FlashFind - Lightning-Fast Search on Mobile Devices

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(PhysOrg.com) -- Fraunhofer researchers will be presenting fast and easy-to-use search technologies for mobile devices at the 2010 Mobile World Congress.

The suitcases are in the boot, the kids in the back seat - the only thing left to do as you get in the car is to quickly check the holiday route on the navigator. As you wait at the traffic lights, you select your favourite song on the MP3 player, while the passenger next to you sifts through her digital travel guide looking for the main tourist sights. Users of mobile devices like to access information on the go - anytime, anywhere.

But searching for digital information stored on today's devices is a complicated business: the search process is time consuming and using the keyboard or touchscreen can be a frustrating experience. With FlashFind, Fraunhofer Institute for Computer Architecture and Software Technology (FIRST, Germany) now offers search technologies that are specifically optimized for use on mobile devices. They allow swift, intuitive full-text search in locally stored digital data (e.g. on SD cards) on a variety of mobile clients (e.g. mobile phones, smartphones, navigators, media players and e-readers).

Today's innovative mobile platforms feature so-called incremental, prefix-based search functions such as Spotlight (iPhone) or Quick Search Box (Android). With these, users need only enter a few letters and the search results are displayed immediately, while the search is still in progress. But so far, the search features have been limited to fairly

small datasets, e.g. a phone's contacts database. For the first time, FlashFind enables users to search with similar convenience in very large datasets, such as are available today on mobile devices, too, thanks to rapid advances in storage media technology.

As a sample application, FIRST has implemented a search function for navigation devices that enables users to quickly locate streets, cities and points of interest (POIs). This involves searching digital map data of Western Europe containing some ten million entries. When entering the destination, users need not stick to predefined hierarchies (country, city, street). As with a modern web search engine, they simply type into a single input field everything they can think of concerning the destination (single-widget search). FlashFind allows convenient full-text search even on devices that lack a complete keyboard.

FlashFind does not require network access. Unlike web and desktop search engines, the Fraunhofer technology is optimized for mobile devices in terms of CPU and main memory. The prototype was implemented in C++ for Windows mobile smartphones and Linux devices. Patents have been applied for and the technology can be licensed. It is currently being integrated into a commercial navigator.

FlashFind was developed by FIRST as part of the Future Mobile Navigation Toolkit but can also be used separately. Besides the search function, the toolkit contains technologies for indoor routing, seamless navigation, map compression and TPEG services, which can be licensed individually or as a package or integrated into existing applications. At the Mobile World Congress, experts will be presenting sample applications for FlashFind and the Future Mobile Navigation Toolkit's components.

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