For Immediate Release

Patented Innovation - Find it EZ Accelerates Software Changes

KELOWNA, BC – October 17th, 2018 - Kelowna based high tech company Find it EZ Software Corp., creator of an award-winning suite of software change management tools, in collaboration with the Laboratory for Software Modification Research (LSMR) at the University of Calgary is transforming how change impact analysis is performed. Find it EZ today announced that a provisional patent 62/675,876 entitled "Methods and systems to facilitate fast and maintainable change impact analysis through generation of modularized program dependency graphs" has been filed with the United States Patent and Trademark Office. The patent covers the design of an advanced search engine model for managing change in enterprise software applications. This proprietary technology is intended to provide software developers with a 360 degree view of data and control flow inter-connections across multiple programming languages, databases and business intelligence reporting tools in enterprise-class software systems, resulting in cost savings through more efficient change management, improved software design, better code quality control, minimized change risk and faster implementation of new software releases.

Many enterprise software systems are written in multiple programming languages, use various underlying database technologies and/or a variety of business intelligence reporting tools. These “best of breed” choices are based on the specialized features each provides, and leverage various technologies for intercommunicating between the desperate parts and layers, commonly referred to as a “software stack” in a heterogeneous system. Software development tools and underlying analysis techniques are typically created to operate in homogeneous environments, supporting only a single language, layer or “tier”. Alternatives such as generic text-based search tools are not designed to be “intelligent” in that they are neither syntax nor context aware of software language logic or flow. Thus, when planning or implementing changes to enterprise-scale heterogeneous software systems, use of common development and generic search tools leads to an error-prone, disconnected, and inefficient manual approach to change impact analysis.

Find it EZ's innovative modular program dependency graphs (mPDGs) are specifically designed for efficient, fine-grained change impact analysis across an entire software stack with a single, integrated tool. Change impact analysis may be described as the activity of identifying what to modify to accomplish a change, and/or identifying the potential consequences and estimated cost of each change alternative. Think of it as insight into “ripples caused by a change” … how big are those ripples, how far do they go? When a particular section of source code is changed, only corresponding directly impacted or linked parts of the mPDG model requires an update. During a search, intra-procedural impacts may be found by traversing linked mPDG nodes, regardless of language, while inter-procedural impacts may be computed on-demand by combining and applying each language’s unique syntax and semantic properties. This results in an efficient and complete model, with fast retrieval of all impacted references across all software layers and inter-connected programming languages used.

"*This novel patent pending technology offers an easy to use and effective tool for enterprise-class software change impact analysis*." said Ken Gnazdowsky, CEO of Find it EZ. "*We are confident that Find it EZ's expanding intellectual property assets, including this newly filed patent, will provide our products with long-term market exclusivity. This is particularly important as industry awareness of our technologies continues to grow and enables us to compete with software giants like IBM and Google, the only other companies currently holding patents in this niche market."* Mr. Gnazdowsky went on to say *"None of this would have been possible without the support of local tech incubator Accelerate Okanagan, Innovation Canada's Advisor Erik Kaas and NSERC's Frank Nolan who introduced us to Dr. Walker at the University of Calgary exactly four years ago to this day.*"

"*NSERC's Research Partnerships program supports collaborations that allow new scientific evidence to be applied to industrial needs*", said Dr. Marc Fortin, Vice-President, Research Partnerships at the Natural Sciences and Engineering Research Council of Canada (NSERC). "*We are proud to support this project that has the potential to boost employment opportunities and provide industrially-enriched, scientifically-worthy training to the next generation, helping to further strengthen and promote Canada's status as a world leader in the software engineering field.*"

The cost of software change impact analysis is extremely high; a global issue that Find it EZ and the researchers at the University of Calgary with support from the Government of Canada are focused on resolving by empowering software workers with the right tools. Annual software maintenance costs in the USA alone have been estimated to be more than **$70 billion**. Studies of software maintainers have shown that approximately **50%** of their time is spent on *understanding the code* they are responsible for maintaining, and over **90%** of the cost of a software application over it's lifespan is spent on maintenance, performing ongoing changes and enhancements. Commercial use of tools from Find it EZ have been demonstrated to improve productivity and reduce these costs by over **40%,** resulting in an average **savings of over 300 person-hours per developer, annually**. That's a potential **savings of over $28 billion** dollars, each and every year, in the USA alone … plus billions more worldwide.

"*This breakthrough result combines real-world practicality and deep theory.*" said Dr. Robert Walker, Director of the LSMR. "*We have finally been able to overcome a decades-old problem, saving a lot of time and money for industry, and it should result in higher quality software for all of us.*"

Integrating this innovative new patented technology into Find it EZ's suite of products will allow it to enter new markets and create new employment opportunities for high tech workers in Kelowna, BC, the Silicone Vineyard of northwestern Canada. It will also further establish Find it EZ Software Corp., the Laboratory for Software Modification Research, and Canada as world leaders in software change management innovation.

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About Find it EZ Software Corp.

Founded in 2010, Find it EZ creates productivity tools for software developers. Whenever changes are planned or made to the underlying database in any software application, it can be a challenge to find all referenced code that can be affected. Normally, each software layer or programming language would require time-consuming and disconnected analysis with a variety of independent tools. Find it EZ provides a full 360 degree view of the entire code-stack in a single integrated application. Case studies have shown that companies like Westinghouse, Sprint, The Mayo Clinic and Pan American Life Insurance, using solutions from Find it EZ to manage their software changes, have increased their productivity by 42% or more. FinditEZ Code Search received a Microsoft award for innovation in 2011.

About the Laboratory for Software Modification Research (LSMR)

The LSMR was established at the University of Calgary in 2002 under the leadership of Dr. Robert J. Walker. LSMR has investigated theoretical and empirical approaches to modifying software and understanding how it is modified, including award-winning work on software library migration, and other work on pragmatic software reuse, test driven reuse, test suite reuse, software repository mining, and aspect-oriented programming. Previous collaborations were established with IBM Canada and Chartwell Technology. LSMR alumni have gone on either to work in industry across North America or to become academics around the world.

About the Natural Sciences and Engineering Research Council (NSERC)

NSERC invests over $1.2 billion each year in natural sciences and engineering research in Canada. Our investments deliver discoveries—valuable world-firsts in knowledge claimed by a brain trust of over 11,000 professors. Our investments enable partnerships and collaborations that connect industry with discoveries and the people behind them. Researcher-industry partnerships established by NSERC help inform research and development and solve scale-up challenges. NSERC also provides scholarships and hands-on training experience for more than 30,000 post-secondary students and post-doctoral fellows. These young researchers will be the next generation of science and engineering leaders in Canada.

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