Cybersecurity Partnership Meeting

United States Patent and Trademark Office
November 14, 2014 in Menlo Park, CA

Welcome

Mohammad H. Qayoumi
President of San Jose State University

Opening Remarks

Michelle Lee

Deputy Under Secretary of Commerce and Deputy Director of the USPTO

Overview of Cybersecurity Patent Initiatives

John Cabeca, Director, Silicon Valley USPTO

Nestor Ramirez, Director, Technology Center 2400

Kevin Stine

National Institute of Standards and Technology

United States Patent and Trademark Office

November 14, 2014 in Menlo Park, CA

Framework for Improving Critical Infrastructure Cybersecurity

US PTO Cybersecurity Partnership Meeting

November 14, 2014

Kevin Stine
Kevin.Stine@nist.gov

National Institute of
Standards and Technology
U.S. Department of Commerce

National Institute of Standards and Technology (NIST)

About NIST

- NIST’s mission is to develop and promote measurement, standards, and technology to enhance productivity, facilitate trade, and improve the quality of life.
  - 3,000 employees
  - 2,700 guest researchers
  - 1,300 field staff in partner organizations
  - Two main locations: Gaithersburg, Md and Boulder, Co

NIST Priority Research Areas

Advanced Manufacturing

IT and Cybersecurity

Healthcare

Forensic Science

Disaster Resilience

Cyber-physical Systems

Advanced Communications

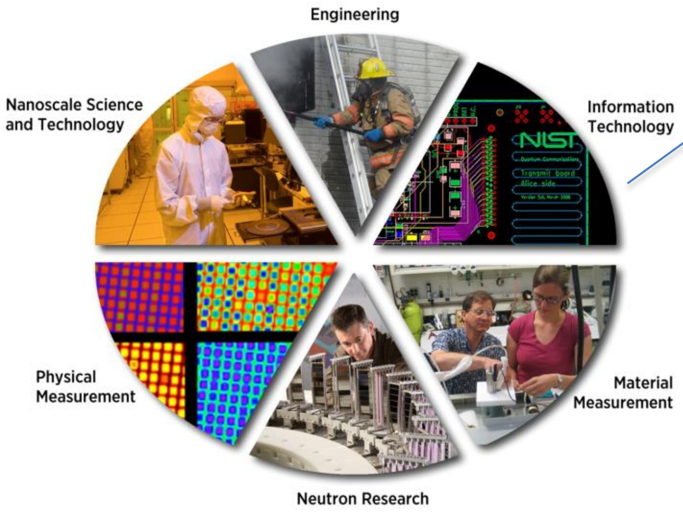
The Role of NIST

- The National Institute of Standards and Technology's mission is to stimulate innovation, foster industrial competitiveness, and improve the quality of life.

- Role in cybersecurity began in 1972 with the development of the Data Encryption Standard – began when commercial sector also has a legitimate need for cryptography, including in ATMs.

- Using widely-accepted standards helps create competitive markets around market need through combinations of price, quality, performance, and value to consumers. It then promotes faster diffusion of these technologies throughout industry.

Computer Security Division



The Computer Security Division provides standards and guidelines, tools, metrics, and practices to protect information and information systems.

Biometrics – Software Assurance – Domain Name Security – Identity Management – FISMA – Security Automation – National Vulnerability Database – Configuration Checklists – Digital Signatures – Risk Management – Authentication – IPv6 Security Profile – Supply Chain – NICE – Health IT Security – Key Management – Secure Hash – PKI – Privacy Engineering– Smart Grid – Continuous Monitoring – Small Business Outreach – Mobile Devices – Standards – Cloud Computing – Usability – NSTIC – Passwords – Hardware Security – Electronic Voting – Wireless – Security Awareness – Vulnerability Measurement – Security Metrics – Public Safety Communications

Executive Order:
Improving Critical Infrastructure Cybersecurity

"It is the policy of the United States to enhance the security and resilience of the Nation's critical infrastructure and to maintain a cyber environment that encourages efficiency, innovation, and economic prosperity while promoting safety, security, business confidentiality, privacy, and civil liberties"

President Barack Obama

Executive Order 13636, *Feb. 12, 2013*

- The National Institute of Standards and Technology (NIST) was directed to work with stakeholders to develop a voluntary framework for reducing cyber risks to critical infrastructure
- Version 1.0 of the framework was released on Feb. 12, 2014, along with a roadmap for future work

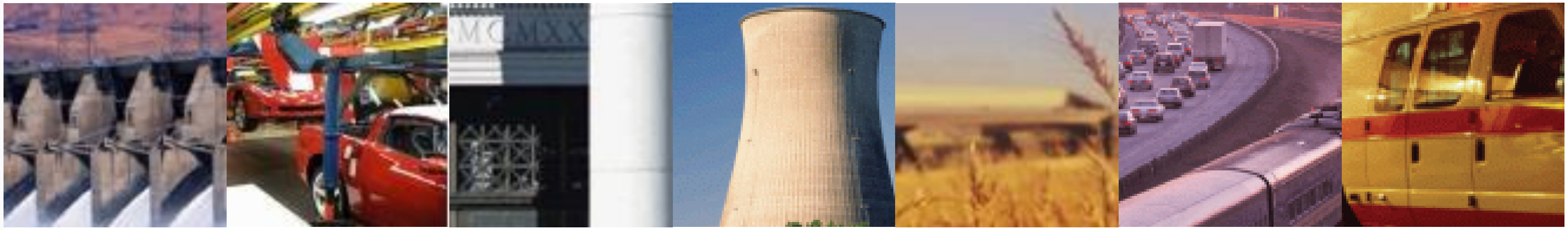
Based on the Executive Order, the Cybersecurity Framework Must...

- Include a set of standards, methodologies, procedures, and processes that align policy, business, and technological approaches to address cyber risks

- Provide a prioritized, flexible, repeatable, performance-based, and cost-effective approach, including information security measures and controls, to help owners and operators of critical infrastructure identify, assess, and manage cyber risk

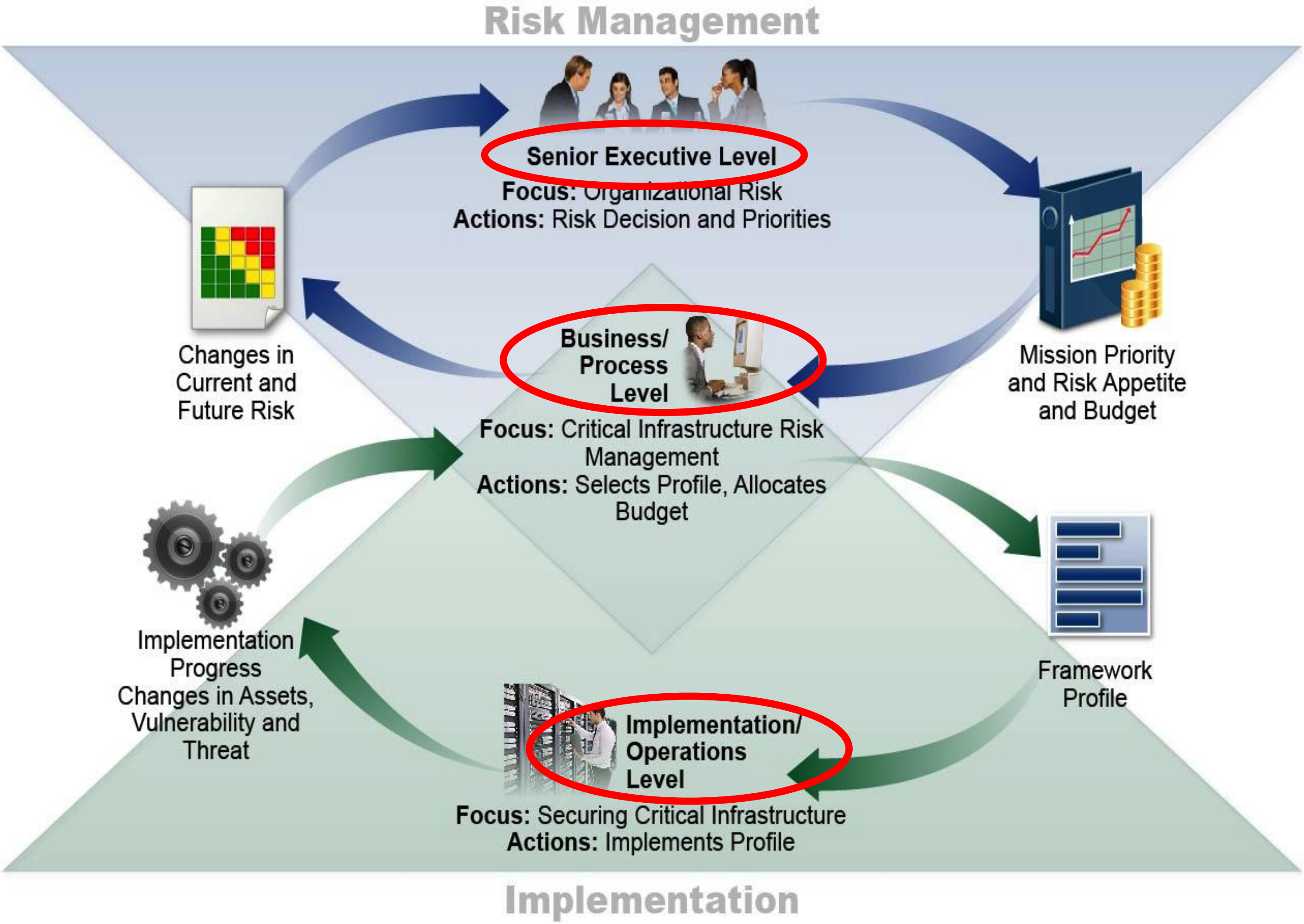
- Identify areas for improvement to be addressed through future collaboration with particular sectors and standards-developing organizations

The Cybersecurity Framework Is for Organizations…



- Of any size, in any sector in the critical infrastructure
- That already have a mature cyber risk management and cybersecurity program
- That don’t yet have a cyber risk management or cybersecurity program
- With a mission of helping keep up-to-date on managing risk and facing business or societal threats

It must apply from Executives to Operations



Risk Management

Senior Executive Level

Focus: Organizational Risk
Actions: Risk Decision and Priorities

Changes in Current and Future Risk

Mission Priority and Risk Appetite and Budget

Business/ Process Level

Focus: Critical Infrastructure Risk Management
Actions: Selects Profile, Allocates Budget

Implementation Progress Changes in Assets, Vulnerability and Threat

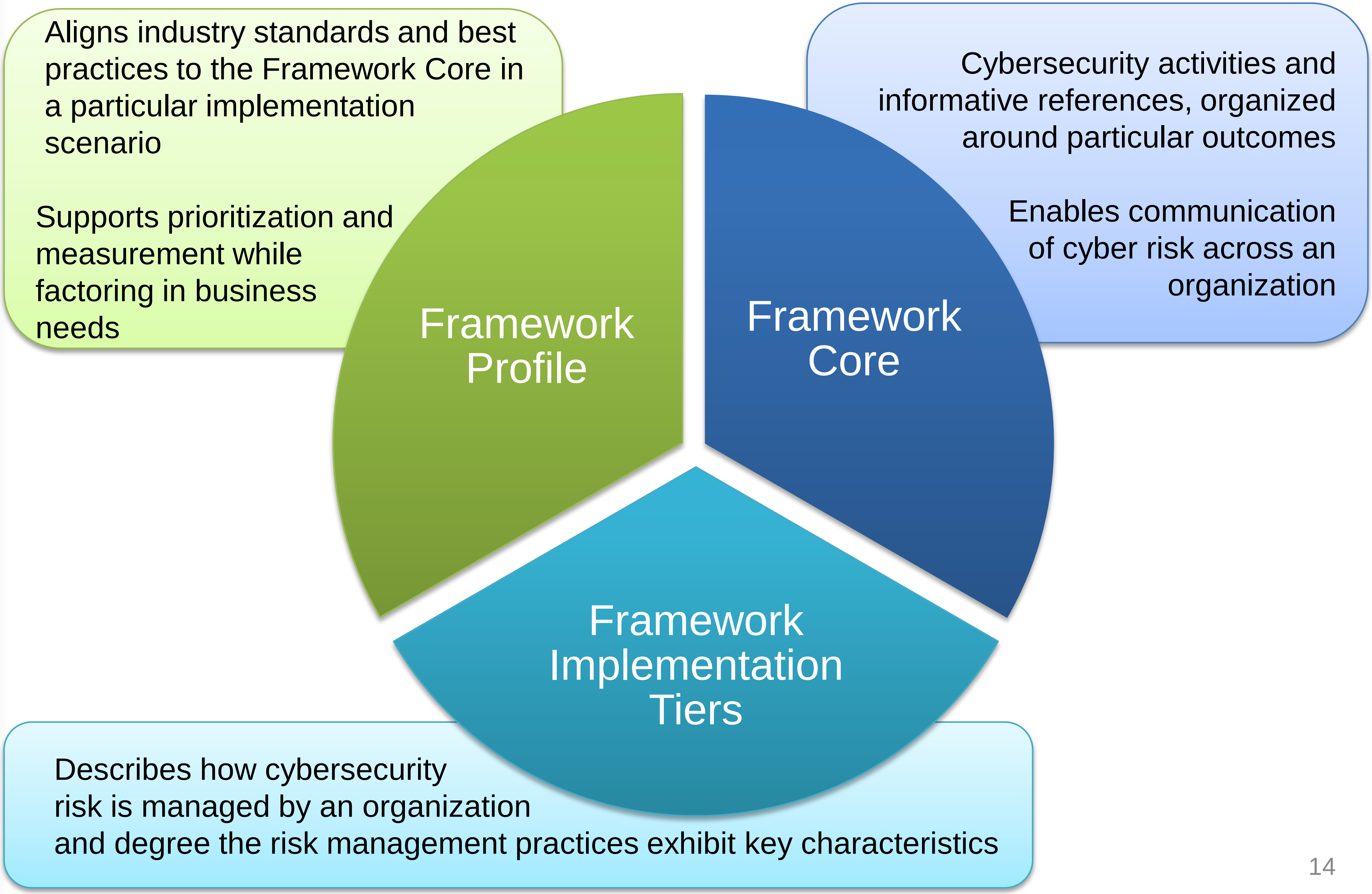
Framework Profile

Implementation/ Operations Level

Focus: Securing Critical Infrastructure
Actions: Implements Profile

Implementation

Framework Components



Aligns industry standards and best practices to the Framework Core in a particular implementation scenario

Supports prioritization and measurement while factoring in business needs

Framework Profile

Cybersecurity activities and informative references, organized around particular outcomes

Enables communication of cyber risk across an organization

Framework Core

Framework Implementation Tiers

Describes how cybersecurity risk is managed by an organization and degree the risk management practices exhibit key characteristics

Framework Core

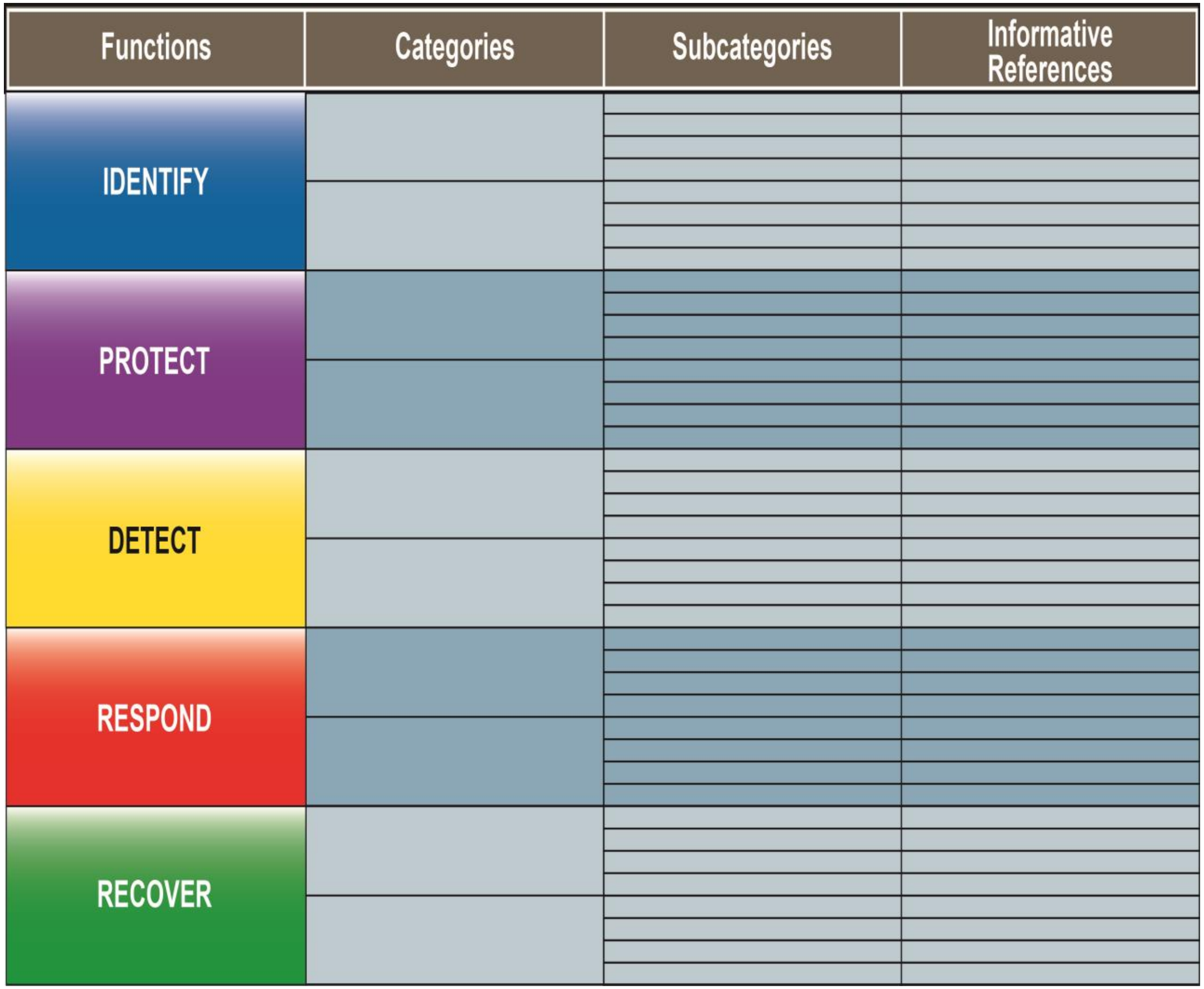
What assets need protection?

What safeguards are available?

What techniques can identify incidents?

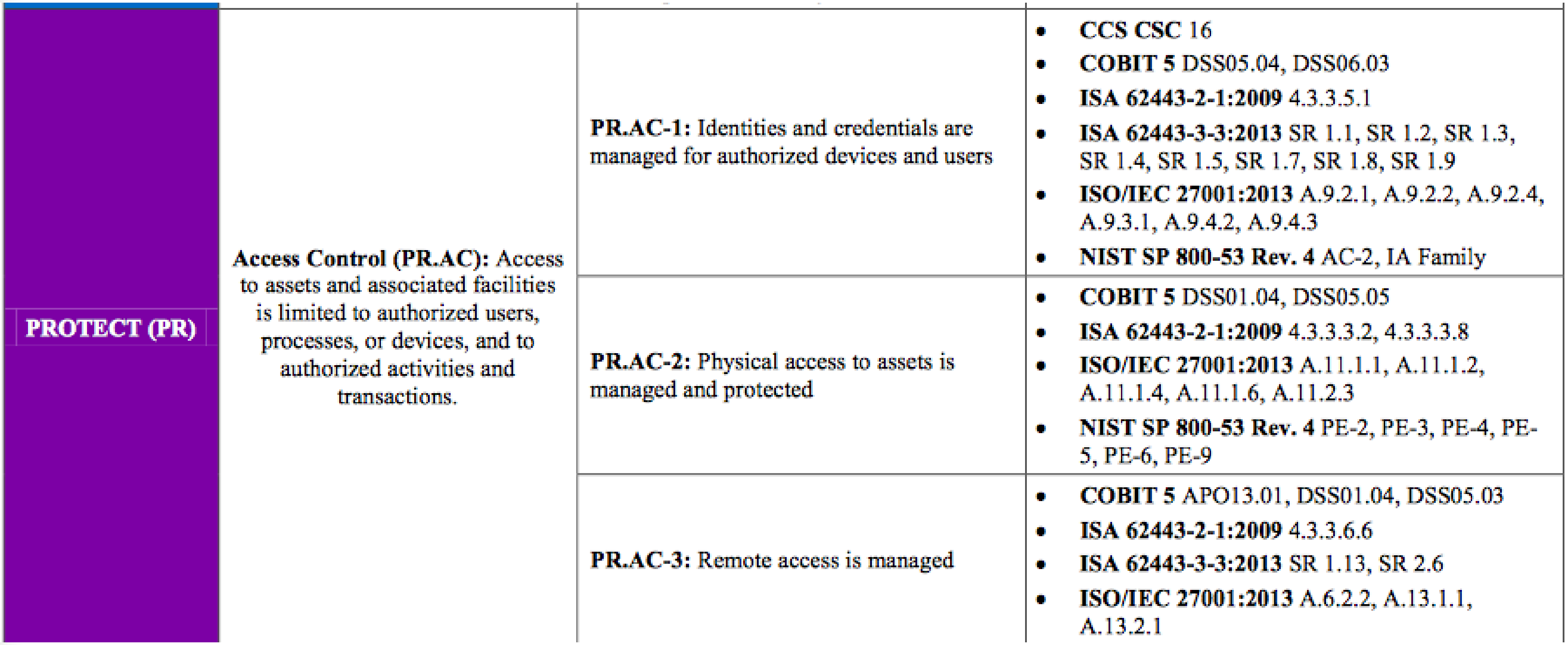
What techniques can contain impacts of incidents?

What techniques can restore capabilities?



Functions	Categories	Subcategories	Informative References
IDENTIFY			
PROTECT			
DETECT			
RESPOND			
RECOVER			

Framework Core - Sample



PROTECT (PR)	**Access Control (PR.AC):** Access to assets and associated facilities is limited to authorized users, processes, or devices, and to authorized activities and transactions.	**PR.AC-1:** Identities and credentials are managed for authorized devices and users	• **CCS CSC** 16 • **COBIT 5** DSS05.04, DSS06.03 • **ISA 62443-2-1:2009** 4.3.3.5.1 • **ISA 62443-3-3:2013** SR 1.1, SR 1.2, SR 1.3, SR 1.4, SR 1.5, SR 1.7, SR 1.8, SR 1.9 • **ISO/IEC 27001:2013** A.9.2.1, A.9.2.2, A.9.2.4, A.9.3.1, A.9.4.2, A.9.4.3 • **NIST SP 800-53 Rev. 4** AC-2, IA Family
		PR.AC-2: Physical access to assets is managed and protected	• **COBIT 5** DSS01.04, DSS05.05 • **ISA 62443-2-1:2009** 4.3.3.3.2, 4.3.3.3.8 • **ISO/IEC 27001:2013** A.11.1.1, A.11.1.2, A.11.1.4, A.11.1.6, A.11.2.3 • **NIST SP 800-53 Rev. 4** PE-2, PE-3, PE-4, PE-5, PE-6, PE-9
		PR.AC-3: Remote access is managed	• **COBIT 5** APO13.01, DSS01.04, DSS05.03 • **ISA 62443-2-1:2009** 4.3.3.6.6 • **ISA 62443-3-3:2013** SR 1.13, SR 2.6 • **ISO/IEC 27001:2013** A.6.2.2, A.13.1.1, A.13.2.1

Framework Profile

- Alignment of Functions, Categories, and Subcategories with business requirements, risk tolerance, and resources of the organization

- Enables organizations to establish a roadmap for reducing cybersecurity risk that is well aligned with organizational and sector goals, considers legal/regulatory requirements and industry best practices, and reflects risk management priorities

- Can be used to describe current state or desired target state of cybersecurity activities

SUPPLIER
RC
RS
DE
PR
ID
BUYER
FRAMEWORK PROFILE

Framework Implementation Tiers

- Feedback indicated the need for the Framework to allow for flexibility in implementation and bring in concepts of maturity models.

- Responding to feedback, Framework Implementation Tiers were proposed to reflect how an organization implements the Framework Core functions and manages its risk.

- The Tiers are progressive, ranging from Partial (Tier 1) to Adaptive (Tier 4), with each Tier building on the previous Tier.

- The Tier characteristics are defined at the organizational level and are applied to the Framework Core to determine how a category is implemented.

How to Use the Cybersecurity Framework

The Framework is designed to complement existing business and cybersecurity operations, and can be used to:

- Understand security status
- Establish / Improve a cybersecurity program
- Communicate cybersecurity requirements with stakeholders, including partners and suppliers
- Identify opportunities for new or revised standards
- Identify tools and technologies to help organizations use the Framework
- Integrate privacy and civil liberties considerations into a cybersecurity program

What’s Next: Areas for Development, Alignment, and Collaboration

- The Executive Order calls for the framework to “identify areas for improvement that should be addressed through future collaboration with particular sectors and standards-developing organizations”
- High-priority areas for development, alignment, and collaboration were identified based on stakeholder input:
  - Authentication
  - Automated Indicator Sharing
  - Conformity Assessment
  - Cybersecurity Workforce
  - Data Analytics
  - Federal Agency Cybersecurity Alignment
  - International Aspects, Impacts, and Alignment
  - Supply Chain Risk Management
  - Technical Privacy Standards

What's Next: Using the Cybersecurity Framework

- Organizations—led by their senior executives—are using the framework now

- Industry groups, associations, and non-profits are playing key roles in assisting their members to understand and use the framework by:
  - Building or mapping their sector's specific standards, guidelines, and best practices to the framework
  - Developing and sharing examples of how organizations are using the framework

- NIST is committed to helping organizations understand and use the framework, getting feedback on initial use.

- Workshop was held on October 29th and 30th in Tampa, FL.

Key Points about the Framework

- **It's a framework, not a prescription**
  - It provides a common language and systematic methodology for managing cyber risk
  - It does not tell an organization *how* much cyber risk is tolerable, nor does it claim to provide "the one and only" formula for cybersecurity
  - Having a common lexicon to enable action across a very diverse set of stakeholders will enable the best practices of elite organizations to become standard practices for everyone
- **The framework is a living document**
  - It is intended to be updated over time as stakeholders learn from implementation, and as technology and risks change
  - That's one reason why the framework focuses on questions an organization needs to ask to manage its cyber risk. Practices, technology, and standards will change over time—principals will not

National Cybersecurity Center of Excellence (NCCoE)

- Established in 2012 as part of NIST's Information Technology Laboratory, the NCCoE is dedicated to furthering innovation through rapid identification, integration, and adoption of practical, standards-based cybersecurity solutions
- The NCCoE seeks problems that are:
  - Broadly applicable across much of a sector, or across multiple sectors
  - Narrow enough to be addressed through one or more reference designs built in NCCoE labs
  - Complex enough that our reference designs will need to be based on the combination of multiple commercially available technologies
- Operational Model focuses on two kinds of reference designs:
  - Sector-specific use cases
  - Sector-neutral building blocks (technology-specific)

Where to Learn More and Stay Current

The *Framework for Improving Critical Infrastructure Cybersecurity*, the *Roadmap*, and related news and information are available at:

- http://www.nist.gov/cyberframework
- Email: cyberframework@nist.gov

National Cybersecurity Center of Excellence (NCCoE):

- http://nccoe.nist.gov

Computer Security Resource Center:

- http://csrc.nist.gov

Q&A

Nestor Ramirez

Director, Technology Center 2400

United States Patent and Trademark Office

November 14, 2014 in Menlo Park, CA

Cybersecurity Partnership

Information Session on Cybersecurity Patent Application and Examination

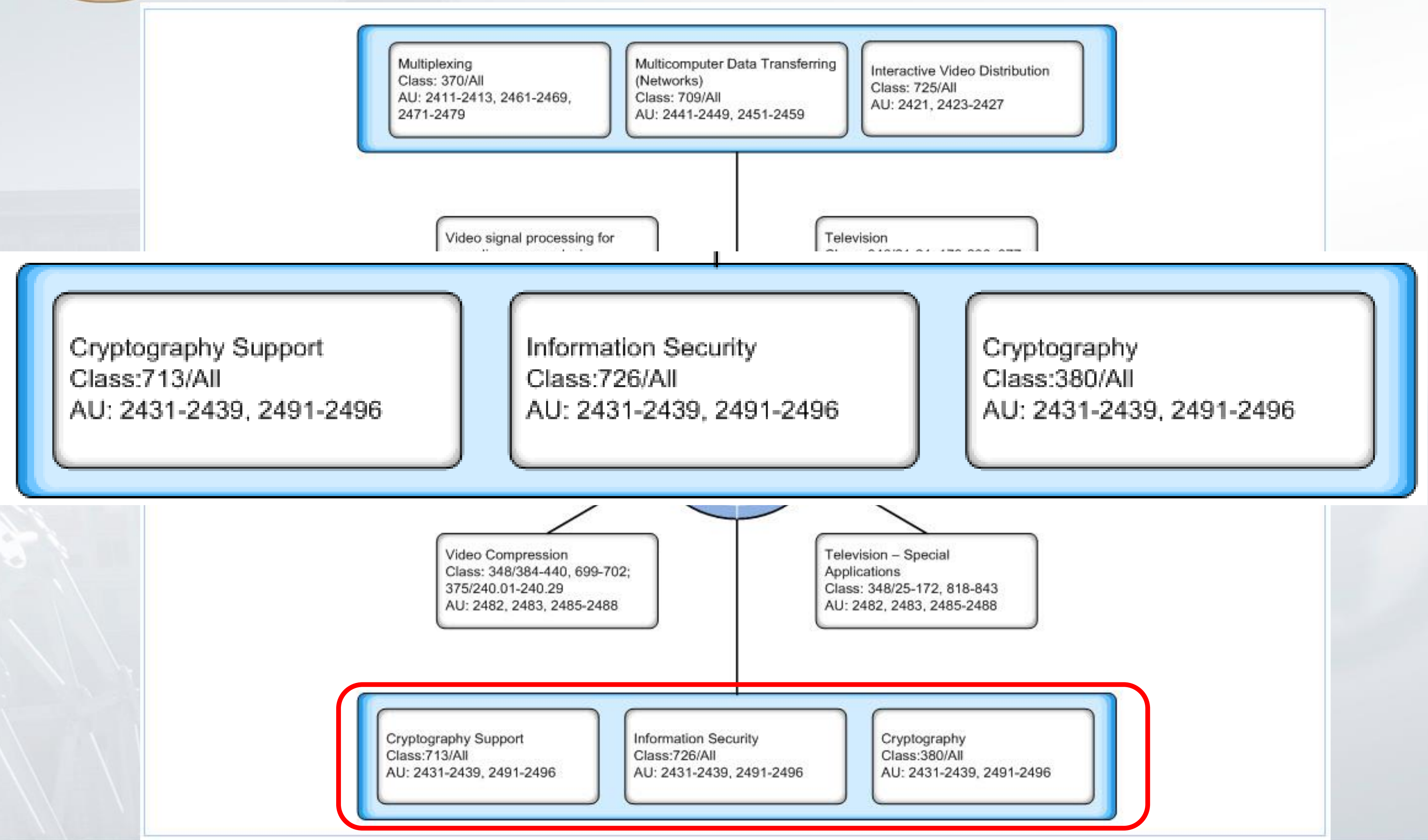
United States Patent and Trademark Office

November 14, 2014 in Menlo Park, CA

Who Are We?

1600	• Biotechnology and Organic Chemistry
1700	• Chemical and Materials Engineering
2100	• Computer Architecture and Software
2400	• Networking, Multiplexing, Cable, and Security
2600	• Communications
2800	• Semiconductors, Electrical and Optical Systems and Components
2900	• Designs
3600	• Transportation, Construction, Electronic Commerce, Agriculture, National Security, and License & Review
3700	• Mechanical Engineering, Manufacturing and Medical Devices/Processes

Information Security and Cryptography



Multiplexing
Class: 370/All
AU: 2411-2413, 2461-2469, 2471-2479

Multicomputer Data Transferring (Networks)
Class: 709/All
AU: 2441-2449, 2451-2459

Interactive Video Distribution
Class: 725/All
AU: 2421, 2423-2427

Video signal processing for

Television

Cryptography Support
Class:713/All
AU: 2431-2439, 2491-2496

Information Security
Class:726/All
AU: 2431-2439, 2491-2496

Cryptography
Class:380/All
AU: 2431-2439, 2491-2496

Video Compression
Class: 348/384-440, 699-702; 375/240.01-240.29
AU: 2482, 2483, 2485-2488

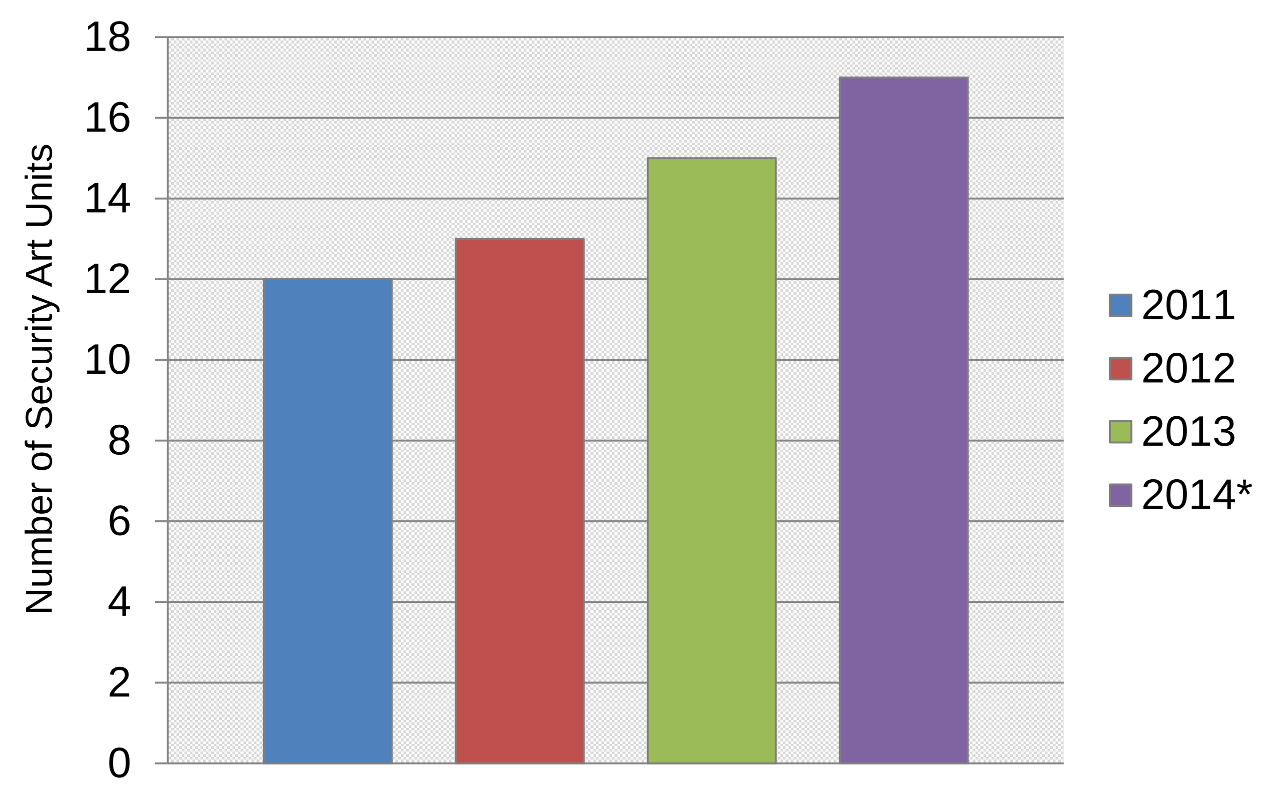
Television – Special Applications
Class: 348/25-172, 818-843
AU: 2482, 2483, 2485-2488

Cryptography Support
Class:713/All
AU: 2431-2439, 2491-2496

Information Security
Class:726/All
AU: 2431-2439, 2491-2496

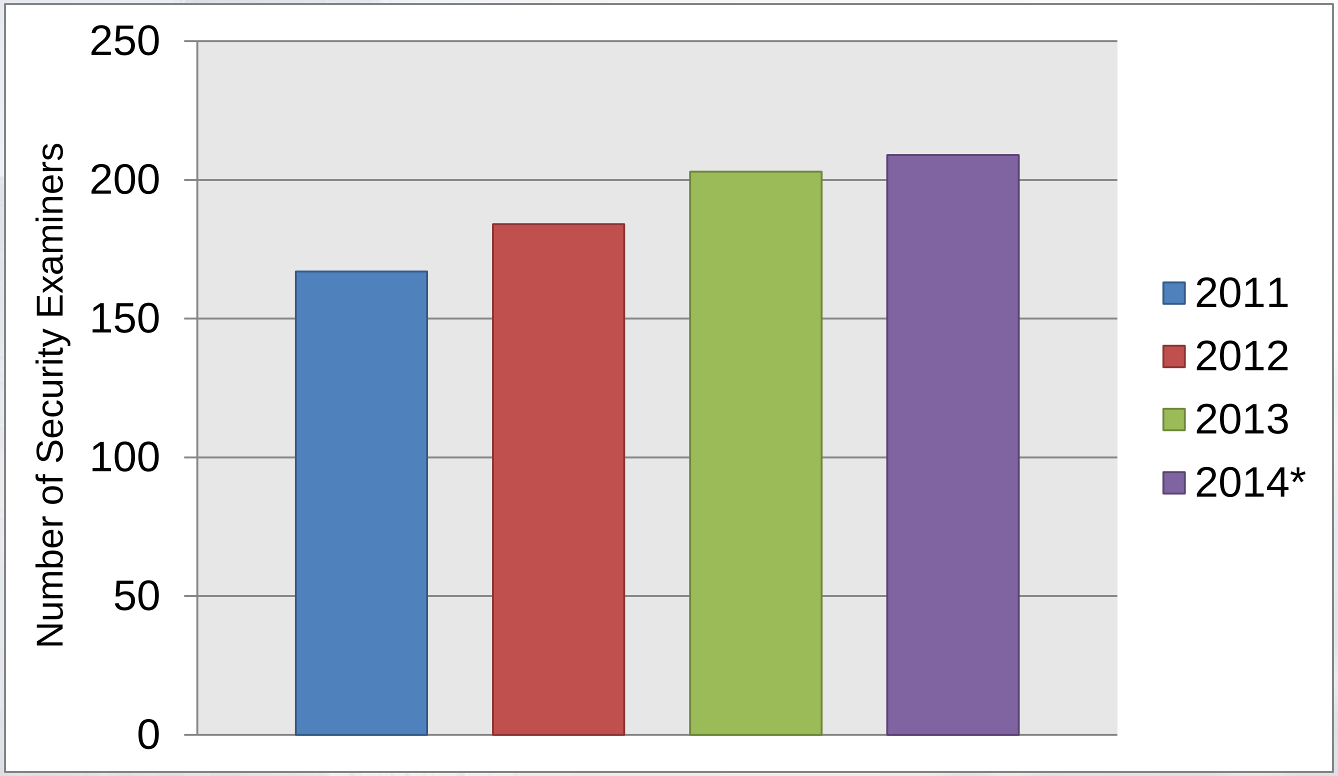
Cryptography
Class:380/All
AU: 2431-2439, 2491-2496

Our Workforce - Information Security and Cryptography Art Units



*As of October 20, 2014

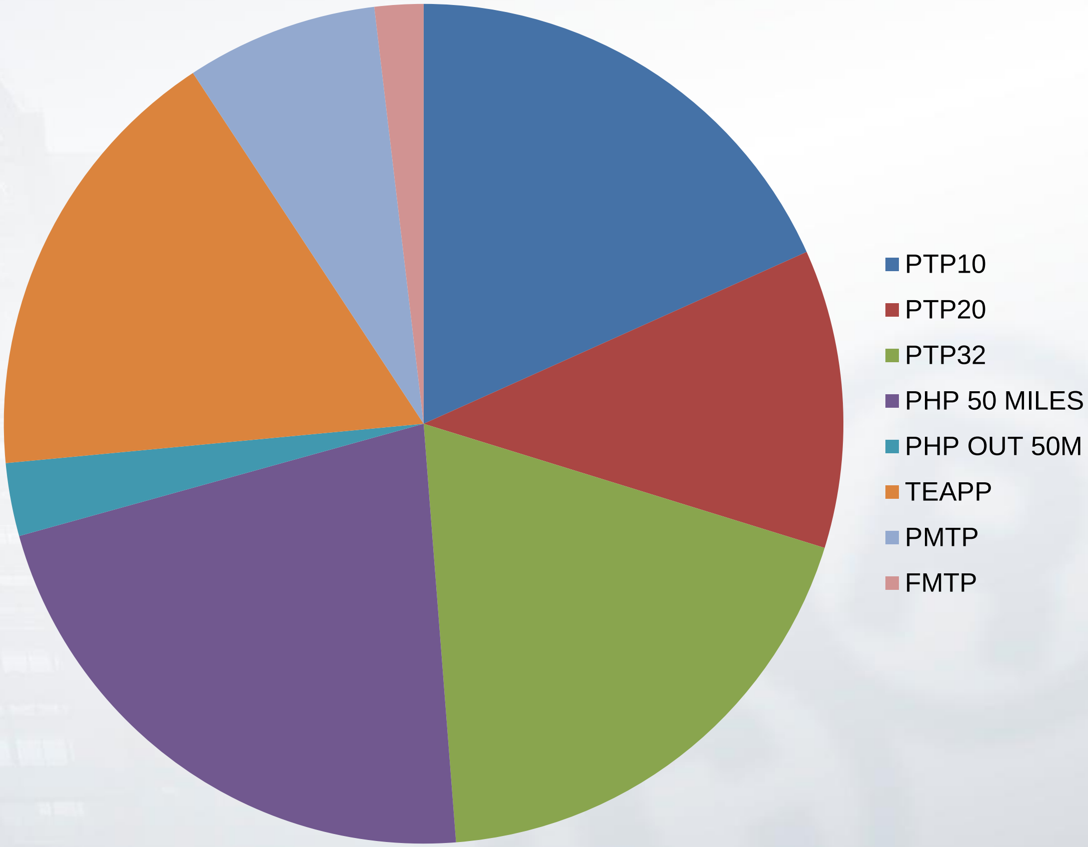
Our Workforce - Information Security and Cryptography Patent Examiners



*As of October 20, 2014

Teleworking in TC 2400

PROGRAMS	EXAMINERS and SPEs
PTP10	156
PTP20	98
PTP32	162
PHP 50 MILES	187
PHP OUT 50M	24
TEAPP	147
PMTP	63
FMTP	16
TOTAL	853



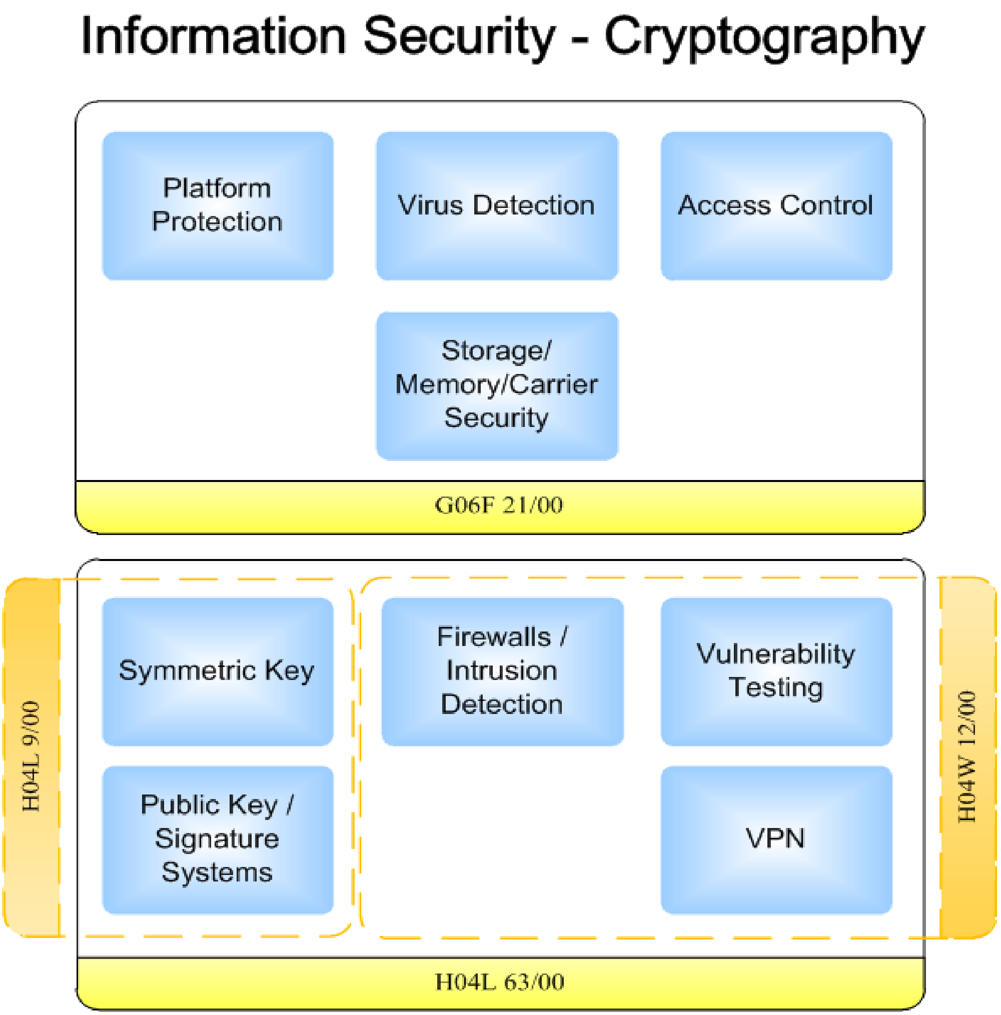
The Technology:
Information Security and Cryptography

- Protection of system hardware, software, or data from maliciously causing destruction, unauthorized modification, or unauthorized disclosure.

- Subject matter relating to security policies, access control, monitoring, scanning data, countermeasures, usage control, data protection and user protection, e.g. privacy.

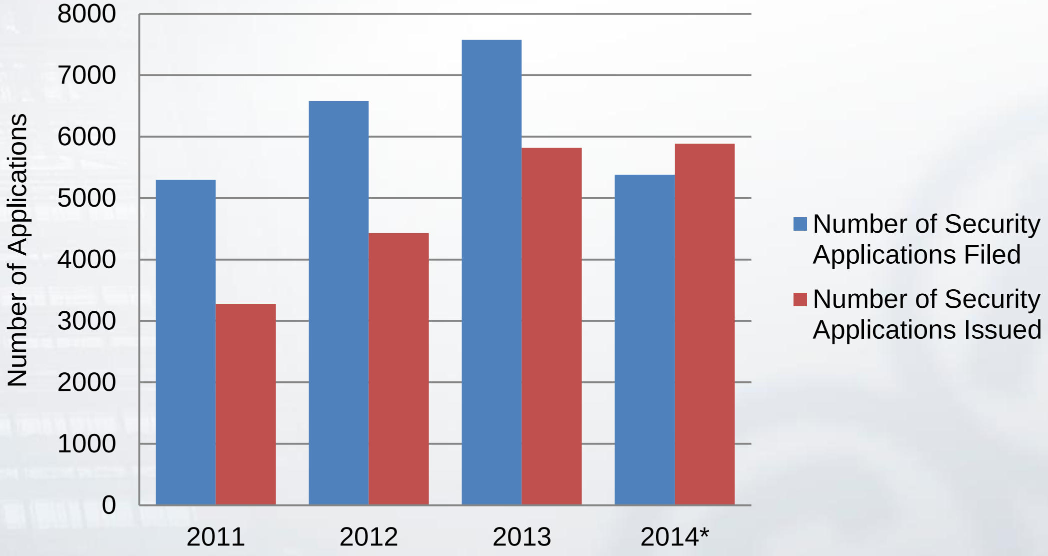
- Equipment and processes which (a) conceal or obscure intelligible information by transforming such information so as to make the information unintelligible to a casual or unauthorized recipient, or (b) extract intelligible information from such a concealed representation, including breaking of unknown codes and messages.

The Technology:
Cooperative Patent Classification (CPC)


Information Security - Cryptography
Platform Protection
Virus Detection
Access Control
Storage/ Memory/Carrier Security
G06F 21/00
H04L 9/00
Symmetric Key
Public Key / Signature Systems
Firewalls / Intrusion Detection
Vulnerability Testing
VPN
H04W 12/00
H04L 63/00

Information Security and Cryptography Applications - Filed vs. Issued

	2011	2012	2013	2014*
Number of Security Applications Filed	5297	6582	7577	5378
Number of Security Applications Issued	3277	4433	5818	5885



*Filing numbers for 2014 reflects partial data

Filing - Top 15 Assignees

Information Security and Cryptography Applications

2011		2012		2013		2014*	
No. Apps	Assignee	No. Apps	Assignee	No. Apps	Assignee	No. Apps	Assignee
210	IBM	297	IBM	373	IBM	173	IBM
199	Microsoft	214	Google	153	Intel	103	Symantec
99	Google	137	Microsoft	152	Google	71	Google
98	Symantec	125	EMC	145	Amazon	67	Microsoft
86	McAfee	123	Intel	120	Symantec	64	Samsung
68	EMC	91	Symantec	114	EMC	60	Amazon
63	Apple	90	Samsung	111	Microsoft	50	Bank of America
60	Amazon	87	Amazon	91	Samsung	46	Qualcomm
60	ETRI	81	Toshiba	83	Qualcomm	45	Tencent
57	Samsung	78	Blackberry	76	Toshiba	39	Toshiba
54	Toshiba	50	Cisco	66	Cisco	34	EMC
53	Sony	49	HP	66	HP	33	Huawei
51	HP	49	ETRI	48	Fujitsu	32	Sony
49	Cisco	47	Sony	47	NEC	31	Intuit
46	RIM	46	Broadcom	46	Tencent	31	Intel

*Filing numbers for 2014 reflects partial data

Filing - Top 15 Countries

Information Security and Cryptography Applications (by Country of Assignee)

2011		2012		2013		2014*	
No. Apps	Assignee	No. Apps	Assignee	No. Apps	Assignee	No. Apps	Assignee
2607	U.S.	3210	U.S.	3697	U.S.	1970	U.S.
415	Japan	413	Japan	501	Japan	277	Japan
189	Korea	229	Korea	243	Korea	161	Korea
132	France	166	China	199	China	139	China
119	China	135	France	125	Germany	87	Germany
106	Canada	133	Canada	108	France	51	Taiwan
93	Germany	127	Germany	104	Taiwan	51	Canada
81	Finland	76	Taiwan	94	Canada	46	France
81	Taiwan	74	United Kingdom	65	Israel	40	Finland
67	Sweden	56	Finland	57	United Kingdom	36	Netherlands
52	Netherlands	49	Sweden	57	Sweden	34	United Kingdom
42	United Kingdom	35	Israel	50	Finland	31	Israel
33	Israel	30	Netherlands	34	Russian Federation	30	Russian Federation
26	Switzerland	26	Russian Federation	31	Netherlands	21	Sweden
24	Russian Federation	23	Switzerland	31	Cayman Islands	18	Switzerland

*Filing numbers for 2014 reflects partial data

Filing - Top 15 U.S. States

Information Security and Cryptography Applications (by U.S. state of Assignee)

2011		2012		2013		2014*	
No. Apps	Assignee	No. Apps	Assignee	No. Apps	Assignee	No. Apps	Assignee
987	CA	1278	CA	1531	CA	816	CA
290	NY	392	NY	483	NY	243	NY
278	WA	214	WA	206	TX	108	TX
144	MA	193	MA	187	MA	90	WA
137	TX	169	TX	171	NV	75	MA
92	NJ	110	NV	164	WA	72	NC
80	NV	108	NJ	116	GA	72	GA
79	IL	98	IL	107	NJ	64	NV
72	NC	74	DE	100	FL	64	NJ
58	DE	69	NC	97	IL	57	IL
55	GA	68	VA	71	VA	40	FL
53	VA	66	GA	57	NC	31	PA
31	PA	50	FL	49	DE	25	VA
28	CO	38	CO	37	PA	22	MD
27	FL	37	MD	33	KS	21	KS

*Filing numbers for 2014 reflects partial data

Pendency Metrics – FY 2014

Information Security and Cryptography Applications

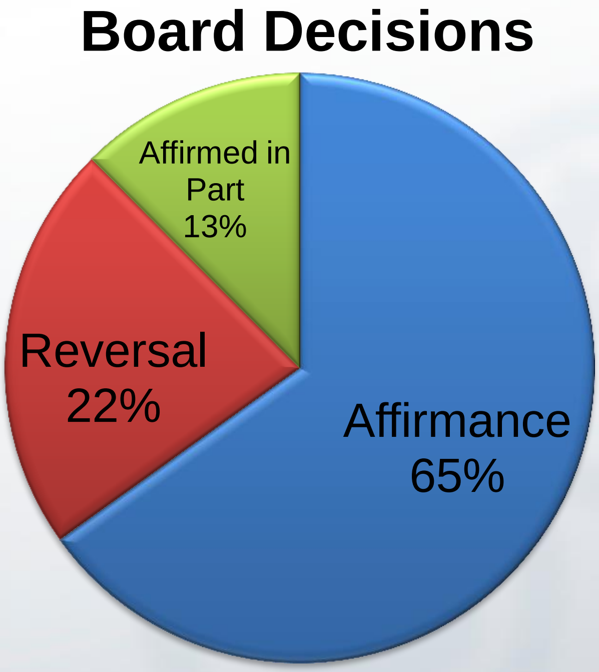
Security Patent Applications	Pendency
First Action Pendency (Average number of months between filing date and first action)	16.14 months
Total Action Pendency (Average number of months between filing date and issue or abandonment)	29.04 months

Security Patent Applications	Percentage of Actions within 4 months
Amendments	93.4%
RCE	50.1%
Patent Trial and Appeal Board (PTAB)	99.0%

Appeal Metrics

Information Security and Cryptography Applications

Security Patent Applications	2014
Appeal Briefs Filed	243
Examiner's Answers	296
Abandonment after Board Decision	228
Allowance after Board Decision	105
Reopened after Board Decision	8



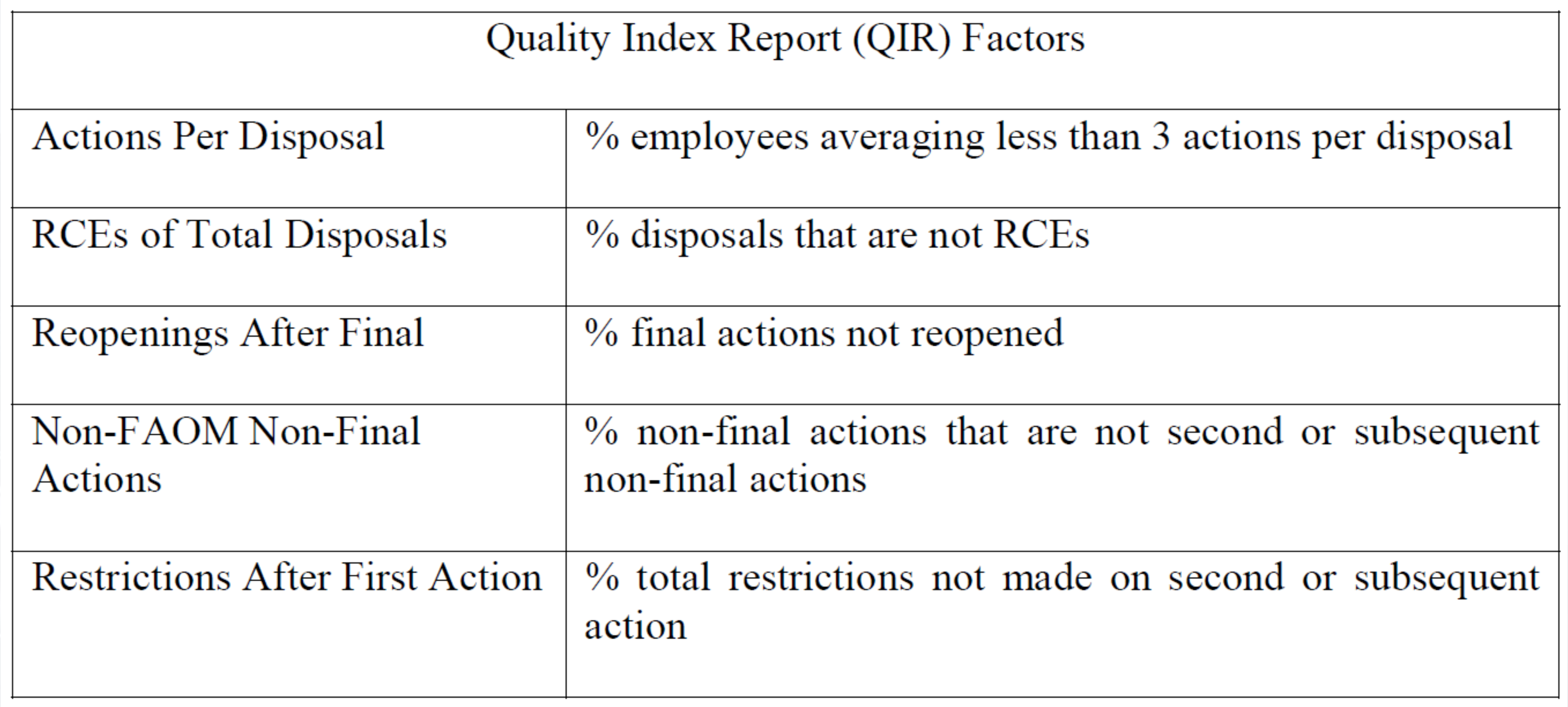
Quality Metrics: Quality Index Report (QIR)

- Quality Index Report (QIR) is a measure of the degree to which actions in the prosecution of all patent applications reveal trends indicative of quality concerns.

- This index is based on data currently available through the USPTO’s Patent Application Locating and Monitoring (PALM) internal tracking system.

- This index is calculated by statistical analysis of occurrences of certain types of events as recorded in PALM.

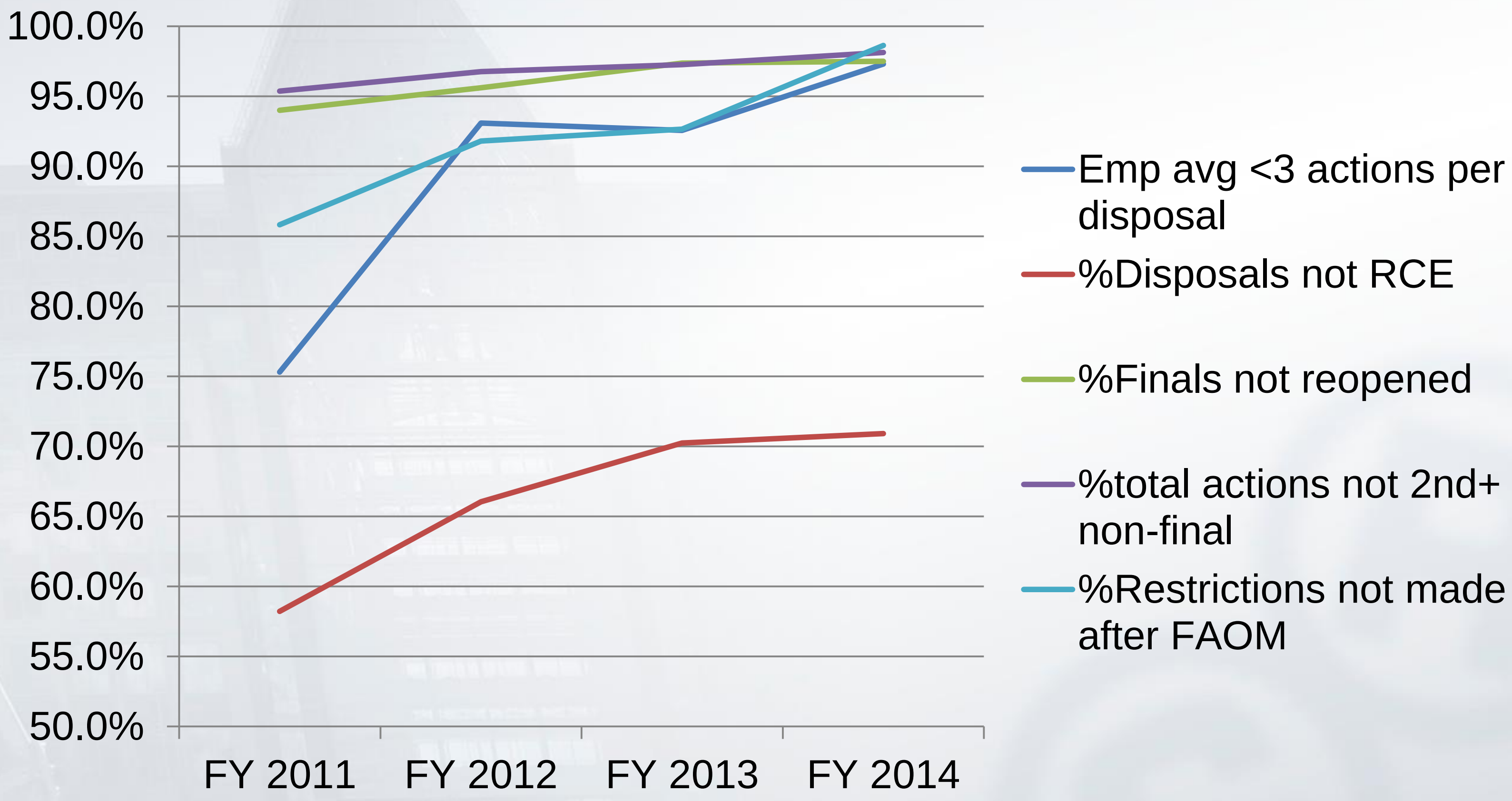
Quality Metrics: QIR Factors



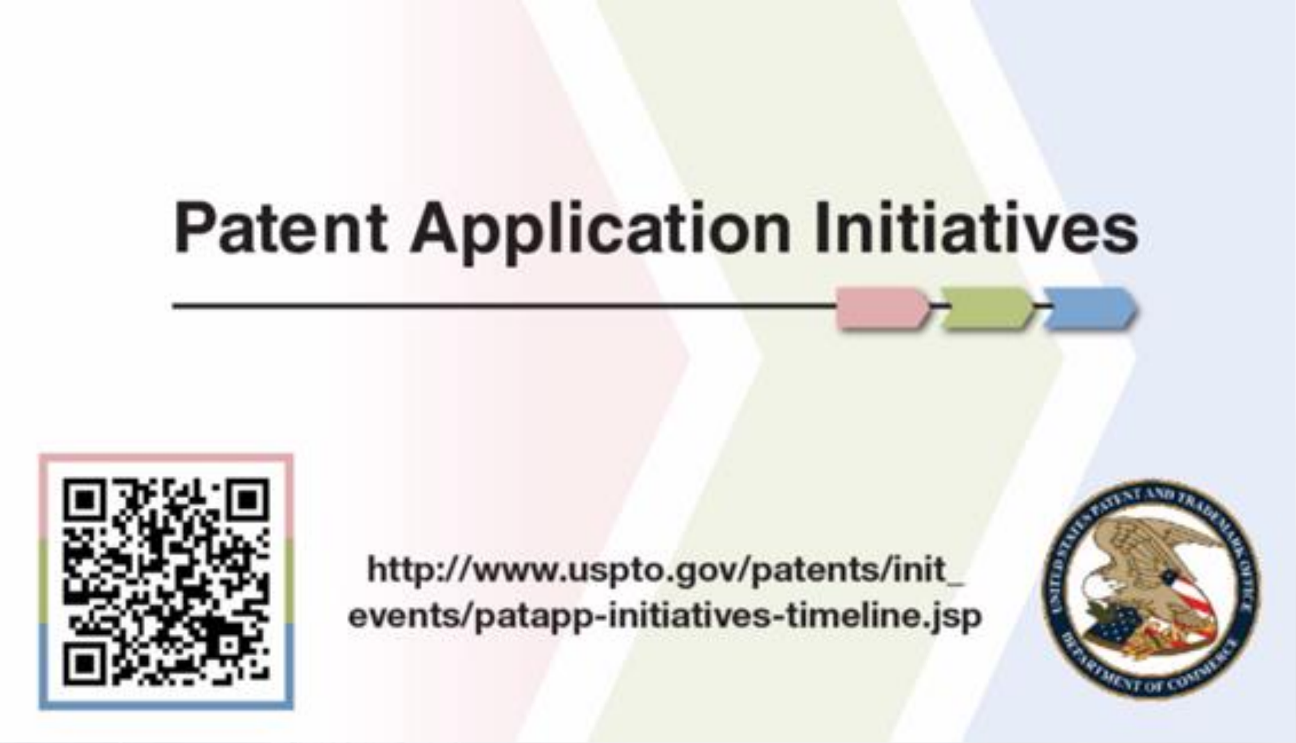
Quality Index Report (QIR) Factors	
Actions Per Disposal	% employees averaging less than 3 actions per disposal
RCEs of Total Disposals	% disposals that are not RCEs
Reopenings After Final	% final actions not reopened
Non-FAOM Non-Final Actions	% non-final actions that are not second or subsequent non-final actions
Restrictions After First Action	% total restrictions not made on second or subsequent action

Quality Metrics: Quality Index Report

Information Security and Cryptography Examinations



Patent Application Initiatives

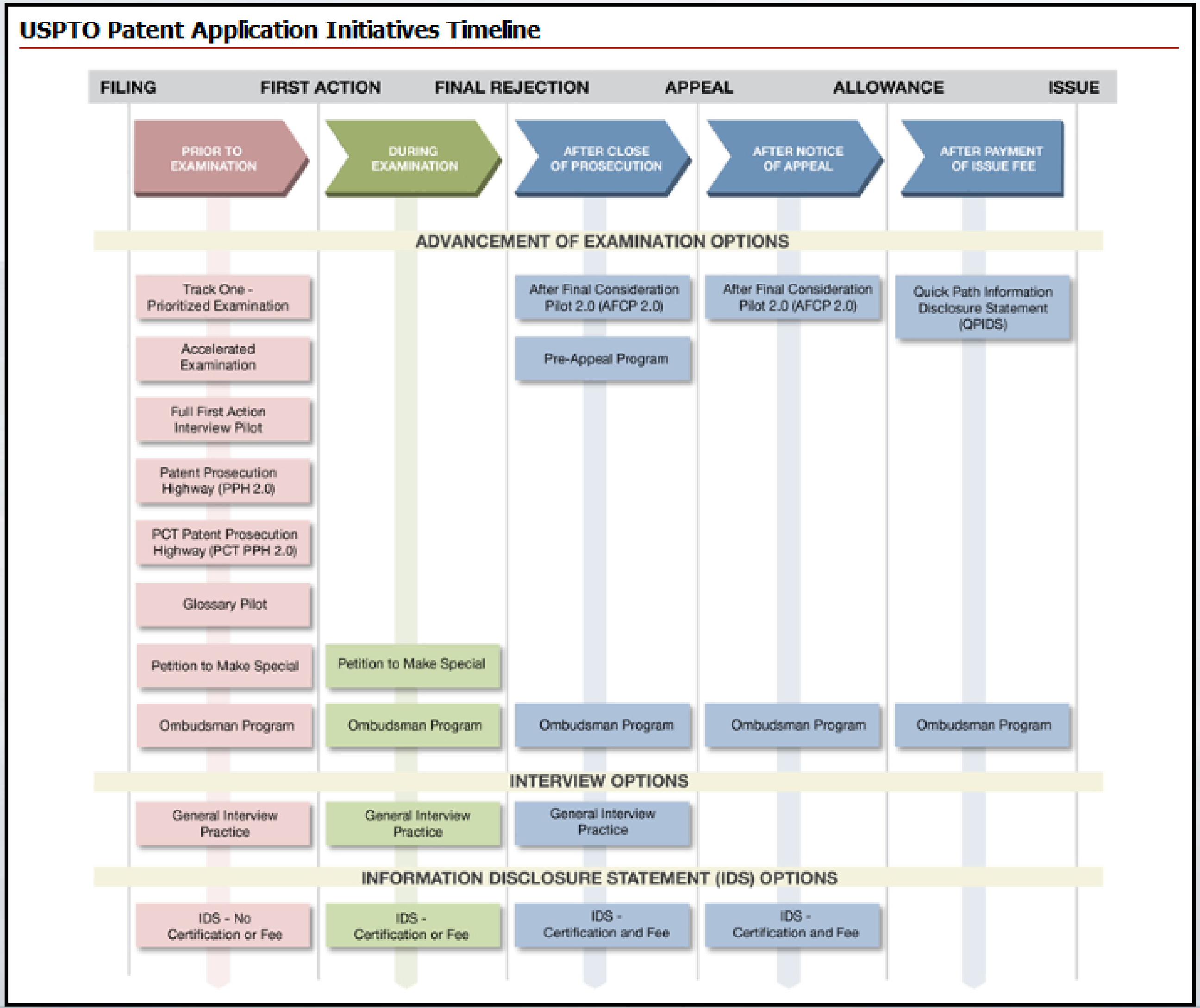


Patent Application Initiatives

http://www.uspto.gov/patents/init_events/patapp-initiatives-timeline.jsp

The Centralized Patent Application Initiative website is a single online location highlighting the advantages of various patent programs available to applicants during specific stages of prosecution.

Patent Application Initiatives (PAI) Website

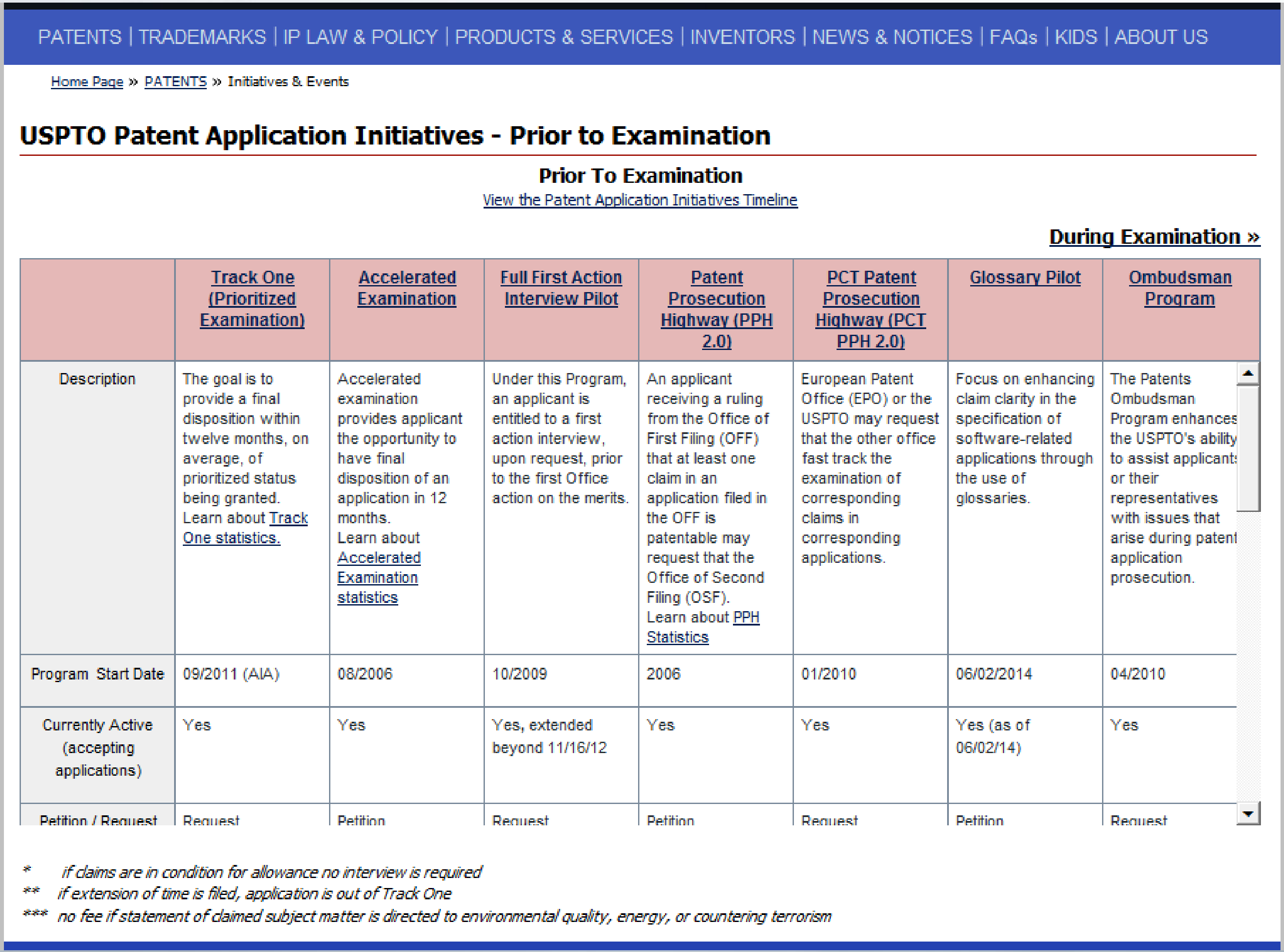


USPTO Patent Application Initiatives Timeline

FILING · FIRST ACTION · FINAL REJECTION · APPEAL · ALLOWANCE · ISSUE

PRIOR TO EXAMINATION	DURING EXAMINATION	AFTER CLOSE OF PROSECUTION	AFTER NOTICE OF APPEAL	AFTER PAYMENT OF ISSUE FEE
ADVANCEMENT OF EXAMINATION OPTIONS				
Track One - Prioritized Examination		After Final Consideration Pilot 2.0 (AFCP 2.0)	After Final Consideration Pilot 2.0 (AFCP 2.0)	Quick Path Information Disclosure Statement (QPIDS)
Accelerated Examination		Pre-Appeal Program		
Full First Action Interview Pilot				
Patent Prosecution Highway (PPH 2.0)				
PCT Patent Prosecution Highway (PCT PPH 2.0)				
Glossary Pilot				
Petition to Make Special	Petition to Make Special			
Ombudsman Program	Ombudsman Program	Ombudsman Program	Ombudsman Program	Ombudsman Program
INTERVIEW OPTIONS				
General Interview Practice	General Interview Practice	General Interview Practice		
INFORMATION DISCLOSURE STATEMENT (IDS) OPTIONS				
IDS - No Certification or Fee	IDS - Certification or Fee	IDS - Certification and Fee	IDS - Certification and Fee	

Navigating the PAI Website



PATENTS | TRADEMARKS | IP LAW & POLICY | PRODUCTS & SERVICES | INVENTORS | NEWS & NOTICES | FAQs | KIDS | ABOUT US

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USPTO Patent Application Initiatives - Prior to Examination

Prior To Examination

View the Patent Application Initiatives Timeline

During Examination »

	Track One (Prioritized Examination)	Accelerated Examination	Full First Action Interview Pilot	Patent Prosecution Highway (PPH 2.0)	PCT Patent Prosecution Highway (PCT PPH 2.0)	Glossary Pilot	Ombudsman Program
Description	The goal is to provide a final disposition within twelve months, on average, of prioritized status being granted. Learn about Track One statistics.	Accelerated examination provides applicant the opportunity to have final disposition of an application in 12 months. Learn about Accelerated Examination statistics	Under this Program, an applicant is entitled to a first action interview, upon request, prior to the first Office action on the merits.	An applicant receiving a ruling from the Office of First Filing (OFF) that at least one claim in an application filed in the OFF is patentable may request that the Office of Second Filing (OSF). Learn about PPH Statistics	European Patent Office (EPO) or the USPTO may request that the other office fast track the examination of corresponding claims in corresponding applications.	Focus on enhancing claim clarity in the specification of software-related applications through the use of glossaries.	The Patents Ombudsman Program enhances the USPTO's ability to assist applicants or their representatives with issues that arise during patent application prosecution.
Program Start Date	09/2011 (AIA)	08/2006	10/2009	2006	01/2010	06/02/2014	04/2010
Currently Active (accepting applications)	Yes	Yes	Yes, extended beyond 11/16/12	Yes	Yes	Yes (as of 06/02/14)	Yes
Petition / Request	Request	Petition	Request	Petition	Request	Petition	Request

* *if claims are in condition for allowance no interview is required*

** *if extension of time is filed, application is out of Track One*

*** *no fee if statement of claimed subject matter is directed to environmental quality, energy, or countering terrorism*

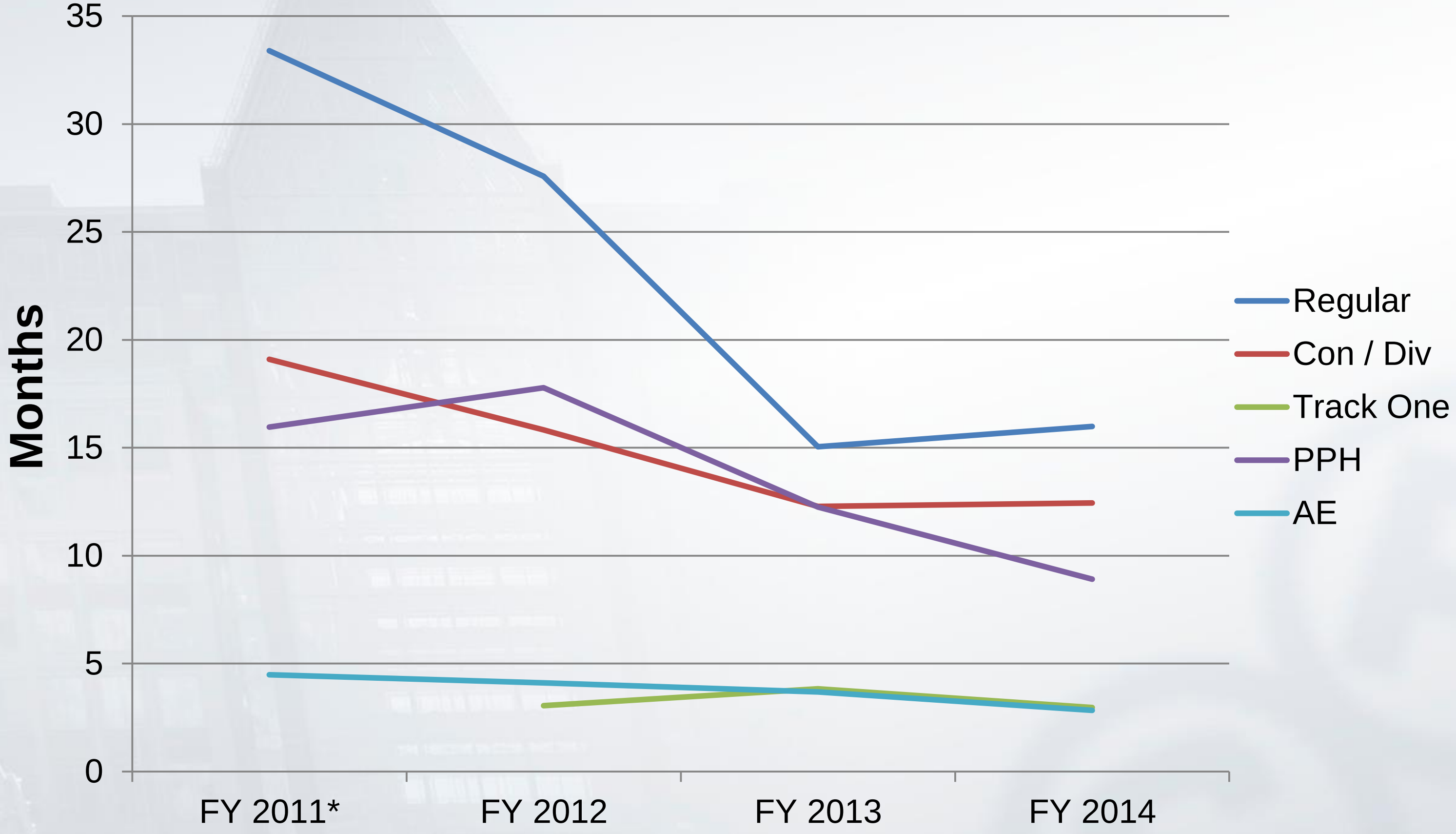
Patent Application Initiatives

Information Security and Cryptography Applications

	Track One		Patent Prosecution Highway		Accelerated Exam	
	Granted	Denied	Granted	Denied	Granted	Denied
FY2014	286	0	27	8	6	0
FY2013	210	0	33	2	16	2
FY2012	164	0	25	3	19	4
FY2011	N/A	N/A	23	0	21	2

Patent Application Initiatives: Pendency to First Office Action

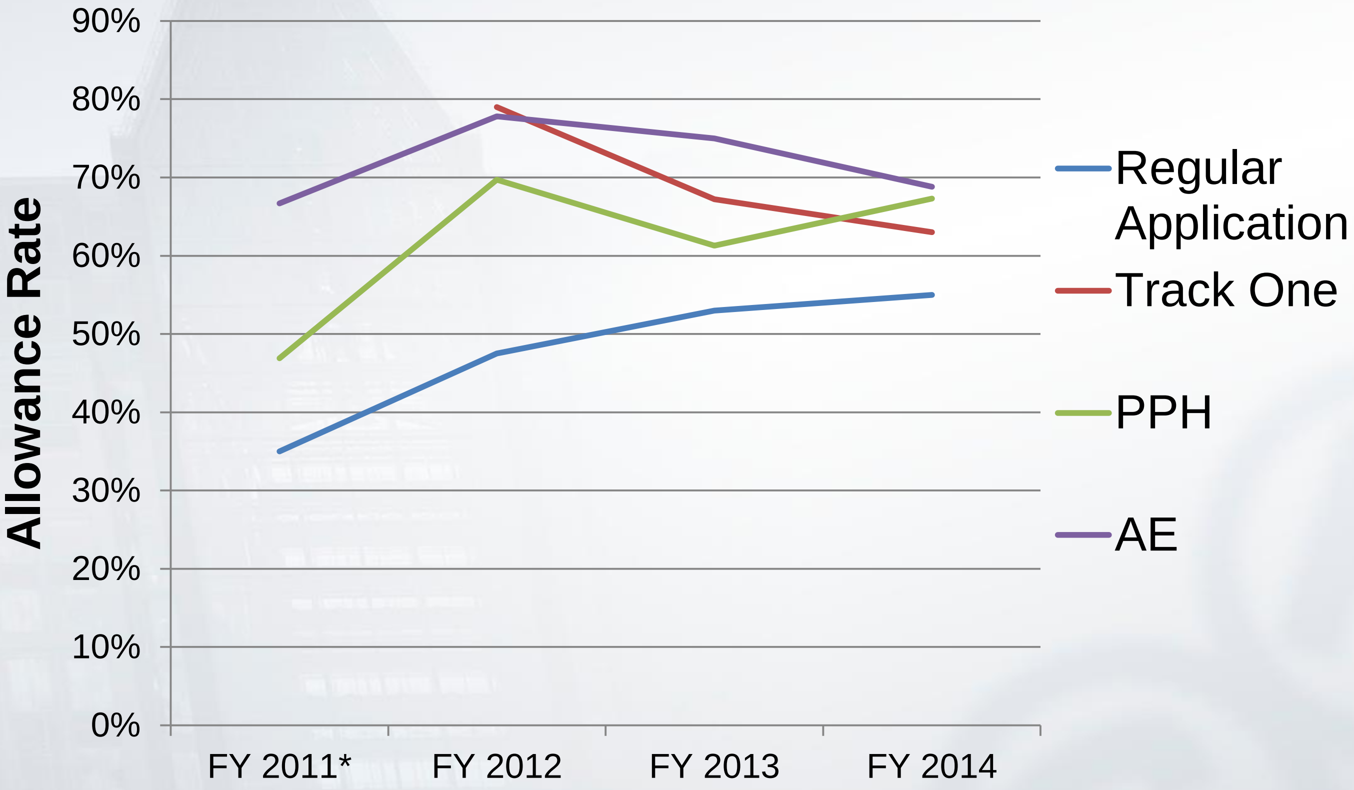
Information Security and Cryptography Applications



*no data for Track One requests for FY 2011

Patent Application Initiatives: Allowance Rate

Information Security and Cryptography Applications



*no data for Track One requests for FY 2011

Patent Application Initiatives: Quick Path Information Disclosure Statement (QPIDS)

- Features of the QPIDS:
  - A QPIDS submission may only be filed after payment of the issue fee and before issuance of the patent.
  - The following items are included in a QPIDS submission:
    - A QPIDS transmittal form, PTO/SB/09.
    - An IDS, including a timeliness statement as set forth in 37CFR 1.97(e) and the IDS fee set forth in 37 CFR 1.17(p).
    - A Web-Based ePetition to withdraw from issue under 37 CFR 1.313(c)(2), and the petition fee set forth in 37 CFR 1.17(h).
    - A RCE and the RCE fee under 37 CFR 1.17(e).
    - An authorization to charge all fees associated with the QPIDS to a USPTO deposit account.

Patent Application Initiatives: Quick Path Information Disclosure Statement (QPIDS)

- Features of the QPIDS (cont.):
  - If the examiner determines that the QPIDS necessitated reopening prosecution, the Office will issue a form PTO-2300, titled “Notification of Reopening of Prosecution Due to Consideration of An Information Disclosure Statement Filed After Mailing of A Notice of Allowance,” and the RCE will be processed.
  - Otherwise, the Office will issue a corrected notice of allowability (PTO-37), which will identify the IDS and be accompanied by a copy of the submitted IDS listing as considered by the examiner.

Patent Application Initiatives: QPIDS Metrics

Technology Center 2400	FY 12	FY 13	FY 14	Total
Total Number of QPIDS Filed and Completed Process	31	97	231	**359**
• # Corrected NOAs mailed	29	92	202	**323**
•Total # of RCEs processed	2	5	29	**36**

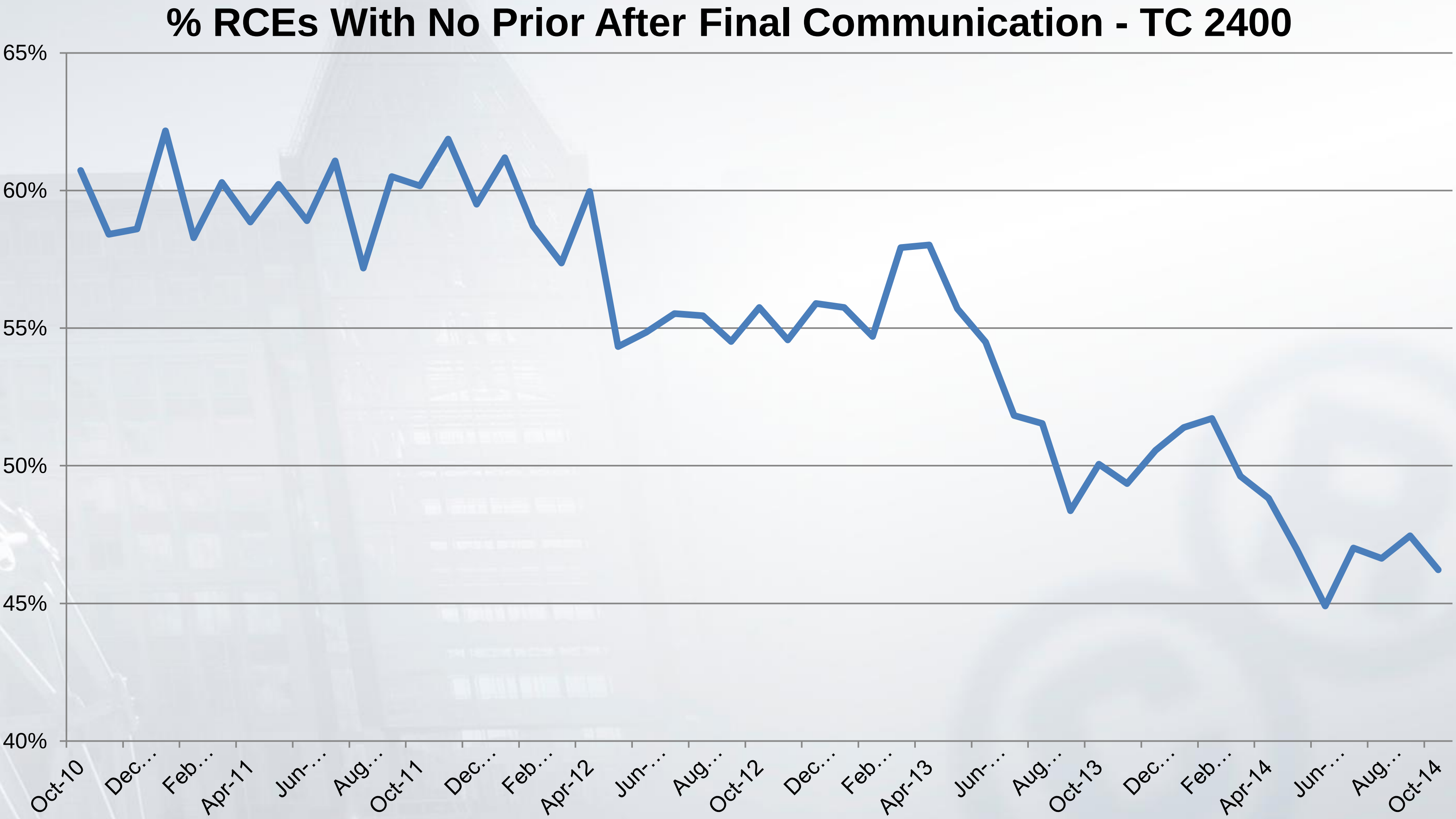
Security Workgroups 2430 and 2490	FY 12	FY 13	FY 14	Total
Total Number of QPIDS Filed and Completed Process	11	37	38	**86**
• # Corrected NOAs mailed	10	34	33	**77**
•Total # of RCEs processed	1	3	5	**9**

FY 2012 – FY 2014

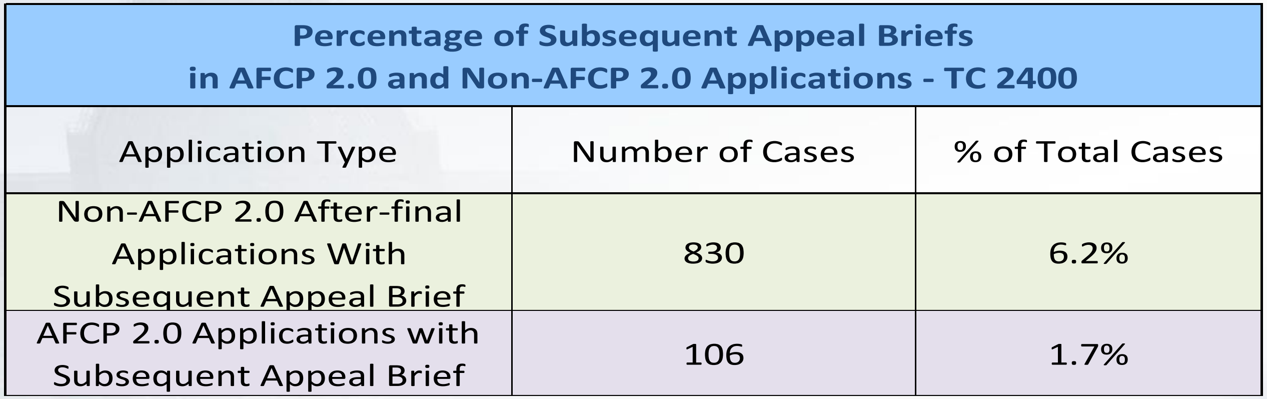
Patent Application Initiatives:
After Final Consideration Pilot (AFCP) 2.0 Features

- Features of the AFCP 2.0:
  - Applicants must request entry into AFCP 2.0
  - Applicants must submit an amendment to at least one independent claim that does not broaden the scope of the independent claim.
  - If the application is not allowed, the examiner must request an interview with the applicant in order to claim non-production time.

Patent Application Initiatives: AFCP 2.0



Patent Application Initiatives:
AFCP 2.0 vs Non-AFCP 2.0 Applications



Percentage of Subsequent Appeal Briefs in AFCP 2.0 and Non-AFCP 2.0 Applications - TC 2400

Application Type	Number of Cases	% of Total Cases
Non-AFCP 2.0 After-final Applications With Subsequent Appeal Brief	830	6.2%
AFCP 2.0 Applications with Subsequent Appeal Brief	106	1.7%

(May 19, 2013* – October 20, 2014)

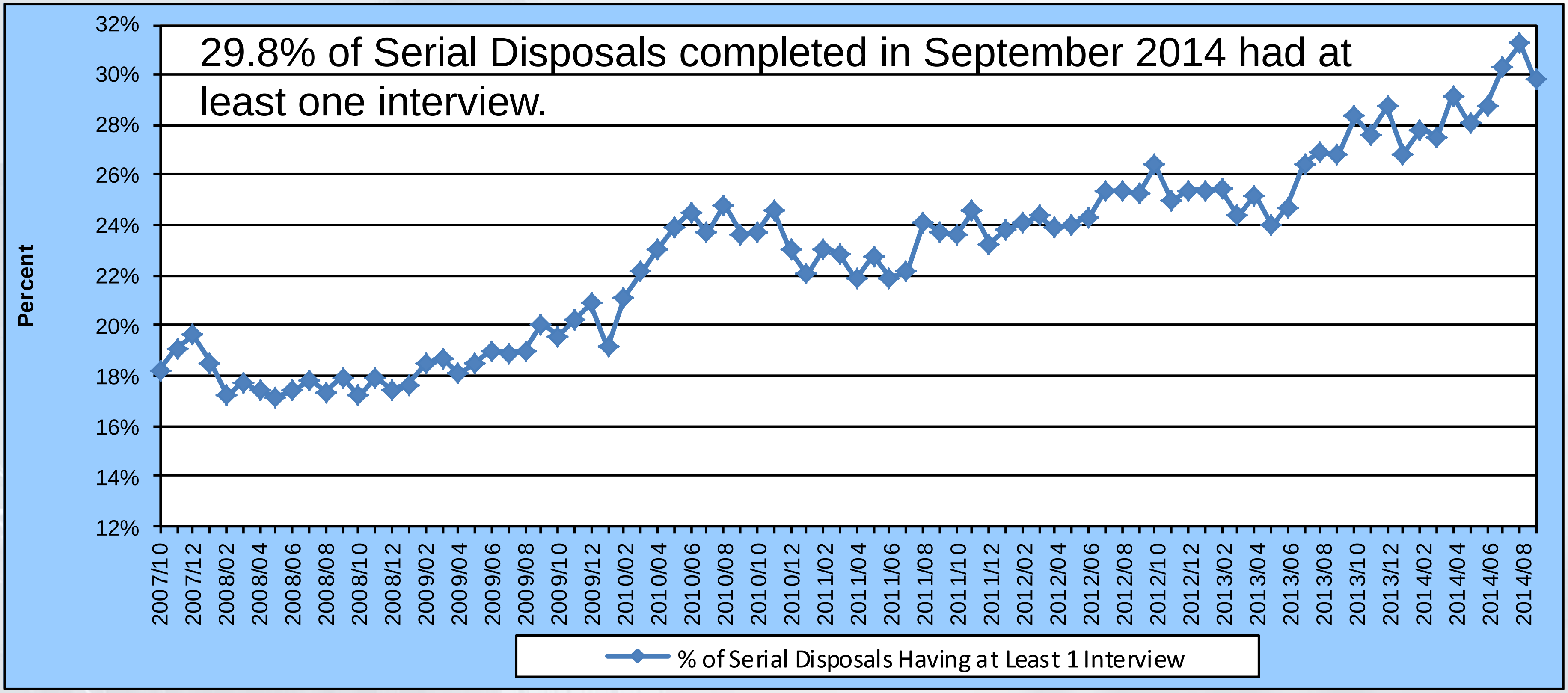
*Start Date of AFCP 2.0

Patent Application Initiatives:
AFCP 2.0 External Survey Results

Preliminary External Survey Results:

- When asked if the AFCP 2.0 reduced the likelihood an RCE will be filed in the application, 62% responded affirmatively.
- 75% of respondents felt that the AFCP 2.0 is either somewhat or very effective in advancing prosecution.
- Respondents were 3 times more likely to recommend continuation of the AFCP 2.0 than otherwise.
- Consistency of AFCP 2.0 implementation and examiner familiarity with the AFCP 2.0 were two concerns of respondents.
    - Additional training has been provided to examiners.
    - Examiner/SPE access to Patent Application Initiatives (PAI).

Percent of Serial Disposals Having at Least One Interview by Month (Corps. FY 2008 – FY 2014)



Questions and Comments?

Nestor Ramirez

Director, TC2400

Nestor.Ramirez@uspto.gov

Break

Alice Corp. v. CLS Bank

Legal Landscape since Alice Corp. and USPTO §101 Guidelines

Angela Ziegenhorn, Senior Director IP, Symantec

Michael Cygan, Legal Advisor, OPLA

Thoughts on the Impact of *Alice* v. *CLS Bank* on Security Software Patents

Angela Ziegenhorn
Senior Director IP
Symantec Corporation

Alice v. CLS Bank In a Nutshell

- In *Alice*, the Supreme Court:
  - Affirmed its judicial-exception approach to 35 U.S.C. § 101
  - Applied the two step framework from *Mayo* to computer implemented inventions
  - But limited its decision to the facts of the case, without defining "abstract idea" or making categorical rules
- *Alice* maintains ambiguity about the scope of the abstract idea exception
- Ambiguity makes property rights and investment risky and uncertain, potentially inhibiting business
- The Supreme Court recognized this danger
  - "At the same time, we tread carefully in construing this exclusionary principle lest it swallow all of patent law." *Alice Corp. Pty. Ltd.* v. *CLS Bank Intern.*, 134 S.Ct. 2347, 2354 (2014)

Applying *Alice*: Step 1

- Step 1: "First, we determine whether the claims at issue are directed to [a] patent-ineligible [abstract idea.]"
  - *Alice Corp. Pty. Ltd.* v. *CLS Bank Intern.*, 134 S.Ct. 2347, 2355 (2014)
- But *Alice* provides no real clarity on how to make this determination and relies instead on comparisons to prior cases
  - Looking at the case law, if an applicant's claims are closer to *Benson*, *Flook*, *Bilski*, and *Alice*, then the claims are less likely to be subject-matter eligible; more likely if closer to the rubber-curing method in *Diehr*
- Commentators have various views of what *Alice* might mean
  - Professor Chisum proposed that a claim is not abstract under *Alice* if it presents a "novel and unobvious solution to a technical problem"
  - Another commentator suggested that *Alice* applies only to abstract ideas that are "fundamental practices long prevalent in their fields", like hedging

Applying *Alice*: Step 2

- Step 2: We then conduct a "search for an 'inventive concept' — *i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.'"
  - *Alice Corp. Pty. Ltd.* v. *CLS Bank Intern.*, 134 S.Ct. 2347, 2355 (2014)
- In discussing this step, the Supreme Court provided us with a new useful "clue"
  - Per the Supreme Court, the *Alice* claims were invalid because "they do not, for example, purport to improve the functioning of the computer itself or effect an improvement in any other technology or technical field."
  - The Supreme Court wrote "for example" because this "technology" test is just one factor, not a per se rule.
  - The Solicitor General argued that this "technology" test should be a per se requirement. Similarly, the *Alice* concurrence argued for a per se rule against business method patents.
  - The controlling majority of the Supreme Court declined to adopt either per se rule.

How Are Federal Courts Interpreting *Alice*?

- Aggressively!
- Of the first 20 decisions applying *Alice*, the courts have invalidated claims in 16 of them
  - Three invalidations affirmed at the Federal Circuit
  - All invalidations occurred before trial (e.g., at the motion to dismiss, judgment on the pleadings, or summary judgment stage)
  - Among patents with invalidated claims:
    - Three directed to software
    - 10 directed to simple business methods, games, and ways of organizing human behavior (meal plans, Bingo, etc.)
    - One directed to pure databases
    - Two directed to medical information/diagnostics
  - Even when claims survive one stage of litigation (e.g., motion to dismiss), judges indicate that they remain vulnerable under *Alice* at later stages (e.g., summary judgment)

USPTO’s Response to *Alice*

- Issued a memo of preliminary instructions to the examining corps.
  - http://www.uspto.gov/patents/announce/alice_pec_25jun2014.pdf
- Issued the first final written decision, in a Covered Business Method trial, that applies *Alice* to invalidate a patent
  - http://armstrongteasdale.typepad.com/at_post_grant/2014/09/ptabs-first-final-written-decision-in-a-post-alice-corp-cbm-review-details-101-analysis-.html
- Withdrew some allowances due to *Alice*
  - http://www.uspto.gov/blog/director/entry/update_on_uspto_s_implementation

- Issuing 101 Rejections

Applying *Alice* to Security Software: Step 1

- Is security software an “abstract idea?”
  - Security software compares very favorably with prior Supreme Court decisions on abstract ideas
  - Security software typically focuses on real-world applications of mathematical and other algorithms, as was the case in *Diehr*
  - Security software often protects vulnerabilities of particular platforms or networks (operating systems, firmware, protocols, etc.) and is designed to act on physical systems, just as the software in *Diehr*
  - Security software is thus much closer in kind to the rubber curing method in *Diehr* than the pure binary mathematical operation in *Benson* or the fundamental economic practices (hedging and intermediated settlement) in *Bilski* and *Alice*
    - Security software also typically does not rely solely on the alleged novelty of pure mathematical algorithms to ensure patentability, unlike the method in *Flook*, which relied on the alleged novelty of a mathematical “smoothing” function

Applying *Alice* to Security Software: Step 2

- Even if one concludes that a security software patent is directed to an "abstract idea," can the claims still recite an "inventive concept" that is sufficient to make the claims patent-eligible?
- The new useful "clue" from *Alice* results in a very favorable interpretation
  - Security software typically improves the reliability, stability, efficiency, and/or security of computing devices, thus satisfying the Supreme Court's example of something that "improve[s] the functioning of the computer itself"
  - These characteristics are a strong indication that security software represents patent-eligible subject matter

Thoughts on Drafting Valid Security Software Patent Claims

- Avoid overly broad claims (e.g., provide context in a claim for how an algorithm or process will be used)
- Focus on how a security process interacts with the software and hardware platforms/networks it protects
- Craft claims and specifications that show how security processes improve the functionality of computing devices and/or networks

Thank You

Angela Ziegenhorn
Angela_Ziegenhorn@Symantec.com

APPENDIX

Federal Court Decisions Applying *Alice*

	Software	Simple Business Method	Pure Database	Medical Infor.	Invalidate	Survive	Motion to Dismiss	Judg. on the Pleadings	Summary Judg.	Federal Circuit
Amdocs	X				X			X		
Autoform	X (mechanical)					X			X	
BuySafe		X			X			X		X
Card Verificat.		X				X	X			
Cogent				X	X		X			
Comcast		X			X				X	
Data Distribut.			X			X	X			
Diet Goal		X			X				X	
Digitech Image			X		X				X	X
Eclipse		X			X		X			
Every Penny		X			X				X	
Genetic Tech.				X	X		X			

Federal Court Decisions Applying *Alice*

	Software	Simple Business Method	Pure Database	Medical Infor.	Invalidate	Survive	Motion to Dismiss	Judg. on the Pleadings	Summary Judg.	Federal Circuit
Helios	X					X			X	
Hitkansut	X (mech-anical)				X (in part)				X	
Loyalty		X			X			X		
MCRO	X				X			X		
Open Text		X			X		X			
Planet Bingo		X (game)			X				X	X
Tuxis		X			X		X			
Walker Digital		X			X				X	
Total	5	11	2	2	16	4	7	4	9	3

Cybersecurity Partnership
Menlo Park, CA
November 14, 2014

Alice Corp. v. CLS Bank USPTO Preliminary Examination Instructions 2014

Michael Cygan
Senior Legal Advisor
Office of Patent Legal Administration

Subject Matter Eligibility

- Supreme Court has issued four decisions on subject matter eligibility in the last five years:

2010: *Bilski v. Kappos*

- Method claims directed to abstract ideas.

2012: *Mayo v. Prometheus*

- Method claims directed to laws of nature.

2013: *Association for Molecular Pathology v. Myriad Genetics*

- Product claims directed to natural phenomena ("products of nature").

2014: *Alice Corp. v. CLS Bank*

- Method and product claims directed to abstract ideas.

Summary of *Alice Corp. v. CLS Bank*

- Alice Corp. is the assignee of the four patents at issue. The patents include method, computer system and computer readable storage medium claims.
  - The invention is directed to a scheme for mitigating “settlement risk,” *i.e.*, the risk that only one party to an agreed-upon financial exchange will satisfy its obligation, in which a computer system is used as a third-party intermediary between the parties to the exchange.
  - The claims were found ineligible because “the claims at issue amount to ‘nothing significantly more’ than an instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer.”

Impact of *Alice Corp.* on the Subject Matter Eligibility Analysis

- The decision in *Alice Corp.* does:
  - follow the analytical framework set forth by the Supreme Court in *Mayo.*
  - extend the *Mayo* framework to all types of claims and all types of judicial exceptions.
- The decision in *Alice Corp.* does not:
  - create a *per se* excluded category of subject matter, such as software or business methods, or
  - impose any special requirements for eligibility of software or business methods.

Alice Corp. and the Preliminary Examination Instructions

- Following the *Alice Corp.* decision, the USPTO issued "Preliminary Examination Instructions" in a memorandum to the examining corps on June 25, 2014.
  - Accessible at www.USPTO.gov at the webpage titled: "Examination Guidance and Training Materials"

- Public comments on the *Alice Corp*. Preliminary Examination Instructions were invited for 30 days.
  - 79 Fed. Reg. 38854 (June 30, 2014)
  - 47 Comments were received and can be viewed on the website at the webpage titled: "Comments from the Public"

The Preliminary Examination Instructions

- *Alice Corp.* requires several changes in USPTO practice because prior examination guidance:
  - Applied a different analysis to claims with abstract ideas than to claims with laws of nature.
  - Applied a different analysis to product claims involving abstract ideas than to process claims.

- The Preliminary Examination Instructions were issued to immediately address abstract ideas.
  - Laws of nature and natural phenomena are already being analyzed under *Mayo*.

Analyzing Claims with Abstract Ideas: Basic Inquiries

The basic inquiries to determine subject matter eligibility under 35 USC 101 remain the same (MPEP 2106(I)):

- First, determine whether the claim is directed to one of the four statutory categories of invention, *i.e.*, process, machine, manufacture, or composition of matter.
  - – If not, the claim is ineligible because it is directed to non-statutory subject matter. (*e.g*., information *per se.*)
- Next, determine whether the claim is directed to a judicial exception and, if so, whether it is directed to a patent-eligible application of the exception.
  - Under *Alice Corp*. this is a two-part analysis.

Two-part Analysis for Abstract Ideas

- Part 1: Determine whether the claim is directed to an abstract idea (a judicial exception).
  - If not, the claim is eligible. If so, proceed to Part 2.

- Part 2: Determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim as a whole amounts to **significantly more** than the abstract idea itself.
  - If so, the claim is eligible. If not, the claim is ineligible because it is directed to non-statutory subject matter.

Preliminary Examination Instructions – Part 1 of Analysis

Part 1: Is the claim directed to an abstract idea?

- It is important to remember that at some level, all inventions embody, use, reflect, rest upon or apply abstract ideas and the other exceptions.
  - An invention is not ineligible simply because it involves an abstract concept.
- Examples of abstract ideas referenced in *Alice Corp.* include:
  - ➢ Fundamental economic practices;
  - ➢ Certain methods of organizing human activities;
  - ➢ “[A]n idea of itself”; and,
  - ➢ Mathematical relationships/formulas.

Preliminary Examination Instructions – Part 2 of Analysis

Part 2: Does any element, or combination of elements, amount to significantly more than the abstract idea itself?

- In other words, are there other limitations in the claim that show a patent-eligible application of the abstract idea, *e.g.*, more than a mere instruction to apply the abstract idea?

- Analyze the claim as a whole.

Preliminary Examination Instructions – Part 2 of Analysis

- Limitations referenced in *Alice Corp.* that may be enough to qualify as “significantly more” when recited in a claim with an abstract idea:
  - Improvements to another technology or technical field.
  - Improvements to the functioning of the computer itself.
  - Meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment.

Preliminary Examination Instructions – Part 2 of Analysis

- Limitations referenced in *Alice Corp.* that are not enough to qualify as "significantly more" when recited in a claim with an abstract idea:
  - Adding the words "apply it" (or an equivalent) with an abstract idea.
  - Mere instructions to implement an abstract idea on a computer.
  - Requiring no more than a generic computer to perform generic computer functions that are well-understood, routine and conventional activities previously known to the industry.

Public Comments on Preliminary Examination Instructions

- A number of comments supported the preliminary guidance, including that the instructions:
  - accurately reflect the *Alice* decision.
  - correctly state that there is no *per se* excluded category of subject matter.
  - correctly state that claims should be treated as a whole.

Public Comments on Preliminary Examination Instructions

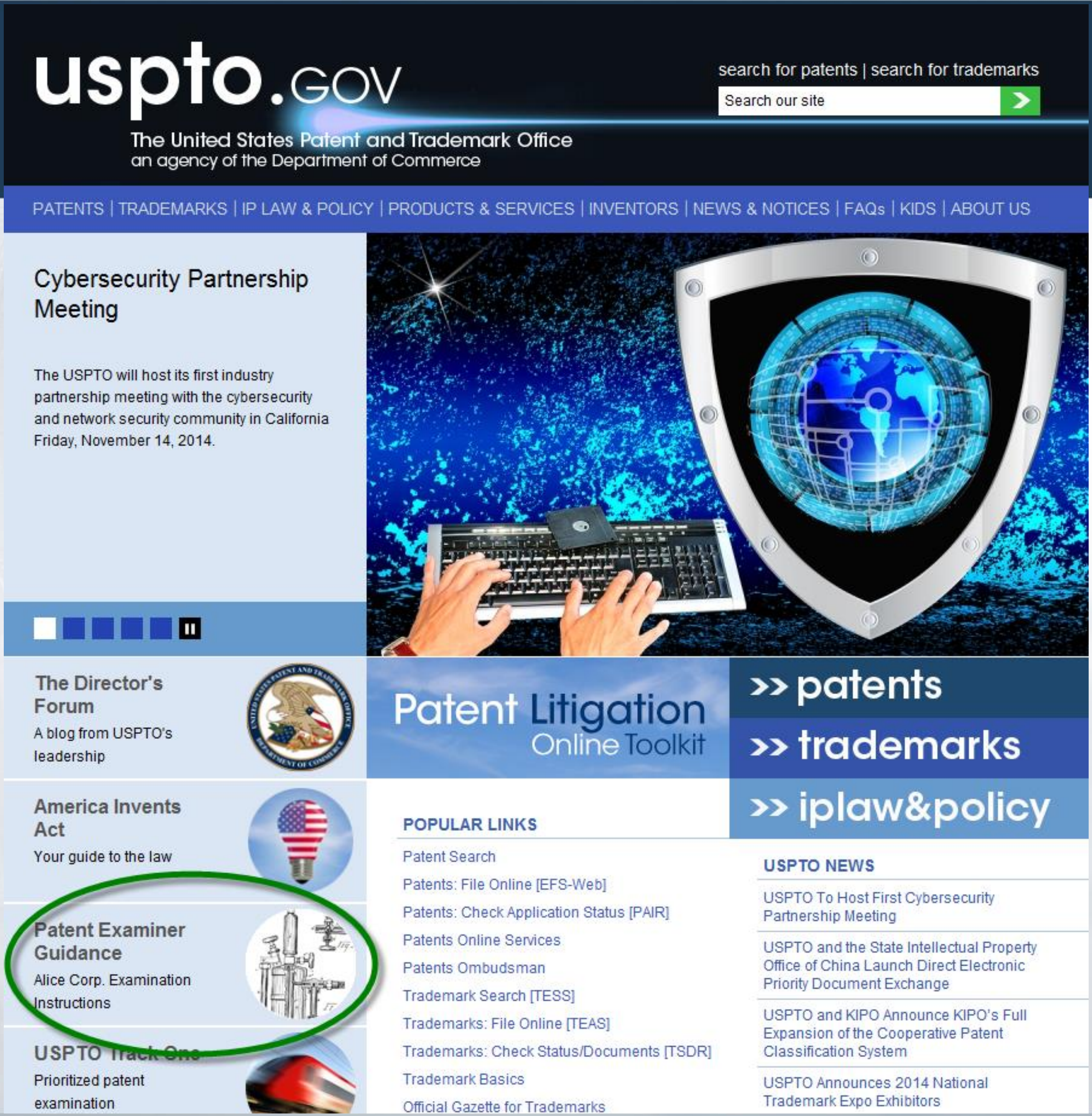
- A number of comments proposed modifications to the guidance, including that:
  - “significantly more” inquiry should focus on preemption and/or an “inventive concept.”
  - final guidelines should be more detailed and/or should provide examples.
  - “directed to” should be clarified and used consistently.

Public Comments on Preliminary Examination Instructions

- Some comments expressed a desire for more reasoned explanation in Office actions.
- There were mixed opinions on the impact of *Alice Corp.* with respect to what should be considered as an abstract idea.
- There were mixed opinions on whether future guidance examples should be limited to judicial precedent or expanded to other subject matter.
- A number of comments included specific proposed claim examples, examples of “abstract ideas,” guiding cases, and/or proposed changes to the language of the Instructions.

Next Steps: New Guidance

- Next iteration of guidance is now being developed and should issue soon.
    - Following the approach taken by the Supreme Court in *Alice Corp.*, the guidance is planned to address process and product claims directed to a judicial exception.
    - It is anticipated that there will be supplements with additional information and examples.
    - Public comments were considered in drafting this iteration and will be used in developing examples.
- The next iteration of guidance will again solicit comments from the public for further refinements in examination procedure.
- Federal Circuit decisions will be closely watched for further developments.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» trademarks
» iplaw&policy

The United States Patent and Trademark Office
an agency of the Department of Commerce

Cybersecurity Partnership Meeting

The USPTO will host its first industry partnership meeting with the cybersecurity and network security community in California Friday, November 14, 2014.

The Director's Forum
A blog from USPTO's leadership

America Invents Act
Your guide to the law

Patent Examiner Guidance
Alice Corp. Examination Instructions

USPTO Track One
Prioritized patent examination

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- Trademarks: File Online [TEAS]
- Trademarks: Check Status/Documents [TSDR]
- Trademark Basics
- Official Gazette for Trademarks

USPTO NEWS

- USPTO To Host First Cybersecurity Partnership Meeting
- USPTO and the State Intellectual Property Office of China Launch Direct Electronic Priority Document Exchange
- USPTO and KIPO Announce KIPO's Full Expansion of the Cooperative Patent Classification System
- USPTO Announces 2014 National Trademark Expo Exhibitors

Thank You

Q&A

Break

David Kinsinger

Vice President, Chief Patent Counsel, L-3

United States Patent and Trademark Office

November 14, 2014 in Menlo Park, CA

Effective Cybersecurity: Protecting Your Intellectual Property Assets

Cybersecurity Partnership
November 14, 2014
Silicon Valley USPTO

A City

- Think of a city somewhere unexpected that you have visited or would like to someday visit.

Need for Cybersecurity

- “Cyber threat is one of the most serious economic and national security challenges we face as a nation.”
- “America's economic prosperity in the 21st century will depend on cybersecurity.”

  --President Barrack Obama

The Value of Information

- In 1978, 83% of a firm’s value was associated with tangible assets, with 17% associated with intangible.
- By 1998, only 31% of the firm’s value was associated with tangible assets, with 69% associated with the value of their intangibles.
- 2014?

  - –Source: Edison in The Boardroom

    Authors: Julie Davis and Suzanne Harrison

Hope and Change

- How vulnerable are you to attack?
- Can I steal your data?
- Think of a number from 1 to 100.
- Could I possibly know what you are thinking?
- When did I know it?

Advanced Persistent Threats

- An internet-borne attack usually perpetrated by a group of individuals with significant resources, such as organized crime or a rogue nation-state
- “Emerging cyber tactics are designed to evade traditional cyber defenses and escape detection until it’s too late.”

Malware

- Malicious software or code that typically damages or disables, takes control of, or steals information from a computer system. Broadly includes viruses, worms, Trojan horses, logic bombs, rootkits, bootkits, backdoors, spyware, and adware.

A Weapon

- Think of a weapon, but make it something unusual or unexpected.

Cybersecurity Market

- $95 Billion in 2014
- $155 Billion by 2019
- Market Types:
  - Network Security; Endpoint Security; Application Security; Content Security; Wireless Security; Cloud Security
- Solutions:
  - Identity and access management; risk and compliance management; encryption; data loss protection; unified threat management; firewall; anti-virus; anti-malware

Cybersecurity Market

- In 2013, Cybercrime cost businesses an estimated $575 billion.
- "Evidence suggests a gap between the magnitude of exposure presented by cyber-risks and the steps, or lack thereof, that many corporate board have taken to address these risks."
- – SEC Commissioner Luis Aguilar
- NYSE security filings using the words "cybersecurity", "hacking", "hackers", "cyberattacks", or "data breach":
  - 2012 – 879 firms
  - 2013 – 1,288 firms
  - 2014 – 1, 517 firms

Mobile Computing

- Need to balance user security and convenience.
- Customers want convenience.
- Mobile environment is particularly vulnerable.
- “Mobile malware is winning.”
- Must approach solutions in a comprehensive, risked-based manner.

Insider Threats

- Edward Snowden
- Compartmentalization of critical information
- Data exfiltration prevention solutions
- Automated solutions to identify suspect behavior of insiders – advanced analytics
- Identity management
- User authentication
  - Biometric solutions
- Role-based access techniques
- “With Wi-Fi and high capacity jump drives, anybody can walk out of a room with 65 gigabytes of info on her keychain.”

The Internet

- “The internet is the guy with the gun.”
- “If it touches the internet, it can be taken.”
- “The only way to be safe is to remove yourself from the internet.”

Bank Night

- How do you get the attention of a room full of attorneys?
- It helps to know how you think.

Comprehensive I.P. Protection

- Trade Secrets
- Patent Portfolio
- Defensive Publishing
- Enabled Documentation
- IP Insurance
    - Cyber Insurance

Intellectual Property Protection

- Question: Patent or Trade Secret?
- Simple Answer: Both!
  - Adherence to Best Mode Requirement
  - Cyber Threats may shift the balance

A famous person

- Think of a famous person… someone that I would know, but that I would not expect.

- “The first thing you want in a new country is a patent office.”

–Mark Twain, 1889

L-3 NOTX Cybersecurity Software

- Enables threat information from multiple sensors to be combined and shared across organizations
- Coordinates a distributed defense strategy in response to designated threats
- Pushes the defense as close as possible to the sources of the threats
- Fast, Efficient, Scalable, Collaborative

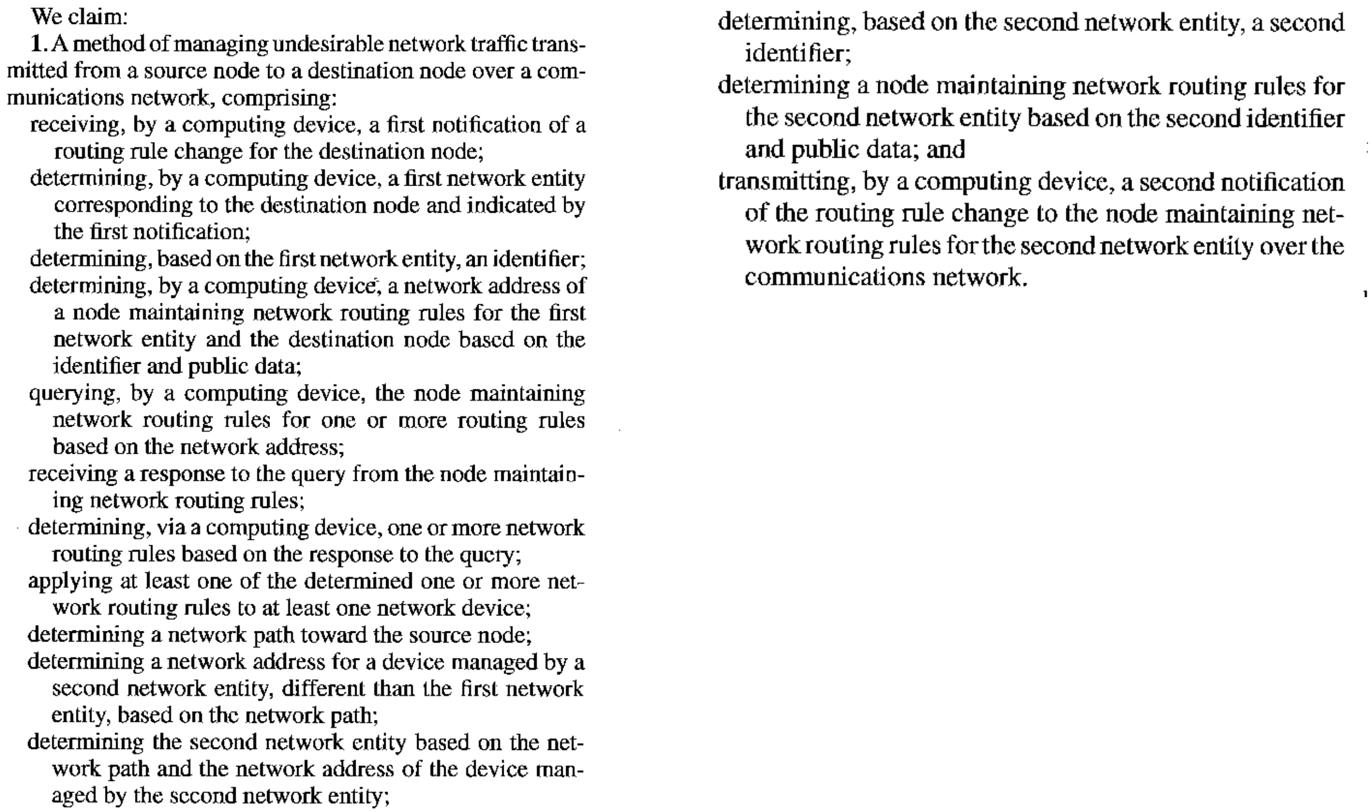
U.S. Patent 4,376,851

- Assignee: Phillips Petroleum Company

- We claim:

  1. Normally solid polypropylene, consisting essentially of recurring polypropylene units, having a substantial crystalline polypropylene content.

U.S. Patent 8,677,489



We claim:

1. A method of managing undesirable network traffic transmitted from a source node to a destination node over a communications network, comprising:

receiving, by a computing device, a first notification of a routing rule change for the destination node;

determining, by a computing device, a first network entity corresponding to the destination node and indicated by the first notification;

determining, based on the first network entity, an identifier;

determining, by a computing device, a network address of a node maintaining network routing rules for the first network entity and the destination node based on the identifier and public data;

querying, by a computing device, the node maintaining network routing rules for one or more routing rules based on the network address;

receiving a response to the query from the node maintaining network routing rules;

determining, via a computing device, one or more network routing rules based on the response to the query;

applying at least one of the determined one or more network routing rules to at least one network device;

determining a network path toward the source node;

determining a network address for a device managed by a second network entity, different than the first network entity, based on the network path;

determining the second network entity based on the network path and the network address of the device managed by the second network entity;

determining, based on the second network entity, a second identifier;

determining a node maintaining network routing rules for the second network entity based on the second identifier and public data; and

transmitting, by a computing device, a second notification of the routing rule change to the node maintaining network routing rules for the second network entity over the communications network.

Password-only authentication

- New authentication approaches will replace password
  - Fingerprint
  - Voice Recognition
  - Facial Recognition
  - Combined Approaches
    - Biometrics
    - Encryptic PIN’s
    - Secure Device Provisioning

4-D Telepathy

- Are your passwords protected and safe?
- If I can steal your password in a few minutes, what can the cybercriminal do?

The Law Firm as a Target

- ABA Model Rules of Professional Conduct: “A lawyer shall make reasonable efforts to prevent the inadvertent or unauthorized disclosure of, or unauthorized access to, information, relating to the representation of a client.”
- Protecting confidential client data is becoming more difficult.
- Survey: 89% of law 300 legal professionals said their firms send confidential information to clients via unencrypted email.
- Law firms have big bull’s-eye status because they are viewed as vulnerable and are know to maintain material that hackers would consider to be a of high value.

Proactive approach

- Assume you are a target
- Involve executive management
- Map and encrypt data
- Seek comprehensive security solutions from firewalls to antivirus programs to multilayers of defensive technology
- Train employees to understand cyber risks
- Plan for the worst
- Have a trained response team ready when a breach occurs

Cyber Insurance

- Standard insurance policies are not designed to address losses from data breaches.
- Businesses should consider specialty cyber policies for protection against data theft or loss.
- Factors to consider:
  - Damages or expenses covered
  - Type of information loss covered
  - Application to third-party vendors
  - Requirements for breach during specified periods
  - Requirements to maintain and update computer systems
- Policies should be tailored to match your cyber risks.

NIST Cyber Framework

- Voluntary risk-based compilation of guidelines that aims to help organizations identify, implement, and improve their cybersecurity stance
- Useful for communicating risk management by establishment of a detection baseline and aggregating and correlating the event data

NIST Framework Core

- Organized by five continuous functions:
  - **Identify**: managing cybersecurity risks to systems, assets, data and capabilities
  - **Protect**: controls and safeguards to protect assets or deter threats
  - **Detect**: continuous monitoring for proactive real-time alerts of cybersecurity events
  - **Respond**: policies and activities necessary for prompt responses to cybersecurity incidents
  - **Recover**: business continuity plans to recover capabilities after a breach

Acting on the NIST Framework

- Companies should adopt the guidelines as a tool to manage and mitigate cyber risk in combination with other risk-management tools and processes including cyber insurance.
- Four Steps
  1. Identify your executive business sponsor and engage
  2. Assess your current posture
  3. Define a target profile and execute
  4. Continuously monitor, communicate, and collaborate

Recommendations from the SEC

1. Use the NIST framework as Guidance
2. Institute broad structural changes to focus on appropriate Cyber-Risk Management
3. Maintain appropriate personnel
4. Be prepared!

Protect your IP Assets

- Be innovative, then protect your innovation.
- Be proactive not reactive.
- Be prepared to act.
- The game of Clue: Who, how, where?

Q&A

John Vandenberg

Partner, Klarquist Sparkman

United States Patent and Trademark Office

November 14, 2014 in Menlo Park, CA

Klarquist

Sec. 112(b): ***Nautilus*** ***…Packard … Miyazaki***

Cybersecurity Partnership

November 14, 2014; Silicon Valley USPTO, Menlo Park, California

John D. Vandenberg

Nautilus: Impact?

- Phrasing: "clarity and precision demand;" "clear notice;" "reasonable certainty"
- Unambiguous: Prohibits ambiguity
- Not *Post Hoc*: Rejects *post hoc,* claim-construction-first, hindsight approach
  - Do not first construe claim and then ask whether crystal ball showing that construction would have provided sufficient notice to artisan.
- How Precise?: Not "absolute precision," but must claim be as precise as the subject matter permits?

Nautilus: Supports *In re Packard*

- *In re Packard*, 751 F.3d 1307(Fed. Cir. 2014): "when the USPTO has initially issued a well-grounded rejection that identifies ways in which language in a claim is ambiguous, vague, incoherent, opaque, or otherwise unclear in describing and defining the claimed invention, and thereafter the applicant fails to provide a satisfactory response, the USPTO can properly reject the claim as failing to meet the statutory requirements of § 112(b)."
- S. Ct.: (1) Presumption of validity does not alter degree of clarity demanded; (2) Eliminating temptation to inject ambiguity "is in order;" (3) Not deciding: "whether deference is due to the PTO's resolution of disputed issues of fact."

Nautilus: Supports *Ex Parte Miyazaki*

- No Genuine Ambiguity: "we hold that if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in" rejecting the claim as indefinite.
- No Purely Functional Elements: A claim may not contain a "purely functional claim element with no limitation of structure" in the claim (expressly or under Sec. 112, ¶ 6), whether or not at the point of novelty.

Ex Parte Miyazaki,
89 USPQ2d 1207 (BPAI 2008) (precedential)

Recommendation 1

- USPTO: Enforce second holding of *Ex Parte Miyazaki* by prohibiting "purely functional" limitations. Encourage Sec. 112(f) elements:
    - Statutory safe haven from Sec. 112(b) if truly satisfy Sec. 112(f)
    - More likely to survive Sec. 101 challenge too … if disclosed "structure" is in the physical realm

Recommendation 2

- USPTO and Applicants: Do not treat a result as a function:
  - Sec. 112(f): "a means or step for performing a specified function"
  - Doctrine of Equivalents: "if it performs substantially the same function in substantially the same way to obtain the same result."
- Especially important to prohibit "result" claiming.

Recommendation 3

- USPTO: Break applicants' bad (ambiguity) habits:
  - Preambles that maybe are limitations
  - Language that maybe triggers Sec. 112(f)
  - Terms that maybe are functional.

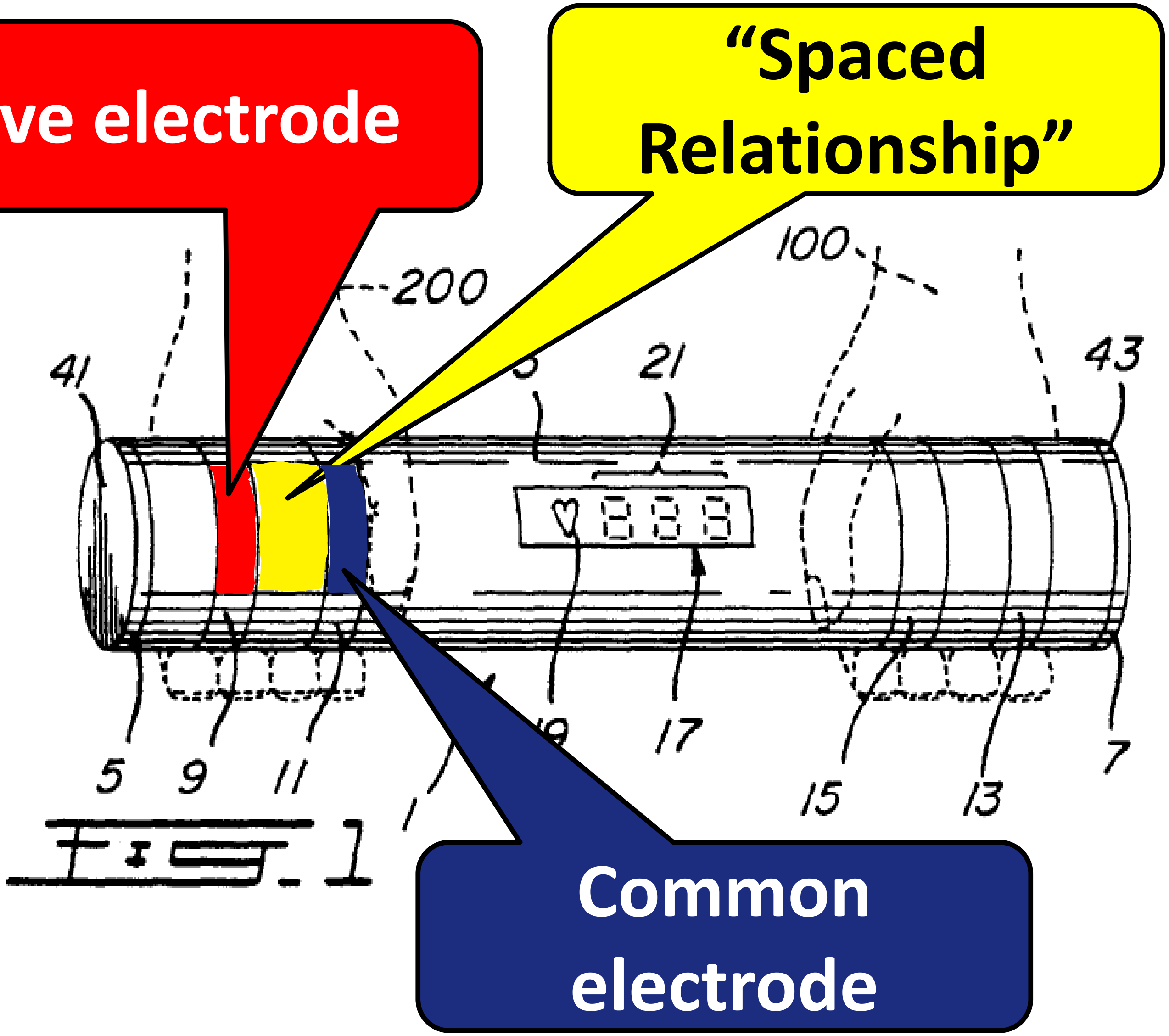
Recommendation 4

- USPTO and Applicants: Do not conflate enablement with particular and distinct claiming:
  - Enablement: Can artisan who wants to practice claimed invention do so?
  - Particular and Distinct Claiming: Can artisan who wants to avoid claimed invention and innovate just outside its boundary, see that boundary with reasonable certainty?

Recommendation 5

- USPTO: Apply Sec. 101 law hand-in-hand with Sec. 112(b) law:
  - “Abstract” ≈ not “Particular”
  - Limit preemptive footprint to balance needs of applicant-inventor vs. would-be-next-inventor

Nautilus: Old Design … Better Result

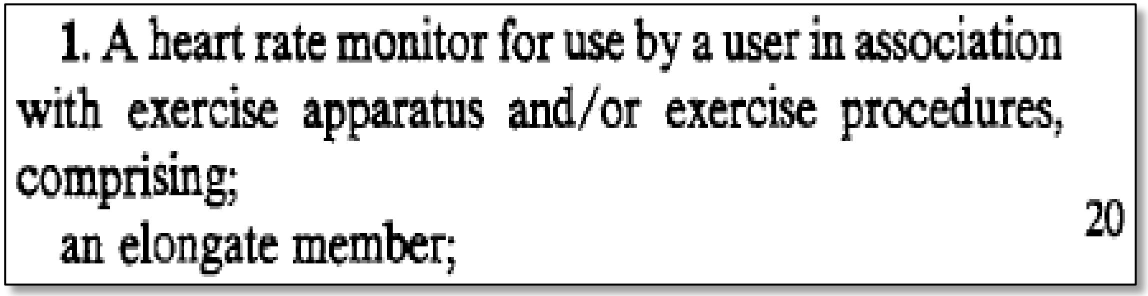


Live electrode

"Spaced Relationship"

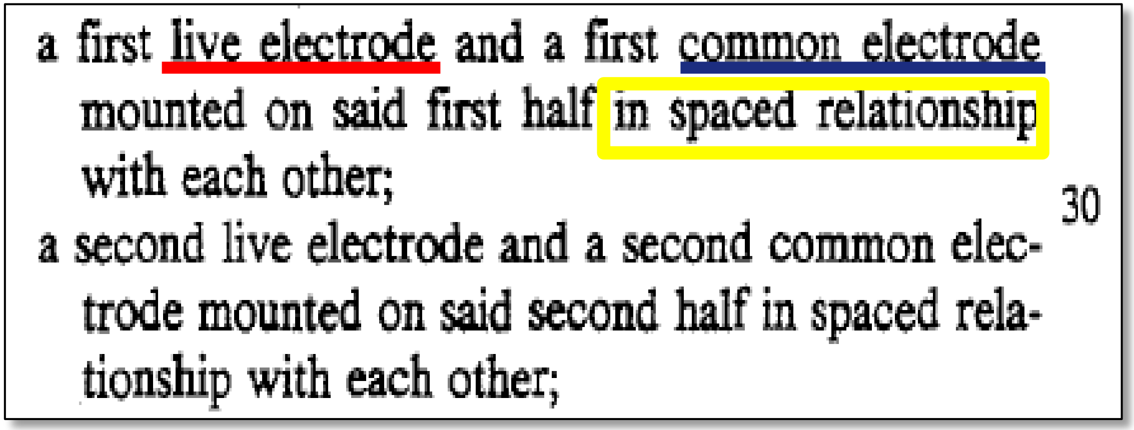
Common electrode

Nautilus: Is "Spaced Relationship" "Functional"?



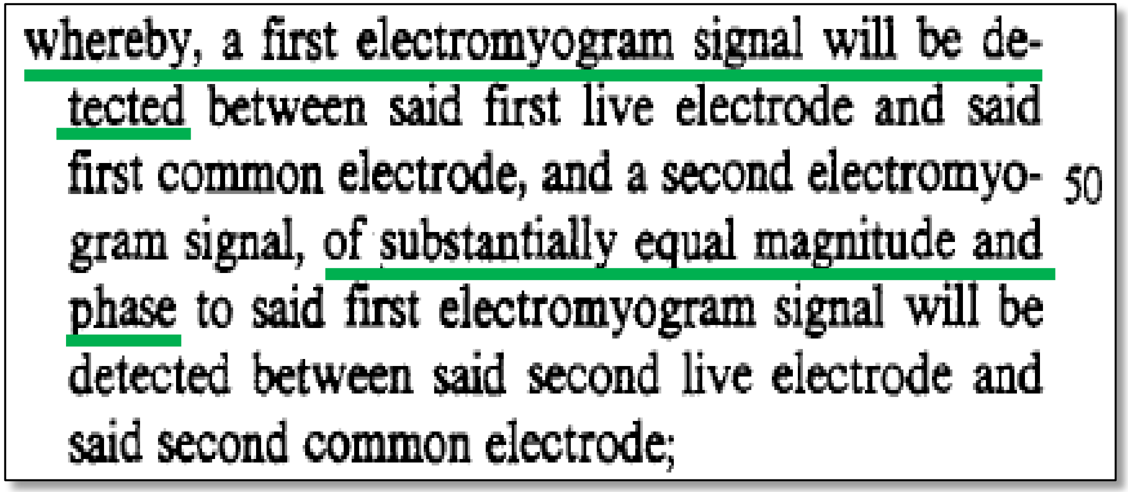
1. A heart rate monitor for use by a user in association with exercise apparatus and/or exercise procedures, comprising;

an elongate member;



a first live electrode and a first common electrode mounted on said first half in spaced relationship with each other;

a second live electrode and a second common electrode mounted on said second half in spaced relationship with each other;



whereby, a first electromyogram signal will be detected between said first live electrode and said first common electrode, and a second electromyogram signal, of substantially equal magnitude and phase to said first electromyogram signal will be detected between said second live electrode and said second common electrode;

Nautilus: Zone of Uncertainty

- If "spaced relationship" is itself functional, then:
  - Artisans could safely explore different techniques (e.g., new materials) for achieving claimed result with this old design.
- But if "spaced relationship" is not functional, then:
  - No way of achieving claimed result with this old design would be safe.

Q&A

Break

Open Panel Discussion

Moderator: John Cabeca

Panelists: Angela Ziegenhorn, David Kinsinger, John Vandenberg, Kevin Stine, Michael Cygan, Nestor Ramirez

Cybersecurity Partnership
Menlo Park, CA
November 14, 2014

Overview of Examiner Training on Functional Claiming

Michael Cygan
Senior Legal Advisor
Office of Patent Legal Administration

Recently Completed Examiner Training

- Four examiner training modules (one hour each):
  - Module 1: Identifying § 112(f) limitations
    - Recognizing § 112(f) limitations that do not use classic "means for" phrasing
    - Interpreting "generic placeholders" that serve as substitutes for means (e.g., unit, mechanism)
  - Module 2: Clarifying the record to place remarks in the file regarding when § 112(f) is, or is not, invoked
    - Establishing presumptions based on use of "means"
    - Providing explanatory remarks when presumptions are rebutted

Recently Completed Examiner Training

- Module 3: Interpretation and definiteness of 35 U.S.C. § 112(f) limitations
  - How to interpret § 112(f) limitations under the broadest reasonable interpretation (BRI) standard
  - Evaluating equivalents
  - Determining whether a § 112(f) limitation is definite under § 112(b)
- Module 4: Computer-implemented (software) § 112(f) limitations
  - Determining whether a sufficient algorithm is provided to support a software function

Panel Topic:

Examination Best Practices and Ways to Advance Prosecution

Panel Topic:
Stakeholder perspectives and Identifying topics for future partnership meetings

Closing Remarks

John Cabeca, Director, Silicon Valley USPTO

Thank You

United States Patent and Trademark Office

November 14, 2014 in Menlo Park, CA