WindSpring

WindSpring Patents Portfolio Summary

Introduction

This document provides an overview of WindSpring's patents. It covers patents that have been allowed and granted.

Online References

http://www.epoline.org/

Overview of WindSpring Patents

Six patents have been granted to WindSpring. These patents are:

1. "A Method for Storing and Retrieving Miniaturised Data" (Archbold et al) International Patent Application Number - PCT/AU00/01594, priority date of December 23, 1999.
   Granted in United States, Australia, Malaysia and Singapore. United States Patent US 7,185,018 B2 was granted on February 27th, 2007. The Australian Patent No. 777,314 was granted on February 3rd, 2005.

   Application current at EPO: EP2000986892/WO2000AU01594
2. "Data Compression with Edit-in-Place Capability for Compressed Data" (Archbold et al). United States patent US 7,102,552 B2 was granted on 5th September, 2006.
3. "Data Compression using a Stream Selector with Edit-in-Place Capability for Compressed Data" (Archbold et al). United States patent US 7,358,874 B2 was granted on 15th April, 2008.
4. "Data Compression using a Stream Selector with Edit-in-Place Capability for Compressed Data" (Archbold et al). United States patent US 7,616,138 B2 was granted on 10th November, 2009.
5. "A Method for Storing and Retrieving Miniaturised Data" (Archbold et al). United States patent US 7,877,364 B2 was granted on 25th January, 2011.
6. "Data Compression using a Stream Selector with Edit-in-Place Capability for Compressed Data" (Archbold et al). United States patent US 8,120,516 was granted on February 21, 2012.

A Method for Storing and Retrieving Miniaturised Data

The WindSpring Data Miniaturization patent covers the basic processes of WindSpring's Data Miniaturization Technology (DMT), including the processes required to create and access miniaturized data.

Data Miniaturization Technology (DMT) is a method which **encodes** data as Terminal Sequence Pointers. This enables operations on encoded data to be undertaken with the minimum amount of decoding and encoding. The encoded items, stored as Terminal Sequence Pointers (TSPs), maintain a one to one relationship to the original data. These TSPs can be deleted or inserted without affecting the integrity of the TSPs that precede or follow them. New data can be represented in terms of these TSPs or groups of these TSPs. New data can be represented in terms of a new Terminal Sequence Pointer, or a mixture of existing TSPs and a new TSP. When no relationship can be identified between the data and the TSPs then the data can be inserted literally as **exceptions**.

DMT uses a **dictionary** structure for collecting these Terminal Sequence Pointers into dictionaries which can be contained inside the encoded data (internal dictionary), stored separate from the encoded data (external dictionary) or a combination of both. A common external dictionary can be used by many encoded data sets. A composite dictionary may be constructed and used to point to a Terminal Sequence Pointer or set of Terminal Sequence Pointers contained in other dictionaries.

Data Compression with Edit-in-Place Capability for Compressed Data

The WindSpring Edit-in-Place (DMT-EIP) patent application extends the Data Miniaturization patent by extending the processes which allow miniaturized **data to be accessed, searched and edited** (including the mapping of search data items to the miniaturized pointers), and covers the processes which allow data to be edited without de-miniaturization (i.e. de-compression).

DMT-EIP uses a method for **segmenting** the encoded data into blocks to enable the encoded data to be manipulated. This segmentation method allows data blocks to completely contain the encoded data, partially contain the encoded data, or represent data that has been added to another block.

Further, DMT-EIP uses an **indexing** method to allow for fast access into a large encoded data item. DMT's indexing method allows for locating blocks of data in the encoded data, for updating the location of the blocks within the encoded data, and managing the location of the blocks which represent changes to the encoded data.

DMT-EIP's indexing method also allows for locating individual data items in the encoded data block, for updating the location of the encoded data within the encoded data blocks, and managing the location of the exceptions within the encoded data blocks and on the block boundaries.

DMT-EIP's indexing method allows individual data items to be located relative to the current location either forward of the current location or previous to the current location.

DMT-EIP's indexing method allows optimization for different sizes of encoded data. DMT-EIP's indexing method allows optimization for different encoded block sizes

Data Compression using a Stream Selector with Edit-in-Place Capability for Compressed Data

The WindSpring Stream Selector patent application extends the Edit-in-Place patent by defining the processes which allow miniaturized data to be organized according to the nature of the data (including the mapping of data items to different streams of data contained within the miniaturized pointers). It covers the processes which allow data to be separated into different streams according to data type, data sequence dictionary, exception data or exception data dictionary.

DMT-SSP enables operations on encoded data to be undertaken with the minimum amount of decoding and encoding required when the encoded items are stored as sequence identifiers which maintain a one to one relationship to the original data. These sequence identifiers can be grouped according to the type of data to be encoded. When they are grouped this way, the characteristics of the original data can determine the characteristics of the encoded data. The characteristics of the encoded data can include maximum sequence length, maximum number of sequences, and nature of the encoding sequence data in the sequence dictionary. New data can be represented in terms of a variety of sequence identifiers selected from members of any of these groups of sequences. These groups of sequences can be represented as separated sequence dictionaries.

A stream selector represents a pointer to the sequence dictionary and follows the data miniaturization pointer to pointer structure. This selector pointer extends the existing sequence pointer. Encoded data is therefore a mixture of sequence identifiers from each of the sequence dictionaries. When no relationship exists between the new data and the sequence identifiers then the data can be inserted literally as exceptions or as exceptions selected from and exception dictionary. The exceptions or exceptions dictionary can be identified by the stream selector. The exception dictionary can be constructed as a sequence dictionary or as a fixed-length-exception dictionary. Encoded sequence or exception data can be stored linearly as discovered, or may be stored separately in streams selected by the stream selector pointer. The selector is always stored linearly. Since the selector maintains a one to one relationship to the original data, the process is completely reversible.