

**INTELLECTUAL PROPERTY
INVESTIGATION SERVICE**

THE FUTURE IS HERE



INTELLECTUAL PROPERTY INVESTIGATION SERVICE

IP SERVICE OVERVIEW

Datatek Applications Inc. is a multi-faceted technology organization that provides affordable, technical information about engineered products to customers interested in protecting and improving their intellectual property. Our engineers have the know how to tap into a product or systems intelligence to provide data and opinion specifically for intellectual property.

The rare and highly specialized skill of *Reverse Engineering* requires a thorough and detailed analysis of a product to uncover IP infringement. While it takes a talented engineer to design and develop a new product, to reverse engineer some aspect of that product and analyze it based on specific patent information requires additional skills.

IP SERVICES OFFERED

- Patent Portfolio Review
- Product and Documentation Procurement
- Product Reverse-Engineering

Datatek's experienced staff has been evaluating and examining products for patent licensing and litigation professionals in multiple technical disciplines. We combine our reverse engineering talents with years of experience in the design of hardware and software systems and a certain measure of sleuthing to produce accurate results for our clients.

Datatek's expertise encompasses many classes of the technology industry; electronics and electrical systems, computer systems, software, telecommunications, certification with industry standards and others are well within our realm.

Our engineers understand patents and how they relate to technology inside products. We understand claim language and how to precisely compare a product to a patent. We are experienced in *Patent Portfolio Review*, *Product and Documentation Procurement* and *Product Reverse Engineering*. Our project deliverables are based on client needs and range from a debriefing meeting with the client, to a formal report, which may include photographs and laboratory instrumentation data and analysis.

Datatek prides itself on providing high quality IP investigation services that are affordable.

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COMPANY OVERVIEW

Datatek Applications, Inc. was formed in April 1998 to provide state-of-art design services for the technology industry. The goal was to form a team of engineers who were experienced in all aspects of product design from architecture through to manufacturing. Recognizing that both end-users and product suppliers were aggressively moving toward technologies that would capitalize on the explosive growth of the Internet and wireless services, Datatek initially sought to be a high quality provider of design services to these communities.

Datatek has been able to meet that vision with the result that it has steadily grown to its current size of fifty engineers. Our skills span the full range of design disciplines which include network design, systems engineering, hardware and software architecture, hardware and software design, reverse engineering, quality assurance, physical design, compliance testing, manufacturing and customer support. Among these skills there is a strong emphasis on high performance, high reliability, and embedded system design

The Datatek organization has a successful track record as a developer of advanced technologies with over 20 products and systems delivered in 4 years, and responsibility for ongoing support for over a \$1 billion in deployed equipment. Our mature methodologies help our clients and partners realize their technology objectives sooner, with less overall expense, and with the quality of a proven design, development and manufacturing organization. Our customers include major communications manufacturers, telecommunications service providers, as well as technology equipment manufacturers.

The Datatek team is experienced. On average our engineers have over 11 years experience in design and development of telecommunications products, with our senior engineers averaging over 20 years experience. The management team averages over 12 years as managers in this field.

SAMPLE CASE STUDIES

Datatek engineers have evaluated and examined products for patent licensing and litigation professionals in multiple technical disciplines. Here are some examples of this work.

PC, PDA, AND HAND-HELD ACCESS DEVICES

Datatek engineers have been involved in acquisitions of numerous PC, PDA and Hand-held access devices from a variety of manufactures for analysis of a specific functionality of each device. Initially, an assessment of overall functionality and the human interface was performed on each device. Architectural reverse engineering of each product, ultimately expressed in block diagram format followed. Finally, specific functional blocks were evaluated where the construction of each block was examined in detail. Some cases involved physical reverse engineering and analysis of manufacturing methods or material aspects of the product. The results were presented as a formal report mapping the findings to the selected intellectual properties.

MP3 PLAYERS (MPEG AUDIO ENCODING/DECODING)

MP3 audio players were a subject of acquisition-and-analysis investigations. Each player's encoding/decoding algorithms required reverse engineering to uncover potential patent infringement.

PATENT EVALUATION, INCLUDING APPLICATION TO PRODUCT USE

Datatek engineers are experienced reviewing and assessing patent portfolios and in searching patent and other intellectual property databases to obtain materials to be used for a specific product or product area.

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COMPUTER GRAPHIC PROCESSORS

The operation and structure of a number of computer graphic processors were studied and evaluated. The information was expressed in a block diagram and mapped to selected intellectual properties.

DATA NETWORKING

Data networking equipment ranging from switches and routers to modems has been evaluated in the areas of, architecture, switching, queuing theory, cell transport, flow control, congestion, policing, quality of service, SNMP, and network management.

WIRELESS EQUIPMENT

Cellular telephones were another subject of acquisition-and-analysis investigation, including reverse engineering to identify and analyze potential patent infringement.

HARDWARE/SOFTWARE DESIGN

A well-grounded understanding of technical product design, development and manufacturing must precede the talents required to reverse engineer some aspect of a product. The Datatek hardware and software engineering team possesses state-of-the-art knowledge and is an experienced organization with a successful track record in product realization for the technology industry. From small to large, Datatek builds ASICs, FPGAs, single circuit packs and complete systems, providing hardware and software services to producers of metropolitan broadband networks, optical switching systems, gigabit/terabit LANs and WANs, 3G Wireless, network security and convergent media solutions

Here are some recent project examples.

- Pattern Matching Computation Accelerator
- 6 Gbit/s fast Ethernet packet switch
- 20 Gbit/s Crossbar switch Controller
- PCI Interface to Optical Data Link
- CCD Camera Controller
- IP Packet Flow Identifier
- Performance benchmarking: FPGA architecture vs. ASIC architecture
- Time slot interchange for H-MVIP (voice over ATM) design
- Systems Engineering, Architecture, multiple circuit pack and FPGA designs for Gbit Ethernet switch
- Architecture and design of SONET multiplexor used in cable distribution circuit designs and board support packages for telephone and broadband communications network
- Image Processing system platform
- Network Management sub-system for wireless products
- Processing platform for custom memory device

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MAINTENANCE AND PRODUCT SUPPORT

For the last 5 years, one of Datatek's core businesses, Network Support is an area where we have world-class know-how and experience. Interestingly, the skills set required for maintenance and product support overlaps with those needed for our Intellectual Property projects.

Consider skills such as:

- the ability to quickly absorb and learn about a new product or system architecture
- the ability to acquire detailed product documentation
- the ability to quickly gain an in-depth understanding of hardware and be able to replace outdated parts with current ones.
- the ability to plan and execute detailed testing of a product or system
- the ability to reverse engineer undocumented or poorly documented software and hardware.

IP SERVICES OFFERED

Datatek's Intellectual Property Service consists of Patent Portfolio Review, Product and Documentation Procurement and Product Reverse Engineering.

PATENT PORTFOLIO REVIEW

This review process ranges from initial screening assessment of a large number of patents according to criteria established in consultation with the client, to detailed, in-depth analysis of individual patents of particular interest. The deliverable consists of patent scores and comments from a portfolio or a formal report on each patent in the case of an in-depth analysis.

PRODUCT AND DOCUMENTATION PROCUREMENT

Procurement by "clean" legal means, either acquisition of particular products or product documentation specified by the client, or market-search for products relating to particular patents or claims identified by the client. The deliverable generally consists of the product or document requested by the client, or a written report listing potential target products in the case of the market-search.

PRODUCT REVERSE-ENGINEERING

This is an investigation of a client-specified product in the context of particular intellectual property. The product may be provided by the client or may be procured by Datatek. Reverse engineering may be limited to testing and operating the product in various modes, or may involve physical disassembly and analysis of the internal nature of the product, methods of operation, means and methods of fabrication, or other aspects specified by the client. The deliverable is established in consultation with the client, and ranges from a debriefing meeting with the client, possibly in the laboratory, to a formal report, which may include photographs and laboratory instrumentation data and analysis.

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