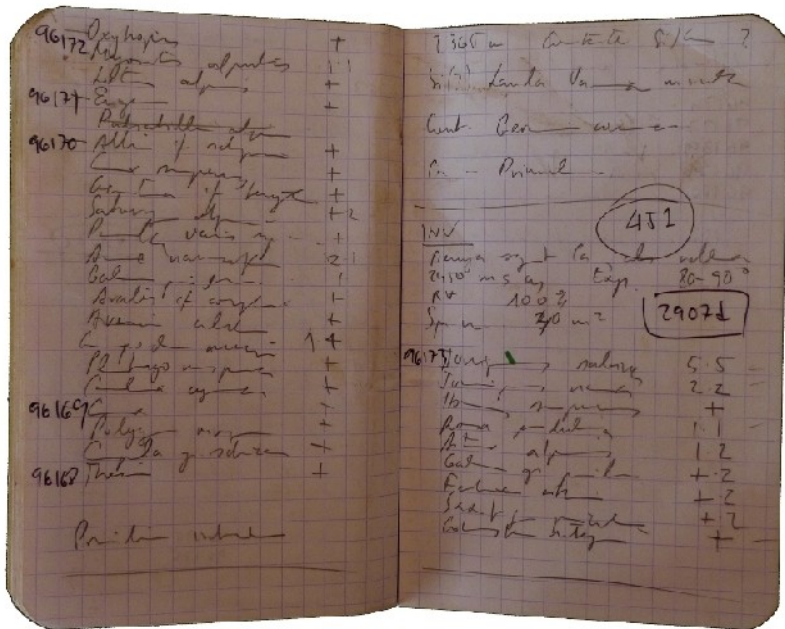


ZamiaDroid



Field registration of biological data
using mobile devices

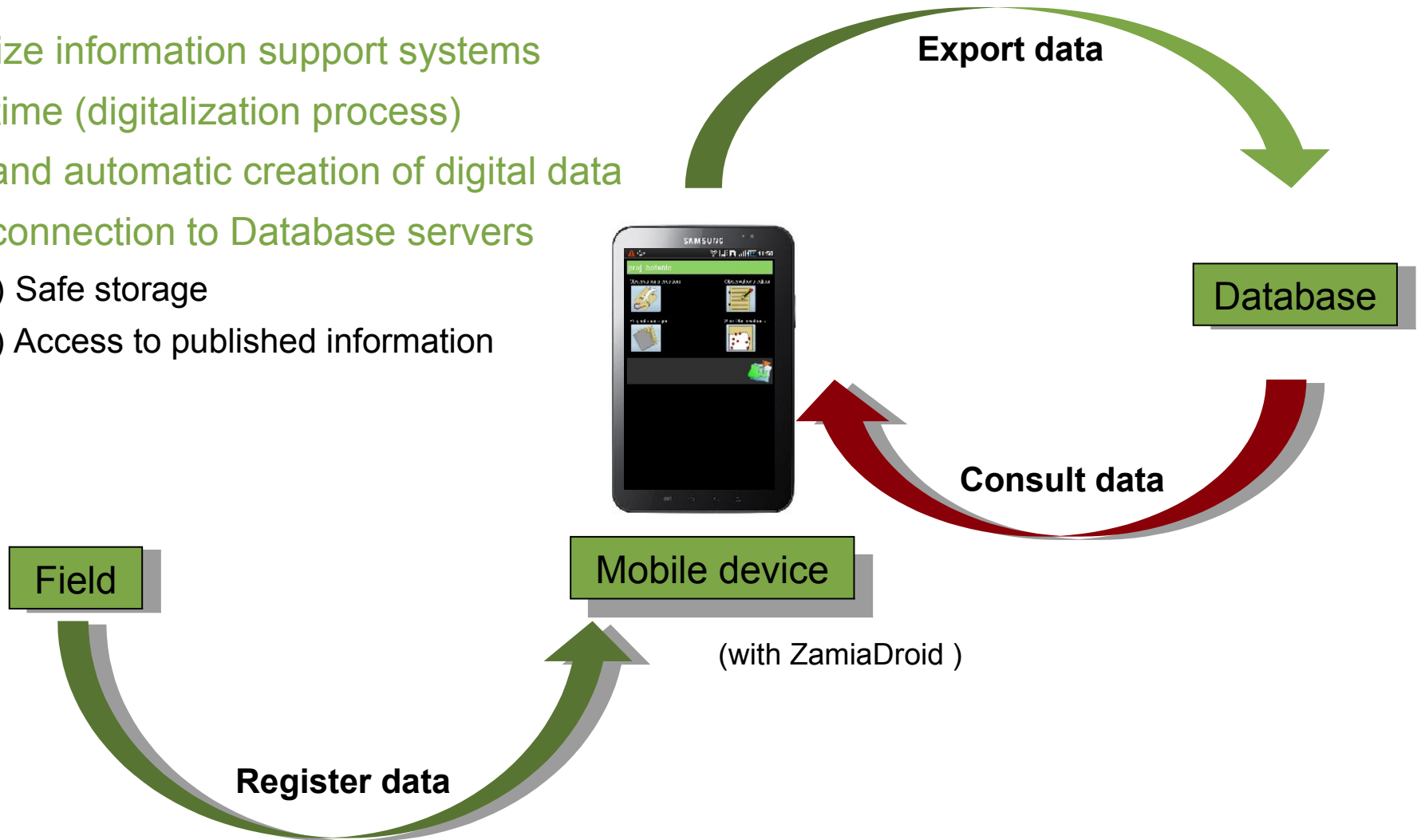
Main idea



Goals

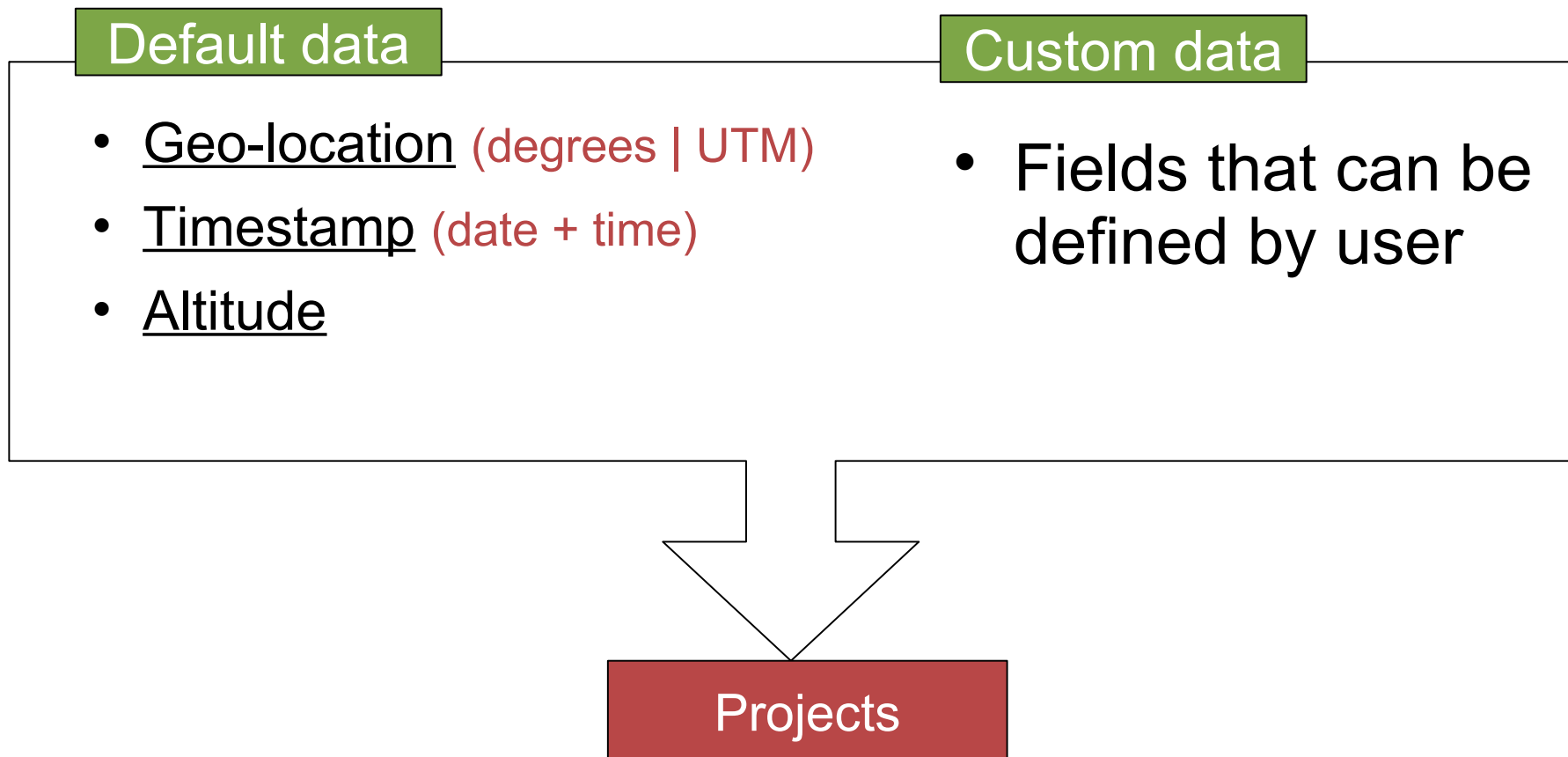
Minimize information support systems
Save time (digitalization process)
Easy and automatic creation of digital data
Easy connection to Database servers

- a) Safe storage
- b) Access to published information



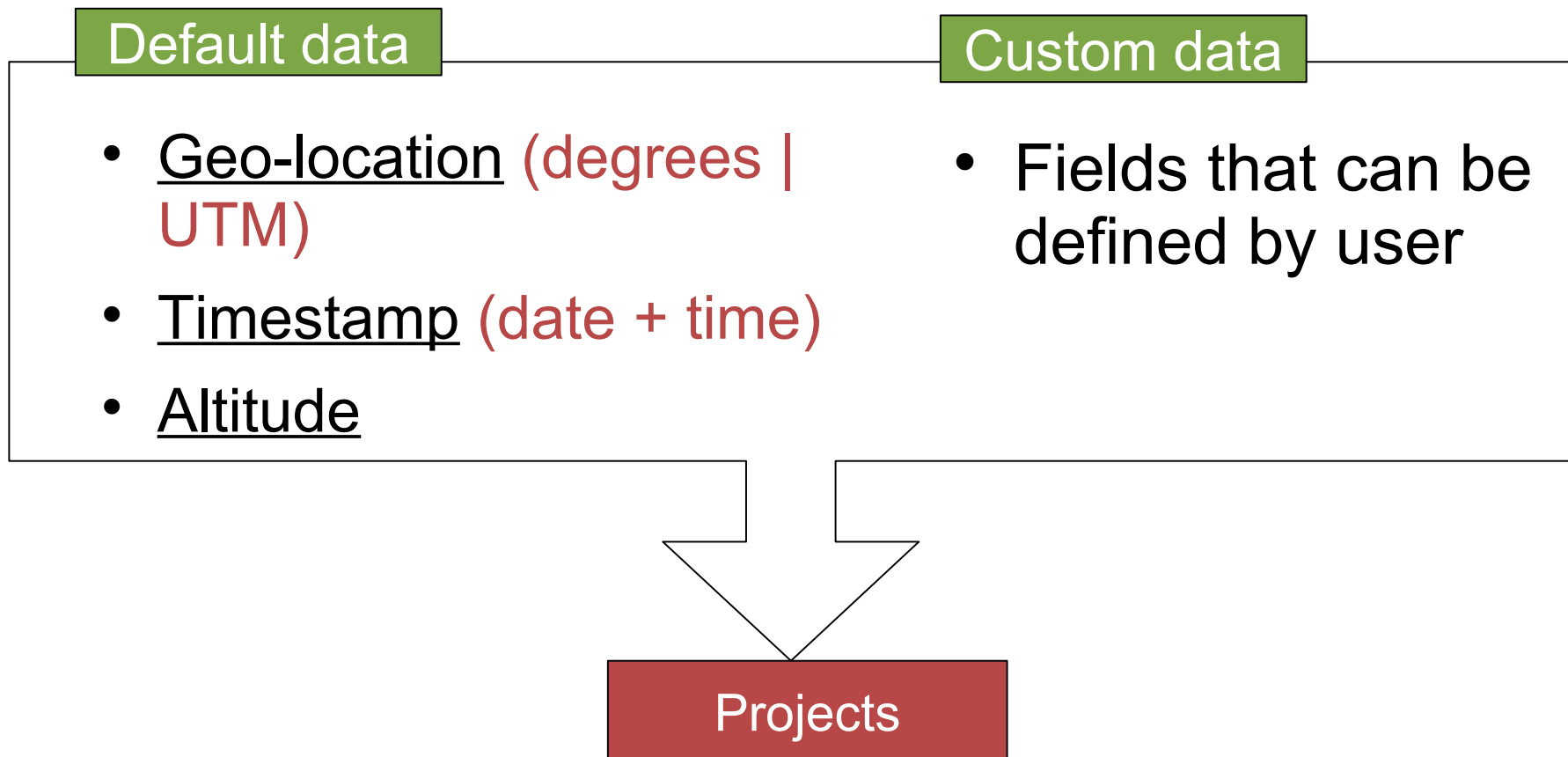
Main concepts

- Registering observations with mobile devices



Main concepts

- Registering observations with mobile devices



Project Definition (forms)

Projects creation using forms

- Free field (text, numerical o boolean)
- Photo field
- Sub-project field
- Predefined or complex field (with a list of items)
- Thesaurus field

Free field	<input type="radio"/>
Predefined field	<input type="radio"/>
Photo	<input type="radio"/>
Sub-project	<input type="radio"/>

ExcursioMola_Fagus 5-20-2011

Original name quercu ile

Original certit

Altitud 12

Folder

Secondary coordinates code

Author

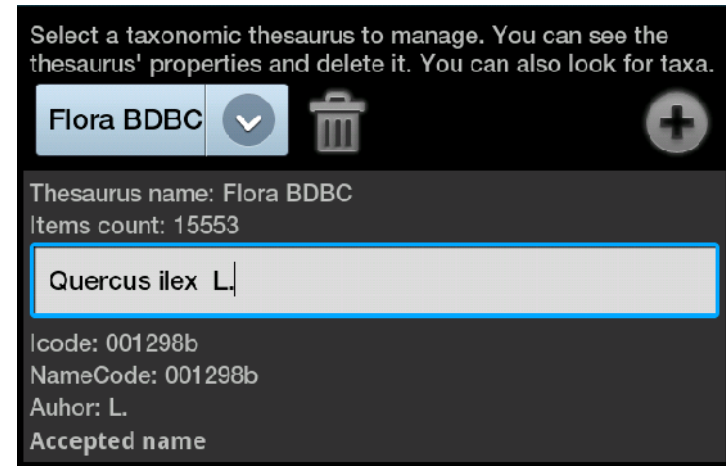
Create Observation Coordinates

Altitude (m)

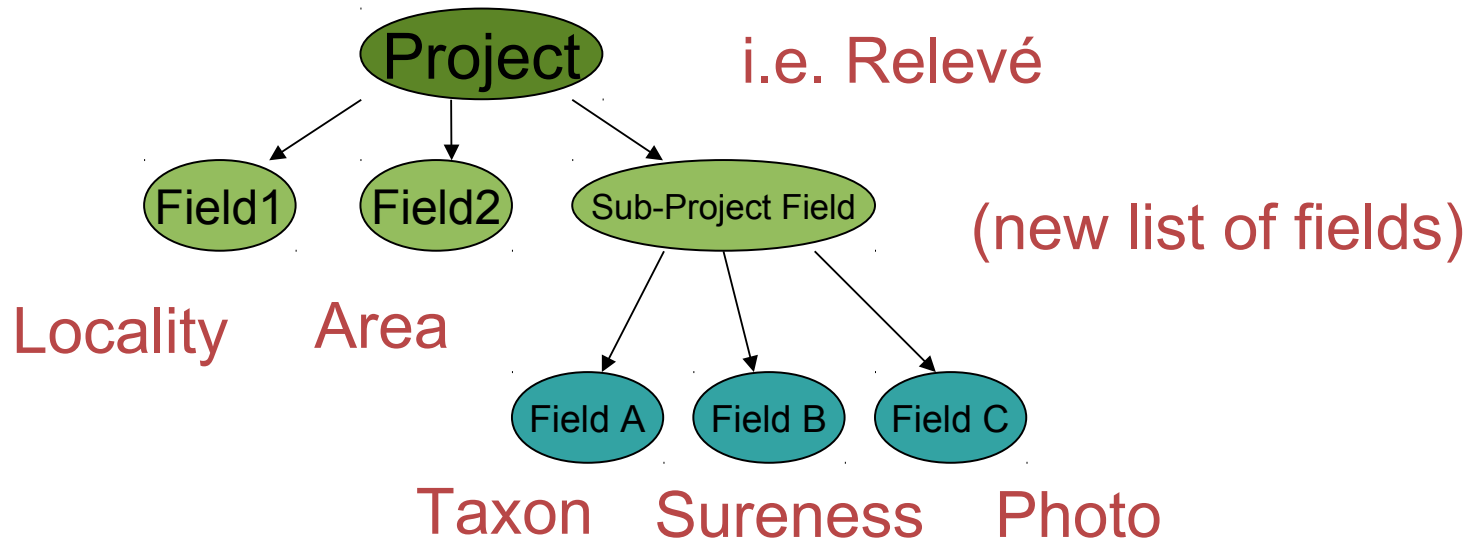
1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p
a s d f g h j k l
↑ z x c v b n m ←
123 .,? Sig.

Thesaurus

- List of words grouped by similarity
- Loading taxonomical thesarus (list of species)
- Strenghts:
 - Saves typing time
 - Avoids typo errors
 - Allows synonyms checking



Sub-Project Fields (relevé)



Locality	Area	relevéFiele
Barcelona	25 m ²	2011_05_20-12:00:01
Barcelona	25m2	2011_05_20-12:20:01
Barcelona	25m2	2011_05_20-12:25:01

Taxon	Sureness	Photo
Pancratium maritimum	OK	img_23123.jpg
Plantago crassifolia	OK	null
Ammophila arenaria	Ok	img_21312.jpg

Taxon	Sureness	Photo
Pancratium maritimum	OK	img_23123.jpg
Plantago crassifolia	OK	null

Database connection

1) Biodiversity data bank of Catalonia (BDBC)


2) Iberian and Macaronesian Vegetation Information System (SIVIM)

- Access to biological records and photos for concrete species
- Access to a set of species or plant communities for a concrete location

Datos remotos (584)	Datos locales (223)	Datos totales (689)
✓	✗	Abies alba Mill.
✓	✗	Achillea millefolium L.
✓	✓	Achillea odorata L.
✓	✗	Achillea odorata L. subsp. odorata
✓	✗	Achillea ptarmica L.
✓	✗	Achillea ptarmica L. subsp. pyrenaica (Sibth. ex Godr. in Gren. et Godr.) Rouy
✓	✗	Aconitum anthora L.
✓	✓	Aconitum napellus L.

16:28

Banco de datos de biodiversidad de Catalunya



Fotografies i fitxa biològica del tàxon: *Pancratium maritimum* L.

família: Amaryllidaceae
noms populars: lliri de mar, lliri blanc de marines, assutzena d'arenal, assutzena d'arena, assutzena blanca, assutzena de mar, lliri de canet, lliri de Santa Cristina
codi d'espècie: 003023
forma biològica: G
ecologia: Platges i dunes
distribució al Principat: Zona litoral, des del t. ruscínic al lucèntic
freqüència: comú
distribució biogeogràfica: Med.
Floració: V - X
Distribució altitudinal: 0 - 10 m s.m.
Adscripció fitosociològica: Ammophiletea
Mida: 30 - 60 cm

Legislació sobre la protecció de tàxons

Nom del tàxon al text legislatiu	<i>Pancratium maritimum</i>		
Estatus	Estrictament protegida a l'espai del PEIN		
Rang de la norma	Autonòmic	Administració competent	Generalitat
Referència normativa	Decret		328/92
Annex III del Decret del PEIN, modificat per DECRET 172/2008, de 26 d'agost, de creació del Catàleg de flora amenaçada de Catalunya			
Butlletí	DOGC	Número	1714
		Data	1992-12-14
Espais del PEIN on està estrictament protegida l'espècie			
Aiguamolls de l'Alt Empordà			

Enllaços d'interès

[ORCA](#)

[Natura Digital](#)

[Herbari Virtual del Mediterrani Occidental](#)



Citation Management

- Features:

Edit, order, select, export, remove and filter citations

- Filter by:

Field

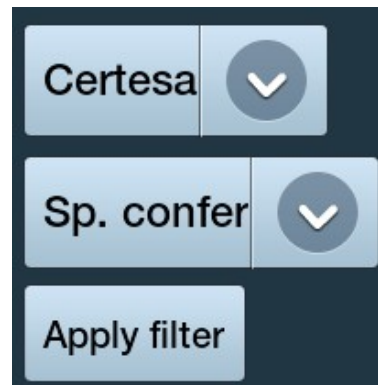
Location (UTM, lat/long)

Date

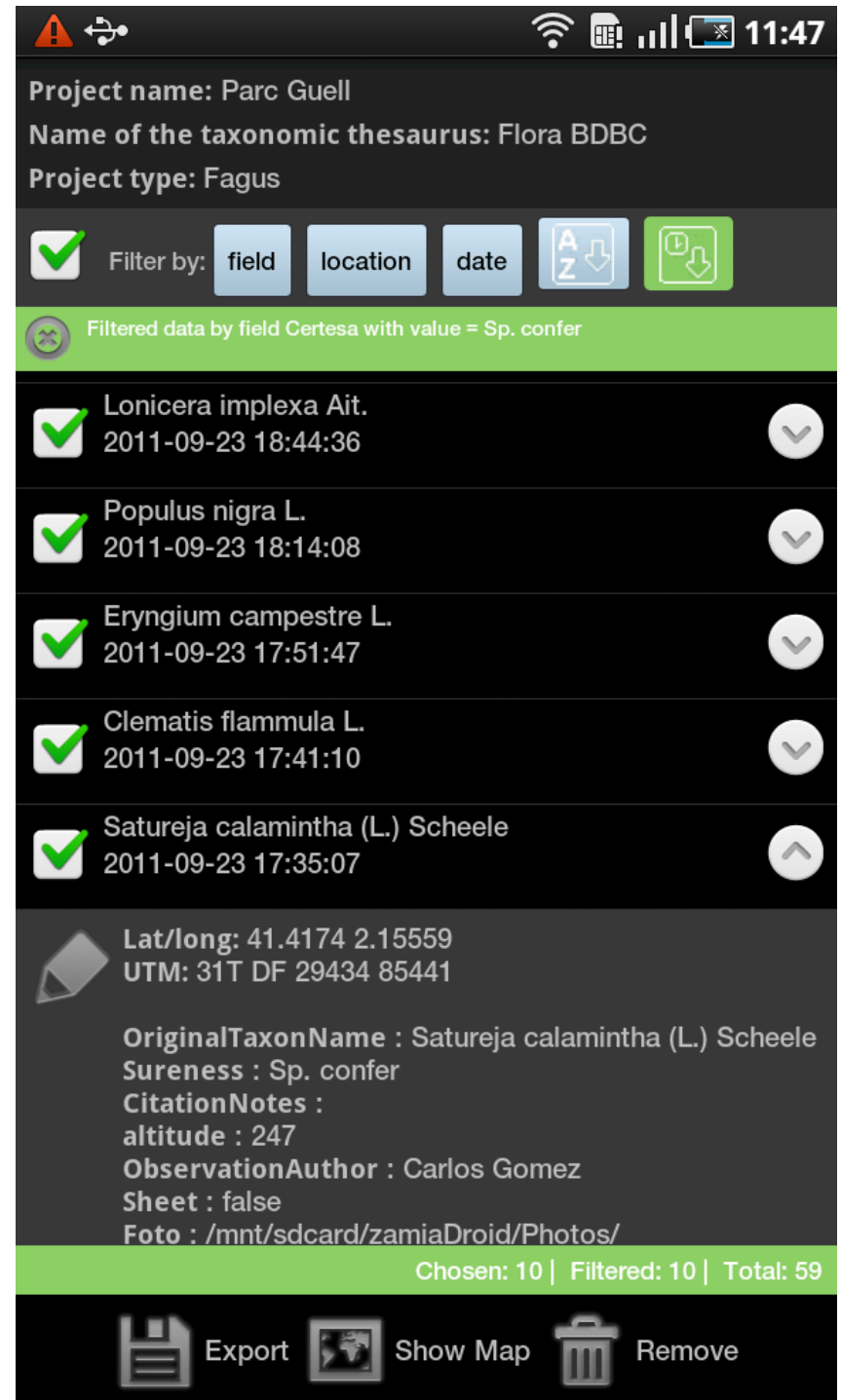
Taxon



A date selection interface with three columns for day, month, and year. The day column shows '23', the month column shows 'Sep', and the year column shows '2011'. Each column has '+' and '-' buttons for navigation. An 'Apply filter' button is at the bottom left.



A taxon selection interface with two columns. The first column shows 'Certesa' and the second shows 'Sp. confer'. Both columns have a dropdown arrow. An 'Apply filter' button is at the bottom.

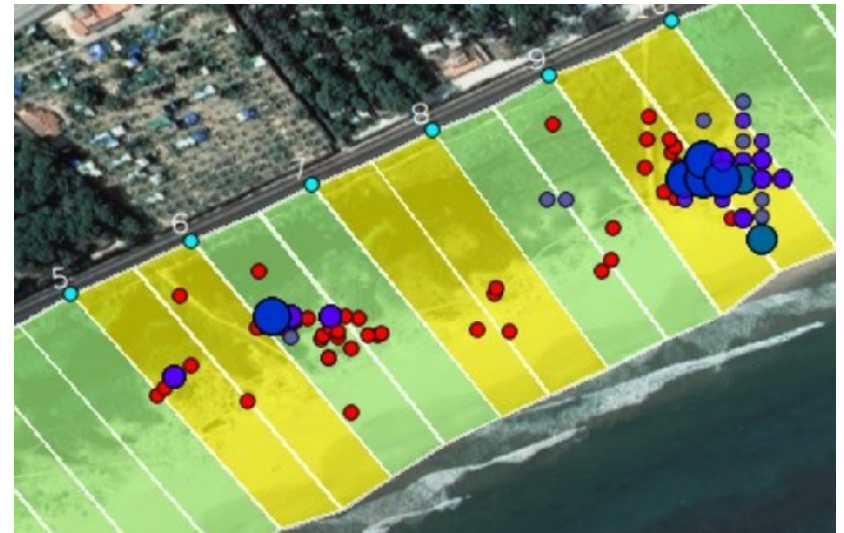


A screenshot of a mobile application interface. At the top, it shows project information: 'Project name: Parc Guell', 'Name of the taxonomic thesaurus: Flora BDBC', and 'Project type: Fagus'. Below this is a 'Filter by:' section with buttons for 'field', 'location', and 'date', along with sort order icons (AZ and ZA) and a refresh icon. A green bar indicates 'Filtered data by field Certesa with value = Sp. confer'. The main list shows five entries, each with a checkmark, the taxon name, the date and time, and a dropdown arrow. The entries are: 'Lonicera implexa Ait. 2011-09-23 18:44:36', 'Populus nigra L. 2011-09-23 18:14:08', 'Eryngium campestre L. 2011-09-23 17:51:47', 'Clematis flammula L. 2011-09-23 17:41:10', and 'Satureja calamintha (L.) Scheele 2011-09-23 17:35:07'. Below the list, there is a section for 'Lat/long: 41.4174 2.15559' and 'UTM: 31T DF 29434 85441', followed by detailed taxon information: 'OriginalTaxonName : Satureja calamintha (L.) Scheele', 'Sureness : Sp. confer', 'CitationNotes : altitude : 247', 'ObservationAuthor : Carlos Gomez', 'Sheet : false', and 'Foto : /mnt/sdcard/zamiaDroid/Photos/'. A green bar at the bottom of the list shows 'Chosen: 10 | Filtered: 10 | Total: 59'. At the very bottom, there are icons for 'Export', 'Show Map', and 'Remove'.

Data export

- TAB files (Excel / Calc)
- GIS (KML and shapeFiles)

	A	B	C	D	E	
1	CitationCoordinates	SecondaryCitationCo	Date	Taxon	Altitud	D
2	41.64851804521501	31TDG2111711186	2011-mai-03 10:56:32	Ruscus aculeatus L.	446	D
3	41.64852021072443	31TDG2111711186	2011-mai-03 10:56:54	Quercus ilex L. subsp. ilex	448	D
4	41.64922223634608	31TDG2109611265	2011-mai-03 11:01:36	Teucrium botrys L.	448	D
5	41.64923849958162	31TDG2108611267	2011-mai-03 11:02:21	Teucrium botrys L.	435	D
6	41.64930945688707	31TDG2109511274	2011-mai-03 11:02:40	Arenaria conimbricensis Brot. subs	445	D
7	41.6491760489310E	31TDG2109711260	2011-mai-03 11:03:22	Euphorbia exigua subsp. exigua L.	466	D
8	41.65112913998959	31TDG2098411478	2011-mai-03 11:12:20	Aquilegia vulgaris L.	453	D
9	41.65168790082783	31TDG2093111540	2011-mai-03 11:20:36	Helleborus foetidus L.	458	D
10	41.65174514203215	31TDG2092611547	2011-mai-03 11:21:10	Celtis australis L.	458	D
11	41.6516718733465E	31TDG2076811540	2011-mai-03 11:26:43	Cytisophyllum sessilifolium (L.) O.	460	D
12	41.6516676971413E	31TDG2076311540	2011-mai-03 11:28:33	Valeriana excelsa Poiret	461	D
13	41.6515779660650E	31TDG2075511530	2011-mai-03 11:30:13	Alliaria petiolata (Bieb.) Cavara et	463	D
14	41.65177625788979	31TDG2070411553	2011-mai-03 11:30:29	Tamus communis subso. communi	464	D



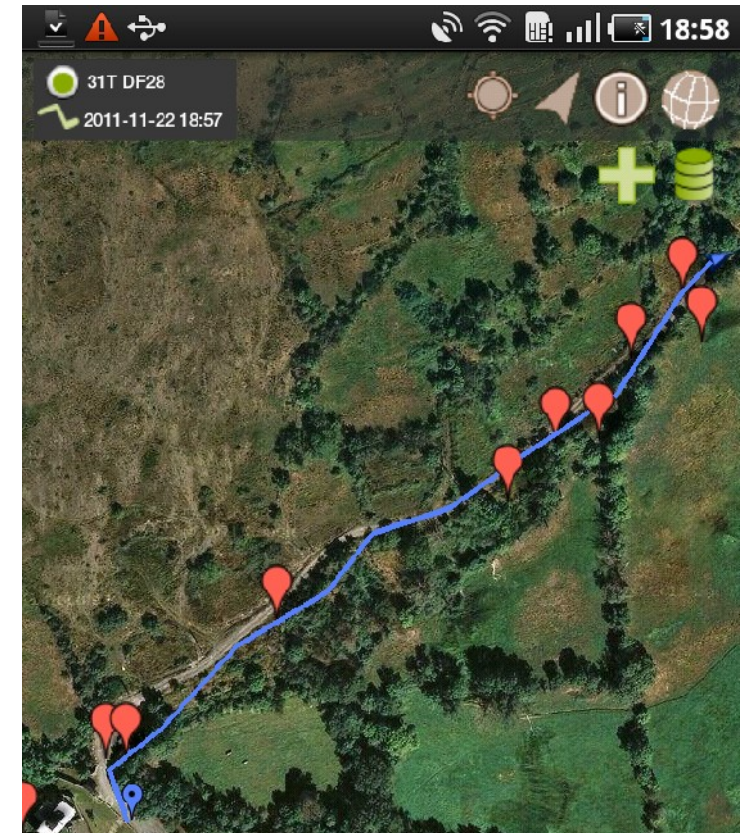
• Fagus and Quercus (B-Vegana)

- Fagus provides an efficient method to enter floristic citations.
- Quercus is oriented to the creation and management of relevés.

Observations Map

Show observations using googleMaps

- Observation info, scale, location and walking direction
- **Observation creation** on the map
- Iberian UTM grid and Database connection
- Record of GPS tracks



More features

- Repository project

Access to an on-line server that contains pre-defined projects

- On-line Thesaurus

Capability to download thesaurus from:

- Biodiversity data bank of Catalonia or
- Iberian Macaronesian Vegetation Information System

- Multilingual Interface

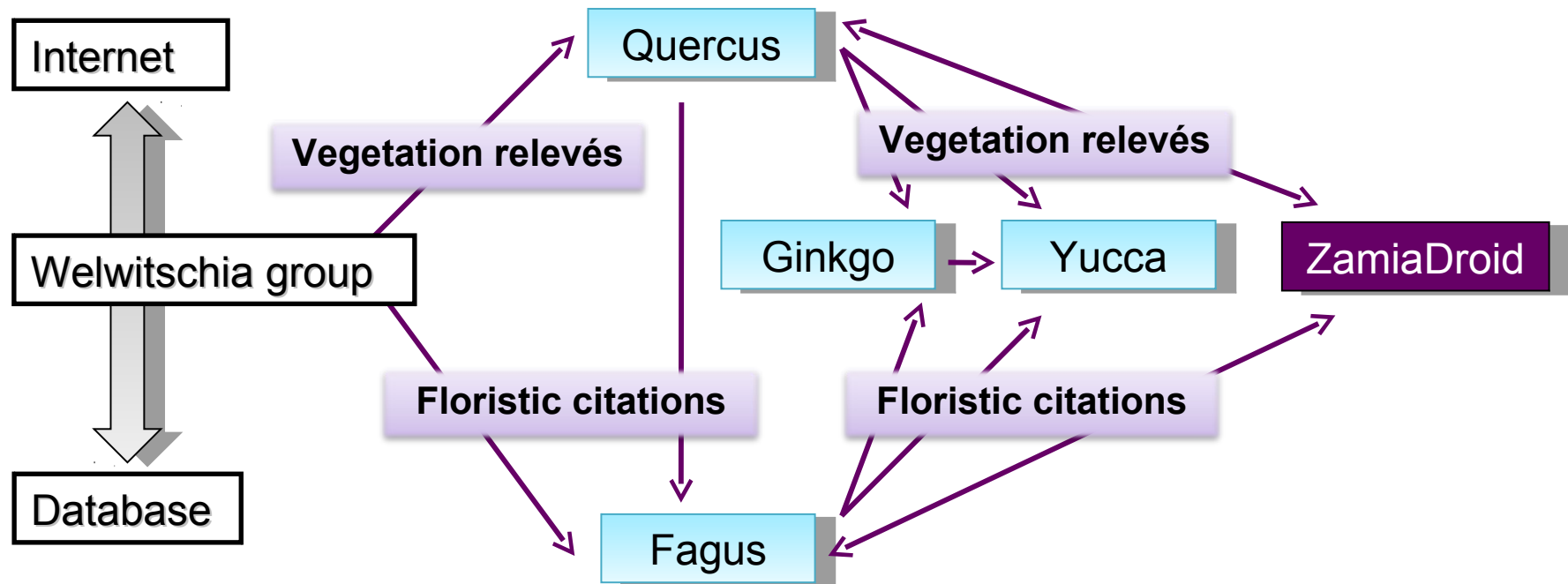
- Catalan, Spanish, English and French

- Projects and observations management

- Modification and removal

- Image gallery with observations photos

ZamiaDroid context: B-VegAna



B-VegAna (Vegetation edition and Analysis):

An integrated software package oriented towards the storage, management and analysis of ecological data. The package consists of several free applications, which can be run independently:

- 2 data management modules (Quercus and Fagus)
- 1 statistical module (Ginkgo)
- 1 mapping module (Yucca)

-1 module for mobile devices (ZamiaDroid)

ZamiaDroid / Android

- Free software or openSource

ZamiaDroid is openSource software, everybody can use it in a free way, study it and adapt it to their own needs. Changes made by others can help everybody, derivative work can be added to improve this software.



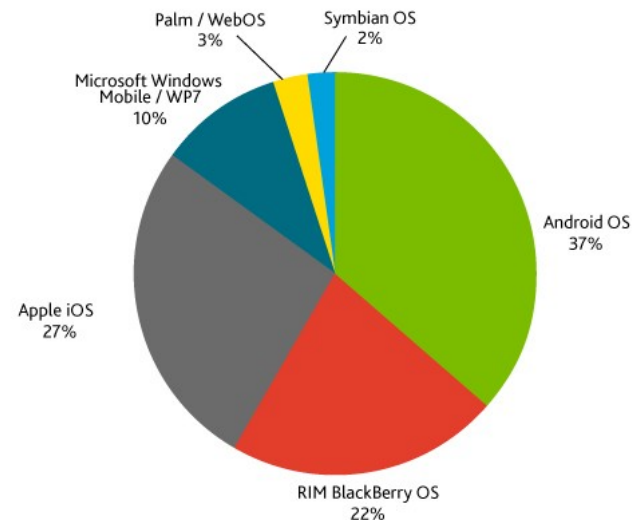
- Android

- Mobile operating system
- Open Source
- High growth during last 4 years
- Fast development
- Android Market



Smartphone market share

March '11, Nielsen Mobile Insights, National



Source: The Nielsen Company.

B-VegAna Team

Original Idea: David Martí Pino and Xavier Font

Programmers:

ZamiaDroid: David Martí Pino

BDBC: Rafael Quadrada

Director: Xavier Font

Thanks to: Gwendolyn Peyre, Josep Vilaplana, Carlos Gómez, Berta Mora and Javier Moreno

