NATIONAL SECURITY AGENCY
TECHNOLOGY TRANSFER PROGRAM

Office of Research & Technology Applications

8 Steps TO LICENSING AN NSA PATENT

1 DISCOVER
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NSA's PLAs fueled **$346 million** in economic impact

TechLink and CU Business Research Division, 2000-2014

2 IMAGINE
Imagine fueling your business's growth with NSA technology, or building a business around NSA technology.

3 CONNECT
Contact us and move from idea to innovation!
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4 ENGAGE
Meet with our inventors.

5 PITCH
How will you use our technology?
Tell us your business plan.

1,330 jobs created as a result of NSA's Patent License Agreements (PLAs)

TechLink and CU Business Research Division, 2000-2014

6 NEGOTIATE
Let's make a deal! Sign a Patent License Agreement.

7 ACQUIRE
Get the know-how and bring your idea to life!

NSA's Technology Transfer Program (TTP) is small business friendly. Since 1982, the number of small businesses in the United States has **increased 49%**

sba.gov

8 CREATE
Create new products, services, businesses, and jobs. Strengthen the economy!

NSA's TTP has **proven economic impact.** Improving our economy creates stability, which increases national security

NATIONAL SECURITY AGENCY
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The National Security Agency's (NSA) Technology Transfer Program (TTP) is igniting innovation through Patent License Agreements (PLAs) with industry partners. Below is a sampling of the **many NSA technologies** available for license. To view a complete listing, visit us at *www.nsa.gov/techtransfer*. We may have exactly what your company needs to gain a competitive edge in the marketplace.

CONTACT US TO GET STARTED

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Boost your Business WITH OUR HOT TECHNOLOGIES

CYBER

AVAILABLE FOR LICENSING

Measuring Software Integrity with LKIM

The Linux Kernel Integrity Measurer (LKIM) verifies that running system software has not been modified and is authorized to run on the system. Unlike other system integrity technologies, LKIM does not require a database of known malware signatures and can detect modifications resulting from previously unknown attacks. While initially designed for Linux, there are variations that extend to other operating systems (including Microsoft Windows and the Xen Hypervisor). Proper use of this technology increases confidence that running systems have not actually been compromised, making the system more trustworthy for its intended purpose.

POTENTIAL APPLICATIONS:

- Measurement and attestation
- System monitoring
- Configuration control
- Protecting access to network resources
- Computer forensics

US Patents # 8,326,579 and # 7,904,278

BIG DATA

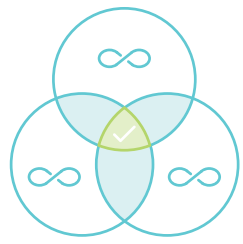
AVAILABLE FOR LICENSING

SAGA: Measuring Similarity between Data Sets

This invention measures similarities between sets of data. The data could be natural-language documents or articles, product descriptions, queries, computer code, metadata, or measurements from any real-world objects or processes. The technology can determine similarities between data sets without needing to know how they interact. Omitting duplicate pieces of data allows the technology to provide more accurate results. Additionally, this technology can provide patterns over time of the data entered. This invention takes a holistic view of the data to make recommendations that are more accurate than commonly used methods.

POTENTIAL APPLICATIONS:

- Pattern analysis for websites or applications
- Social network analysis
- Focused advertising
- Genetic analysis and forensic accounting



US Patent # 8,799,339

IOT MOBILITY

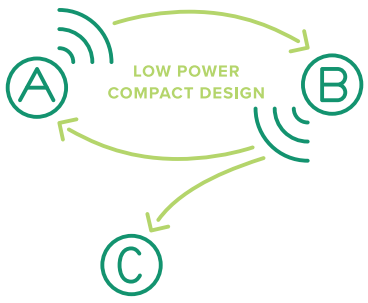
AVAILABLE FOR LICENSING

Wideband Retroreflector

This wideband retroreflector provides signal retransmission with low power in a compact design. This invention can significantly improve communications and remote-sensing applications including air traffic control, ground-to-satellite communications, and high-rate data transfer from radio-frequency identification (RFID) sensors. The system also improves communications by enhancing signals in areas with weak wireless reception. The compact design makes it easy to deploy and maintain in remote locations. Additionally, this low-powered technology handles high bandwidths more effectively than current systems.

POTENTIAL APPLICATIONS:

- Remote or dangerous area data collection
- Vehicle-to-vehicle, or vehicle-to-stationary object communication
- Unmanned aerial vehicle swarms
- Gamification



US Patent # 7,383,026

BIG DATA MOBILITY

AVAILABLE FOR LICENSING

Real-Time Simultaneous Identification of Multiple Voices

This technology provides multiple speaker identification by identifying sound in a way that uniquely mimics the ear-to-brain interconnection through human voice identification learning and recognition training. The object is real-time or faster voice identification needing only relatively simple computing resources. This invention looks for prosody matches (spectral patterns over time periods) that were trained into a software Artificial Neural Network (ANN)—based model. The Infinite Impulse Response (IIR) filter patent can be singularly applied to other uses as well.

POTENTIAL APPLICATIONS:

- Voice recognition for home automation
- Sound detection for security systems
- Assistive technology
- Audio forensics

US Patents # 8,442,825 and # 8,396,912

BIG DATA

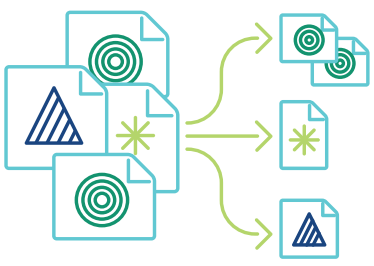
AVAILABLE FOR LICENSING

Modeling Single-Class Data from Multi-Class Data

This extensible technology isolates data (text, image, and voice) representing a target class from heterogeneous data representing multiple data categories of the same type. The method may be applied to identify speech from one speaker in audio containing several other speakers, and extends to language and gender identification and image and text applications. By auto-selecting data representing a particular class from multi-class data, nonessential artifacts may be removed from models trained on multi-class data, thereby enhancing detection and identification capabilities.

POTENTIAL APPLICATIONS:

- Speech applications (speaker/language recognition, gender identification)
- Improved classification accuracy in pattern recognition
- Biometric data discrimination



US Patent # 7,454,337

MOBILITY

AVAILABLE FOR LICENSING

Improving Maritime Communications

These technologies enhance the signals and systems used for maritime communications. The first uses a demodulator to improve the Automatic Identification System (AIS) used for ship tracking, collision avoidance, and search and rescue. The demodulator can function on a signal that transmits data at a known baud rate but has an unknown carrier frequency, unknown carrier phase, and unknown preamble, reducing the risk of at-sea collisions. The second technology improves demodulating AIS signals without requiring user-specific training codes or an equalizer, which enhances favorable signal qualities and decorrelates interfering signals.

POTENTIAL APPLICATIONS:

- Ship or drone tracking and collision avoidance
- Water-based search and rescue
- Port security

US Patents # 8,665,997 and # 8,275,077