ISISMAPPING USER GUIDE

All **bold** items in the text are discussed in greater detail later in the document

CONTENTS

MISSION

To provide an information gathering and organizational framework for research and publicity of a region or culture. We have separated these two goals into

A Day in the Life and

Research

RESEARCHER

YOUR GOALS:

to gather, manipulate, and share data using GIS (Geographic Information Systems) using the device and software of your choice.

THE DEVICE:

We are providing you with an **N95 8 GB SmartPhone** as the recommended information and survey device. On this device you can use **SportsTracker** to create GPX and KML and CSV routes, which can be saved to the phone and downloaded manually with a cord, emailed with connection to the internet, or uploaded via **SIC! FTP.** The phone comes with an 8 megapixel digital camera for recording of photos and video. **Location Tagger** is an application that is constantly running and assures that whenever a photo is taken, it is geotagged. Using an application called Shozu these photos can be sent with an internet connection to Flickr, Picasa, facebook (or your social media platform of choice) but we recommend using **SIC! FTP** to place the photos in the isismapping database. For environments that don't have instant internet access, you can use direct connect to a computer, or using a **local area network** compile all data on one phone, and bring it to the nearest internet connection for uploading to the server. This phone is also set up with a **mobile web server (MWS)** that makes it easy to get instant access and sharing of content. Simply log into the MWS on the device, and all photos, blog entries, and data files are accessible via logging into the online portal.

THE GIS SOFTWARE:

We assume that more "hardcore" researchers will use expensive suites like **ArcGIS (ESRI)** for which data is saved as shapefiles, and less tech savvy users will want to use Google Earth or Google Maps. We think it's important that these two types of users can work together. We have created a **geodatabase** on the isismapping server that allows for the saving of data from ArcGIS onto the server via an application called **ZigGIS.** Users that log into the isismapping.org site can navigate to "geodatabase" for a link to the most up to date data in the geodatabase, downloadable as a KMZ file for viewing in Google Earth. Each time the PHP script is run to generate this KMZ file, it is saved in a folder on the server, which serves as a method to record data over time.

ONLINE COLLABORATION:

For collaboration between researchers we have created isismapping.org, which is run on a content management system (CMS) called **Drupal**, and also has the geoserver set up on it. Drupal is important as a back end interface structure that also ensures privacy in data sharing. Drupal requires an **administrator** to manage users, update and

improve the interface, and help users and troubleshoot. Researchers can log into isismapping.org to get access to the latest data from the geodatabase(s), download/upload files via the File Manager, or write about and share maps in their research blog. Users can easily save a KML file to their user folder in the file manager, upload the link location(s) on the "Make a Map" page, and then copy paste the generated code to embed the map into a post.

COMMUNITY SURVEYS:

The phone comes equipped with **Frontline Forms** which allows users to download forms, Manage data, and enter new data. Forms are created on a desktop client, and sent to and from phones via a compressed SMS message. We see this method as very useful for geographic regions that allow for SMS but do not necessarily have an internet connection. **This solution remains to be tested by the isismapping team!

A DAY IN THE LIFE

YOUR GOALS:

You are like a researcher, but you are much more interested in documenting experience. Consequently, your data collection is a lot more media and narrative based. Your goals are to gather media and narrative to put online to create awareness and publicity, and show viewers what it's like to be in the shoes of a member of a specific community.

THE DEVICE:

We are giving you an N95 8GB SmartPhone for the same reasons as the researchers. It takes beautiful, geotagged photos, easily creates and saves routes, and has many methods for transferring this data to an online interface. (Please reference "Research → the Device) for specifics. For the purposes of recording "A Day in the Life" we would like to focus on the algorithm of collecting experience.

HOW TO RECORD "A DAY IN THE LIFE"

The N95 Smartphone is your method for recording experience. We assume that the device will travel around with a community member for the duration of a day, and the member can take photos and video, record their route, and write about it. Here are the steps we recommend for recording a "Day in the Life," whether you are following a subject, or doing it for yourself.

1) Make sure that the phone is fully charged, as running GPS and using the camera for one day requires a full battery. We have provided a standard wall charger in the toolkit to do this.

2) When you turn on the phone, go to Applications → SportsTracker, and turn on tracking to record your route for the day. You have the choice of letting it run constantly or stopping it when you aren't moving from a location for some time to save battery. These routes should be saved in *this folder* on the phone.

3) Use the camera to take pictures, and look for a green "crosshair" symbol in the upper right to ensure that the GPS is running. Click the top right navigation button (labeled "Camera" to take pictures when you please.) If the symbol is green, the GPS is working, and the phone will tell you that the photo was successfully tagged. These photos will automatically be saved on the phone.

4) If you have an internet connection, you can log directly into the mobile web server by going to Applications → Webserver. From here you can update a status or write directly in your blog, if you choose. For the purposes of recording a day in the life, we don't think that it is realistic to sit down and write extensively when you are on the go. We recommend that you sit down at the end of the day and review your route and photos. If you are shadowing a community member, we recommend sitting down with him/her and allowing him/her to reflect on why certain photos were taken, what and who are in them, or even providing a short summary of the day. This might be done on paper, on a computer, or recorded, depending on the technology you have available. You can have the community member write him or herself, or write notes for your own needs. We have provided a sample form in the appendix of this document.

5) At the end of the day you will have a collection of media files, tracks, and potentially paper documents that are representative of your "Day in the Life." We need to get all of these things onto a computer! There are a couple of ways that this data can get transferred online.

* If you have an internet connection on your phone but no computer: You can use SIC! FTP to place your data in the appropriate folder on the server (put url here)

*If you have internet on your phone AND a computer, you can log into the mobile web server on your phone, and access it online, and have direct access to all of your files.

* If you have a computer but no internet connection, you can use the provided USB cable and (Ovi/Nokia Media Manager *name here)* to upload the data directly to the computer. We recommend doing this to a computer with some sort of direct connection, otherwise you will just be uploading data to another place with no links.

* If you have multiple devices, and no internet connection, and travel is required for internet accessibility, we recommend using Bluetooth to create a LAN (local area network) between the devices, compiling the user folders all on one phone, and sending that phone off to the internet accessible location. You can also take all the mobile devices with you if you choose to not create a LAN, but that is just more to carry.

6) Once you have your images/media, KML, and journaling on a computer with internet connection, it's now necessary to put this on a map. We recommend that you open all of these files in Google Earth, save them as a KML, log into isismapping.org and save the KML file in your users folder, and then use the "Make a Map" to create map code to embed in a post. You can then add the journaling to the post, or add location relevant details to the pictures or waypoints in Google Earth.

COMPILATION OF "A DAY IN THE LIFE"

For a place for your average Jo Shmoe to go and view these days in the life, we recommend a Master blog (you can pick the one of your choice, we would recommend Google's Blogger) that is subscribed to all of the RSS feeds of the individual blogs. You can also include links to isismapping.org, and community relevant sites, and take advantage of Google's many site widgets and ease of customizing the interface.

WHAT COMES IN THE TOOLKIT

N95 Mobile Phone with weather protection case, charger, and identification code.

Isismapping.org integration

MORE ABOUT N95 APPLICATIONS AND SOLUTIONS

SIC! FTP:

each phone is connected with a particular user. Log in to SIC! FTP and save photos to

Public_html/sites/files/data/users/"your_name"/"data type." We want photos, KML files, and all media created for this project to be well organized so it can be found easily.

MOBILE WEB SERVER (MWS):

Here is how it works…

it is a port of the Apache webserver developed to run on mobile devices. You can surf to a site hosted on the Nokia phone running its MWS software. When the software is running on the phone, web requests can be made for its location. returned as XML and mapped as a marker on this map. With Google Maps AJAX implementation, some PHP and HTML, the location of the phone web server is displayed.

You can register your phone via its number and login at http://www.mymobilesite.net. You can create user accounts to allow customize access to content on your phone. The phone is alerted when a user logs in to a browser, and the browser is aware when the phone is connected. RSS feeds can be created to blog and photo content, which could allow for integration of many users on a map, in a blog, or simply keeping track of users' status.

GEODATABASE AND THEMATIC MAPPING ENGINE:

The Thematic Mapping Engine is an open source mapping solution created by a mapping guru that was nice enough to share his code! You can see his version at http://www.thematicmapping.org" This combination of PHP and a MySQL database allows for the generation of KMZ and KML files from shapefiles. Right now there is one geodatabase set up on isismapping.org and linked to via http://isismapping.org/ThemMapEng/TME_Example.php (you can access this page via "geodatabase" on isismapping.org. We can imagine each researcher or research project having its own geodatabase, all organized via links on one page, so site visitors can click on their data of choice for download.

DRUPAL

Drupal is a content management system (CMS) that runs on a MySQL database on a server. It is like the back end infrastructure that allows for many users to log in to a website, share files and collaborate. Drupal allows for administration of users, permissions, and content. It allows for the installation of different open source "modules" or plugins, so a good administrator can fashion the site to have any sort of usability that he/she desires.

SPORTSTRACKER

To use SportsTracker, go to Applications → Sports Tracker, and then click on "Create new workout" Select specifics with regard to Activity, Live Tracking, and Route (if you have one) and click OK in the bottom left. The app will start searching for GPS and tracking immediately. If you click "Options" in the lower left you have the choice of

Pausing, and eventually stopping your tracking. If you go to "training diary" and then open your selected workout, you can go to options in the lower left and click "Save as route" to add it as a route, "Export" to save it as a GPX, KML, CSV, or KMZ file, which can be emailed or saved on the phone for later upload.

LOCATION TAGGER

Runs automatically in the background of the phone to add geotagged location to your photos. The application should ask you if you want to tag the photo after it is taken. A green cross hair in the top left of the camera should indicate that it is running.

WHAT REMAINS TO BE IMPROVED FOR THIS PROJECT:

1) Writing code to deal with "extra" generated KMZ files generated by the thematic mapping engine

2) Creation of an interactive interface for real time manipulation of geodatabase data in the browse

3) A software solution for creating an distributing surveys with the Treo 650 SmartPhone

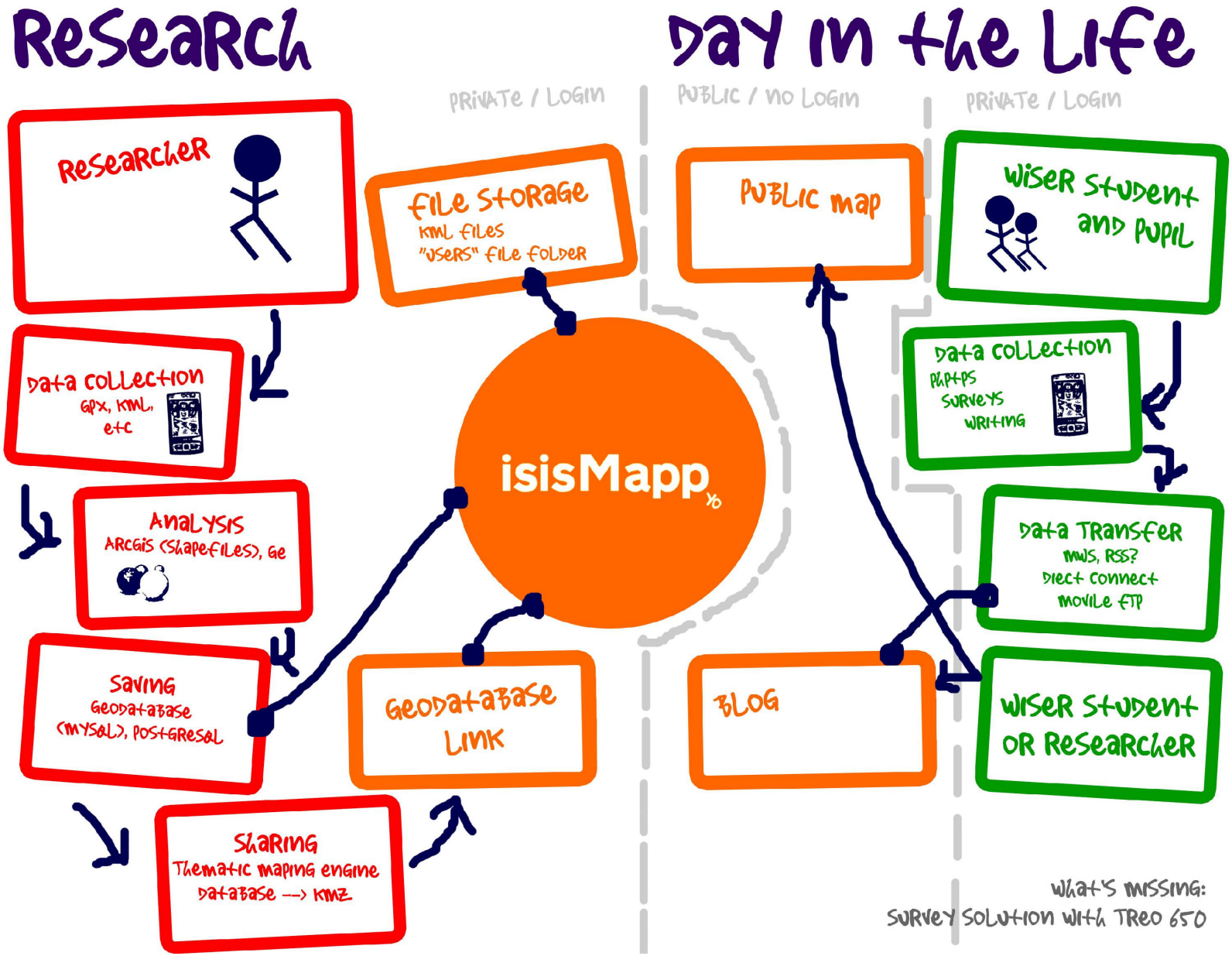
4) More playing and customization of the Mobile Web Server

5) An interface that allows for live importing of KML/KMZ files onto a map, and saving the map in a post

6) Still, no one has tested the ArcGIS → ZIGgis → geodatabase connection

APPENDIX

Overview of isismapping.org


Research
Day in the Life
PRIVATE / LOGIN
PUBLIC / no LOGIN
PRIVATE / LOGIN
Researcher
File Storage
KML files
"USERS" File Folder
Public map
Wiser Student and Pupil
Data collection
GPX, KML, etc
isisMapp
Data collection
PhotoS
Surveys
Writing
Analysis
ARCGIS (Shapefiles), Ge
Data Transfer
MMS, RSS?
Direct Connect
Movile FTP
Saving
Geodatabase
(MySQL), PostgreSQL
Geodatabase Link
Blog
Wiser Student or Researcher
Sharing
Thematic Maping engine
Database --> KMZ
What's missing:
Survey solution with Treo 650