GPS-aided Auto Tours

Innovative Services Corporation
Product Proposal

Introduction

Innovative Services Corporation (ISC) intends to create a family of products for position-sensitive self-guide tours. The family of products will include multimedia playback software designed to run on a wide range of computing devices, such as iPhones, Androids, netbooks, laptops, etc. In general, any could be a playback device, as long it includes a global positioning systems (GPS). The playback device may be carry by the user or installed in a car, van, RV or bus.

Although GPS-aided tours could eventually have many different uses and target markets, ISC will focus initially on auto tours. A user taking a GPS-aided auto tour will buy or rent a playback device and place it in his/her car. The device maybe mount on the dashboard or simply rest on the center console. It will include a high-luminance touch screen, WIFI, G3 or G4, speakers and a microphone, and maybe plug into the cigarette lighter for power. The user will also buy or rent one or more tours for the areas that he/she wishes to explore.

As the user drives around, the GPS will sense his/her location, direction, and speed and send that data to the playback software. Using this data plus information about the user's preferences, the playback software will decide which multimedia presentation(s) to execute. Depending on the user's speed, the presentations may be interactive and allow the user to request more details. It may also allow the user to browse the presentation's content or replay any portion of it. Voice commands may be used for input. The follow scenario illustrates some of these features.

> Joe is a businessman traveling to Boston for a meeting with some clients. Because of his flight schedule, he has free afternoon for a little touring around the area. While at the car-rental agency in the airport, he learns that, for a small additional fee, he can take a GPS-aided tour of Boston's Historic North End. He decides to try it out by downloading a tour CD for the North End.
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> The next day, after all his meetings are over, Joe gets into his car and starts the GPS-aided tour. A voice come on and asks if he needs directions to the North End. He says sure and the player tells him how to get from his current location to the freeway that will take him to the North End. Joe follows the directions. As he gets close to the exit, the voice tells him to get into the right lane and take the next exit. As he does so, the voice points out that Haymarket square, a historic farmers market, can be seen off to the right. However, it doesn't give any further details at this time.
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> Joe continues to follow the voice's directions until he in the North End. While stopped at a light, the voice directs his attention to out some possible points of interest to the left and

to the right. Joe decides to head for the Old North Church. He pulls up in front and stops. At this point, the display comes on and short video gives a brief history of the church. Joe asks to see more about the events that took place there just before the Revolutionary War. The player displays a list of events and allows Joe to select which ones he wants to hear more about. Joe chooses two. The player then shows a couple more short videos and a narrated slide show. Joe asks to see one of the videos again. The player complies with the request. However, before it's finished, Joe pull out of the parking place and heads down a narrow street. The player stops the video. As Joe makes his way down the street (at a slow speed), the voice describes some of the historical events that took place there during the Revolutionary War period (since that what Joe was interested in before.)

Joe wind his way around the street of the North End, while the voice describe various points of interest along the way. After a while, Joe asks where he can find a good restaurant. The voice asks what kind of food he would like. Since Joe's in the North End, he says "Italian - of course". The player suggests a restaurant in the area and gives Joe directions on how to get there.

After diner, Joe heads back to the airport. The player provides directions for the fastest way there. When checking in the car, he finds out that he can keep the CD, free of charge, and that he can use it on his home computer to continue to explore the North End.

The proposed product family will also include some development tools that will assist tour designers in creating content-rich, multimedia presentations and correlating those presentations with physical locations, direction, and speed.

ISC will be using an off-the-shelf PDA with built-in GPS's for its initial product offerings. So, what it needs to create are the playback software and the tour development tools. The following sections list some of the main features for each of these software components.

Multimedia Playback

- Multimedia presentations can be associated with specific points or interests, neighborhoods, cities, or regions.
- Multimedia presentations can focus on history, culture, recreation, scenic beauty, nature, geology, or any other theme.
- Multimedia presentations can be nested; one presentation can link to any number of other presentations.
- The playback software must be able to select appropriate presentations based on the user's location, direction, and speed.
- When selecting a presentation, the playback software will also take into account the user's preferences. The user may state these preferences explicitly or the system may deduce them from prior requests.
- The playback software must choice appropriate output and input modes for the user's speed. For example, if the user is traveling more than 4 miles an hour (walking speed), the output and input modes should be voice only and input could come from the touch

pad or a pointer device. This speed threshold should be configurable, so it can be set to 0 if the playback device is installed in a vehicle.

- The multimedia presentations may be interactive, with various navigational options and hyper-links to other presentations.
- The multimedia presentations may include videos, slide-shows, audio clips, text, etc.
- The playback software must able to use a simulated position, in addition than an actual position, the user can do "what-if-I-go-hear" kinds of exploring.
- The playback software must allow the user to search for a presentation using keywords and then find out what location or point of interest it is associated with.

Tour Development

- Developers can build multimedia presentations from video clips, audio clips, and text.
- Developers can organize, classify, and link multimedia presentations
- Developers can extract area maps from large roadmap database
- Developers can associate presentations with areas or points on the map and constraint their execution to certain directions and speeds.
- The tools will be able to package all the material needed for a tour and create a master CD.