

## Faster, better patent processing

April 9 2009

Processing patents is complex and time-consuming. Using semantic web technology, researchers have come up with a powerful tool to process patents faster and better.

By protecting the intellectual property rights of inventors and innovators, patents promote innovation and creativity, the lifeblood of Europe's ability to change with the times and remain competitive.

Given the huge importance of patents and the challenges in managing <u>patent</u> rights across an increasingly borderless Europe, it is no surprise that Member States are working towards creating an EU-wide patenting system known as the Community Patent. Couple that with the growing complexity of modern inventions and you get some idea of how laborious, complicated and difficult patent processing can be.

Quite simply, current patent data processing technologies - largely based on the assumption that a patent is a sequence of text blocks, enriched with drawings and diagrams - is not up to the present and future challenges.

## Patent processing bottlenecks

An inventor or innovator with a new idea who wishes to protect it can apply for a patent by submitting a patent application which describes, usually in great technical detail, the invention (this is known as the 'technical specification'). The interaction between the patent office and the applicant is known as 'patent prosecution', during which inventions



awaiting approval can claim a 'patent pending' status. If the application complies with the laws of the patent office concerned and the invention is not already patented, a patent will be granted.

Patent offices are obliged to investigate the claims made in the patent application. For instance, the European Patent Office (EPO) draws up a search report listing all the documents available to the Office that may be relevant to assessing the "novelty and inventiveness" of the application.

With the mushrooming growth of patent applications and the necessary complexity and thoroughness of both the application and assessment processes, many patent offices around the world are suffering under the strain of the workload. For example, the Japanese Patent Office's backlog jumped a quarter of a million in two years to reach more than 750,000 in 2005, while the US backlog was just short of 600,000. Despite its relatively efficient application process, even the EPO had over 285,000 applications pending in 2005.

"Huge backlogs change the nature of the patenting system and create ambiguities which can be exploited in ways unforeseen by those who established the patent system," the EPO's president, Alison Brimelow, once commented.

## **Changing semantics**

In some areas of life, semantics are often seen as hair-splitting distractions. This is certainly not the case when it comes to information management technology, suggest researchers in the EU-funded PATExpert project.

In fact, the <u>semantic web</u> - a more powerful internet in which, in the words of Tim Berners-Lee, the creator of the WorldWide Web,



machines talk to machines - can help streamline and speed up patent processing.

"The greatest success of PATExpert has been to initiate the change of the paradigm currently followed in patent processing services from textual to semantic," explains project coordinator Leo Wanner of the Universitat Pompeu Fabra, Spain.

With  $\in 2.5$  million in funding from the Sixth Framework Programme for research (2002-2006), the project has developed a multimedia content representation system for the retrieval, classification and multilingual generation of concise patent information, as well as for assessment and visualisation of patent material to meet the needs of all users, including patent examiners and inventors.

"The implications of the use of semantic technologies in the patent domain are far-reaching," says Wanner. "Semantic technologies used in PATExpert facilitate access to the contents of patent documentation and, thus, improve the accuracy of search, analysis and valuing - to mention just a few applications."

## **Patent success**

Only a few months after completion, PATExpert is already finding its way into the real world. "We are already performing general performance studies ordered by external parties for selected technologies," Wanner notes. "Furthermore, Brügmann Software (a partner in the consortium) is about to incorporate some of the PATExpert technologies into its flagship patent management product PatOrg."

And this is just the tip of the applications iceberg. "PATExpert, as a whole, is suitable for commercialisation, since it offers cutting-edge



technologies. Any of its individual technologies can also form either a stand-alone commercial application or be incorporated into other patent processing services," the project's coordinator enthuses.

Investors are also knocking at the consortium's door. "We are receiving inquiries from parties interested in helping us to bring PATExpert's technologies to the market," Wanner says.

In addition, several follow-up projects that seek to build on the work of PATExpert are either already under way - such as a project focusing on patent visualisation technologies - or have been proposed to funding agencies.

PATExpert was funded by the ICT strand of the Sixth Framework Programme for research.

Provided by <u>ICT Results</u>

Citation: Faster, better patent processing (2009, April 9) retrieved 27 April 2024 from <u>https://phys.org/news/2009-04-faster-patent.html</u>

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