Storage capacity in consumer electronics devices has increased tremendously during the last few years – gigabyte storage is now common in e.g. hand-held computers and mobile phones. In combination with improved synchronization with desktop PCs and mobile e-mail people literally carry around thousands of mail, contacts, calendar data, electronic documents, photos, music, and even video clips in their pockets.

However, mobile devices come with small screens and miniscule keyboards, making the navigation and use of that data a challenge. In addition, retrieving all relevant data related to e.g. a meeting requires a lengthy search through several different applications.

Personal Assistant is an embedded application assisting the user by retrieving data from any data storage in the device in reply to a simple question in plain language. A query like “When is the next meeting with John Smith” returns a prompt reply fetched from the storage of the Calendar application. As a bonus to the user the Personal Assistant also fetches information from other applications that is related to the query. In the example the Personal Assistant may add “You have three e-mails from John Smith.”

Finding answers
Complicated user interfaces make finding information on a mobile device a challenge. It normally involves several steps just to access the application were the information resides and another set of taps, clicks, and commands to actually find what you are looking for. Dialogue Technologies’ Personal Assistant solves this problem by letting the user ask for the information they are looking for by simply asking a question in plain English.

The Personal Assistant automatically searches for answers to the query in all supported applications and presents the answer to the user.

Retrieving related information
Once an answer has been found the Personal Assistant searches all other applications in the phone for information related to the original query. A request for a phone number to a person may result in the Personal Assistant retrieving e-mail, meetings, and Power Point presentations from that person. An icon indicates if any related information was found.

An icon shows that there is more information in the phone that might be of interest to the user.
Features
The Personal Assistant supports the following features:

**Data value completion:** In manual mode the user can type e.g. *Find Ray by Mad* rather than *Find Ray of light by Madonna*. The system automatically fills in the missing part.

**Dialogue module:** Should there be large number of answers to a query the system initiates a dialogue with the user to narrow down the number of answers.

**Advanced search:** For the cases where there are no answers to a query the Personal Assistant searches for close matches.

**Advanced error handling:** For the cases where the system was unable to understand the query the user is given several options to search for an answer.

**Disambiguation:** When the answer to a query can reside in several applications the user is presented with a choice.

**Short commands:** The Personal Assistant can search the phone using one or a few words, retrieving all entries where the word(s) appears.

**Launcher:** When the answer to a query has been found you launch the corresponding phone application (e.g. calling a phone number you asked for) by pressing an icon.

Supported applications
The current release supports retrieving data from the calendar, address book, e-mail client, digital media files, pdf, digital images, and Microsoft Office documents.

Sample commands

**Calendar**
*When is the next meeting*
*Are there any meetings on 01-12-2007*

**Contacts**
*Show all my contacts at (company)*
*What is (person)’s address*

**Mail**
*Are there any unread emails*
*List emails from …*

**Documents**
*Show all documents written by (person)*
*Show all the documents prepared last week*

**Music files**
*Get ‘Ray of light’ with Madonna*
*List country songs from the sixties*

Characteristics

**Free format**
The user can use freely formulated questions and commands to get the information he/she wants - no training or manual is required! The Personal Assistant supports queries in English, French, Italian, German, Spanish, Swedish, and Danish.

**Voice or text**
Personal Assistant can be built with a voice or text interface. The voice interface will benefit from Personal Assistant’s capability to understand natural language – giving the speech recognition an unprecedented precision.

**No customization is required**
Personal Assistant has a built-in capability to understand all common queries and commands against PIM data and data files.

System requirements

**Operating Systems**

**Hardware requirements**
CPU: 200 MHz
Memory: ~12-15 MB RAM
Storage: 8 MB

Company
Dialogue Technologies AB (priv.) was founded 2001 to capitalize on years of world class research and development.

Dialogue Technologies is located in Kista, with a branch office in Heidelberg, Germany.

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Dialogue Technologies were awarded the prize Innovation of the year in 2002 for the technology behind the Personal Assistant.