APPENDIX B:
POTENTIAL USERS

MOBILE APPLICATION FOR GEOLOCATION OF IMAGERY AND COLLABORATION

MAGIC

Prepared for:
OR680/SYST798 Capstone Project course at George Mason University

Prepared By:
MAGIC Team
Jeff Carpenter
Thomas Haas
Dawin Wright
Erika Rojas Mejia

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Course Professor: Dr. Kathryn Laskey
Project Sponsor: Kurt Rogers, Integrity Applications Inc.

Potential User Analysis Process

In trying to determine who the target users of the MAGIC app would be, the team 1) established a framework to describe potential users, 2) brainstormed individually, and 3) reached consensus as a group.

The framework the team used to describe potential users was relatively simple: in separate fields of a spreadsheet, team members were to list who the user was, describe how they would use it, estimate a minimum required performance for that user, and rate the perceived profitability (Low, Medium, High) with a short rationale for the rating.

After a sizable list was produced by the individual team members (see table below), the team met to discuss the potential users identified, and to pick those potential users that would be targeted by our MAGIC app.

The team liked two 'groups' of potential users. One group, highlighted green in the table and referred to as the 'casual' or 'social' user group, are those that would use the app for personal pleasure, such as tourists, teenagers, and photographers. The other group, highlighted yellow in the table and referred to as the 'disaster' or 'emergency' response user group, are those that would use MAGIC as members of a disaster-response organization to help establish 'situational awareness' of the disaster or emergency.

The team decided to target a MAGIC application that could meet the needs of these two user groups. Each group had their own performance requirements (e.g. different error and confidence needs) and functional requirements (e.g. sharing with friends vs. a consolidated 'Central Command' workstation capability).

Potential User	How they would use it	Minimum required performance	Notes / questions	Perceived profitability
Geologists	To determine the rate of tectonic plate movement; e.g. this mountain is sinking at a rate of 2 feet per year.	Wikipedia says plates are moving anywhere from 10 to 160 mm / year		Low - not many geologists out there.
Climatologists / environmentalists	To determine how fast ice-caps are receding, or how fast a desert is growing, etc. Could be 'socialized': tourists take pictures of glaciers; pictures are shared and used to determine the rate of movement. Allows climatologist to collect information without travelling to the location(s) of interest.	Total WAG: within a couple of feet is probably fine.		Medium - climate-change is a popular topic; I could see a lot of environmentally-concerned people using the app to support the study of climate change.
Tourists	To know more about the images they took; e.g. the waterfall was ~50ft high, or the clearing was ~150ft wide.	Total WAG: within a couple of feet is probably fine.		Medium - lots of tourists, but does this technology offer much more than what a simple geo-tag on an image does? It does if they are actually measuring things.
Surveyors	To determine the size / shape of the land for future construction, etc. I was thinking to double check position of survey markers, for example my house was build four feet from where it was planned because a wood stick fell over and just got randomly stuck back in the ground.	Per Wikipedia: "surveyors are often held to a standard of one one-hundredth of a foot; about 1/8th inch". Inches	Perhaps feasible if many images are taken? Assumption is that more photos of the same 'point of interest' increases the accuracy of the geo-location estimate....	Low - not many surveyors out there.
RF Engineers	Identify the position of objects that are causing interference around an antenna.	Total WAG: within a couple of feet is probably fine.		Low - not many RF engineers out there.
Social networkers	To find & meet people who have seen & photographed the same objects / landmarks as you. E.g. you are out hiking / camping, and photograph a strange-looking tree - you can then find out if anyone else has seen that tree before, etc.	Total WAG: within a couple of feet is probably fine.		Medium - does this technology offer much more than what a simple geo-tag on an image does?
Disaster recovery / search-and-rescue personnel	To quickly establish a 'map' of a disaster-area. E.g. after an earthquake, MAGIC is used to locate points of interest such as an area only reachable by helicopter, etc A rescue team that must return (low fuel, etc), could image additional people to be picked up, would record what they looked like as well for the incoming team.	Total WAG: within a couple of feet is probably fine. I'd say meters for this	Wow Nice, I like this idea. I really like this idea as well...with all these disasters happening in the world right now, this can actually be very useful and many people might be interested	Low/Medium - not a lot of users out there, but with a GOV user base you could charge more per download.
Educators	To show & teach students how triangulation can be used in real-life.	Total WAG: within a couple of feet is probably fine.		
911 / emergency responders	To determine the location of dangerous situations. For example, if numerous people are taking pictures of a wild-fire and sending them to 911, they could build a map of where the fire is, how it's moving, etc.	Total WAG: within a couple of feet is probably fine.	If person A and person B both take a picture of a wildfire and send it to 911, how does 911 pick a point from both images to geo-locate? they would have to have a photoidentifiable object in each image that they KNOW is the same point.	Medium - I could see Apple or Google interested in incorporating this technology into their native iOS / Android camera-apps to support emergency responders...
Photographers	to determine distance to subject(s) and help determine if depth of field is set correctly	depends on distance to subject, for landscape photography likely meters		Medium - There are a lot people who think they are photographers
Ambert Alert System	To use as a support tool to determine possible location of a child. For example if a person believes he sees a missing child but does not have the time to write down location, he/she can take a picture and upload it / send it to ambert alert system and they will be able to get location & time from the picture	feet is probably fine		low
Farmers	To build/map exact locations of their lands/crops. For example a farmer with a huge land and multiple crops he/she can take a picture of different places to get exact locations and the app can save locations and give directions to/from saved locations			low