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The USPTO Patent Examination Research Dataset: A Window on the Process of Patent Examination

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The USPTO Patent Examination Research Dataset: A Window on the Process of Patent Examination

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Abstract

A surprisingly small amount of empirical research has been focused on the process of obtaining a patent grant from the United States Patent and Trademark Office (PTO). One major reason for this lack of research has been the paucity of readily-available data on the examination of applications. The purpose of this data release is to rectify this situation by making data from the Public Patent Application Information Retrieval system (Public PAIR) more readily available to researchers and other stakeholders, in accordance with the Obama administration's Open Government Initiative. The data included in this data release are complete as of January 24, 2015 for all applications included in Public PAIR with filing dates prior to January 1, 2015. In order to be included in Public PAIR an application must be open to inspection by the public. A significant section of this documentation describes the selectivity issues that arise from the omission of "nonpublic" applications. We find that the selectivity issues were much more pronounced for applications received prior to the implementation of the American Inventors Protection Act (AIPA) in late 2000. The AIPA included provisions for the publication of applications prior to grant, thus increasing the inclusivity of Public PAIR for applications received by PTO starting in late November of that year. We also find that the extent of any selectivity bias will be at least partially determined by the sub-population of interest in any given research project. For instance, if a researcher was interested in studying the examination histories of issued patents, the selectivity issue would be of minimal concern. On the other end of the spectrum, using the Public PAIR data to study provisional applications would be more problematic.

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1 Introduction

Given the importance of technological innovation to the growth of industrialized economies (including in the US), a substantial amount of research has followed from pioneering work by Schankerman and Pakes (1986) and Griliches (1990) concerning patent grant activity. However, a surprisingly small amount of empirical research has been focused on the *process* of obtaining a patent grant from the United States Patent and Trademark Office (PTO). One major reason for this lack of research has been the paucity of readily-available data on the examination of applications at the various patent offices around the globe, including the PTO. The purpose of the release of the Patent Examination (PatX) Research Dataset is to rectify this situation.

In accordance with the Obama administration's Open Government Initiative, the PTO is making data from the Public Patent Application Information Retrieval system (Public PAIR) more readily available to researchers and other stakeholders. Until recently, Public PAIR data have only been available from the PTO website and could only be accessed on a case-by-case basis. This is suitable for stakeholders who are interest in the status of only a select few published applications, but it is very difficult for researchers to generate data sets using the current interface. Some stakeholders have attempted to scrape the Public PAIR data, but it is a slow process and the resulting data have often been incomplete.

The data included in Public Patent Examination Histories (PatX) Research Dataset are complete as of January 24, 2015 for all applications included in Public PAIR with filing dates prior to January 1, 2015. It is important to note that not all applications received by PTO are included in Public PAIR. In order to be included an application must be open to inspection by the public. There are several ways in which an application can become public and the focus of Section 3 is to describe any selectivity issues that may arise from the omission of "nonpublic" applications from Public PAIR.

Not surprisingly, we find that the selectivity issues were much more pronounced for applications received prior to the implementation of the American Inventors Protection Act (AIPA) in late 2000. The AIPA included provisions for the publication of applications prior to grant, thus increasing the inclusivity of Public PAIR for applications received by PTO starting in late November of that year. We also find that the extent of any selectivity bias would be at least partially determined by the sub-population of interest in any given research project. For instance, if a researcher was interested in studying the examination histories of issued patents, the selectivity issue would be of minimal concern. On the other end of the spectrum, using the Public PAIR data to study provisional applications would be more problematic.

The rest of this paper is organized as follows. Section 2 provides brief descriptions of Public PAIR and of the data files included in this release. It also details the selection of patent applications into Public PAIR and how the selection mechanism has changed over time. Section 3 builds on Section 2 by providing information on the coverage of the data and addressing selection issues. In particular it considers issues arising from the non-publication prior to grant of some applications even after the implementation of the AIPA in late 2000. The section also explores potential selection issues as they relate to modeling the examination process itself using the Transactions History data. Section 4 provides some concluding thoughts. The appendices include more detailed information regarding the specific data sets available as part of this initial Public PAIR data release.

2 Public PAIR

2.1 Introduction

The Patent Application Information Retrieval (PAIR) system provides Internet-based access to patent application status and history information. First deployed in 1998 and upgraded in 2003, PAIR displays a subset of data maintained in the internal Patent Application Location and Monitoring (PALM), Image File Wrapper (IFW), and Supplemental Complex Repository for Examiners (SCORE) systems to users via the PTO web site. Originally, PAIR was only available to applicants as a way for them to monitor the progress of their applications without contacting PTO directly. In 2004, selected records on PAIR were made available to the general public (thus, the term "Public" PAIR). However, Public PAIR does not make information available for all applications, but rather makes it available only for applications that have been made open to public inspection. This leads to some interesting selection issues, which is the focus of Section 3.

Even PALM, the data system upon which most of the metadata in Public PAIR is based, has some coverage issues. Figure 1 compares the official yearly application counts from 1961 through 1990 as reported by PTO's Patent Technology Monitoring Team (PTMT) with number of applications recorded in PALM for those same years.[1] There are very few PALM records for applications received in the 1960s (fewer than 400 *combined*) and it is not until 1977 that PALM coverage exceeds 10 percent of all applications. Coverage increases steadily through 1981, where PALM coverage was at roughly 100 percent. Coverage of patent applications recorded in PALM has remained at roughly 100 percent ever since.[2]

Public PAIR has traditionally utilized standard web-based screens to enable users to access application information for PTO published applications and issued patents over the Internet. The Public PAIR website is designed for viewing information corresponding to a single application at a time and thus is not well-suited for providing large sets of patent application status data for statistical analysis. Additionally, in December 2007, reCAPTCHA was implemented to deter data miners from consuming network resources, which had begun causing performance problems for back-end PTO information systems and databases. This has made it more difficult for outside researchers to access Public PAIR data on large numbers of applications.

Despite these difficulties some previous research exists. Perhaps the most well-known analysis of patent examination using PAIR data is the work of Lemley and Sampat (2008, 2010). In each paper, the authors consider the examination histories and ultimate outcomes of patent applications that were received by the PTO in January 2001 and that were available in Public PAIR as of April 2006. They focus on regular nonprovisional utility applications while ignoring plant and design applications as well as provisional filings and applications filed under the Patent Cooperation Treaty (PCT). Although the analyses are sound, they unfortunately suffer from the limitations of the data. For instance, Lemley and Sampat are not able to track changes in the composition of the application pool over time. They also are not able to track

[1] The yearly application counts can be found at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm. The PTMT counts are typically considered the USPTO's official numbers. The yearly application counts include all applications, regardless of final disposition.

[2] The PALM data used in this report has been filtered so that it is missing a very small percentage of applications. We discuss the filters placed on the data later in the report.

changes in their metrics of interest over time. Finally, the fact that the applications were filed immediately after the implementation of the AIA's pre-grant publication rules raises concerns regarding possible selection bias. Not surprisingly, there was a surge of filings prior to the implementation as applicants attempted to avoid pre-grant publication. However, any shortcomings of their work are due to the general lack of available data on the patent examination process.

Due to this general lack of available data, other analysts have relied on the use of surrogates for comprehensive micro-data on patent examination at the PTO. One example of this is the work of Frakes and Wasserman (2015). In order to answer the question of whether the PTO grants too many low-quality patents the author's filed a Freedom of Information Act (FOIA) request for yearly aggregates on measures such as the number of applications filed, the number of applications allowed, the number of applications disposed, the numbers of continuation and request for continued examination (RCE) filings. This Public PAIR data release should relieve such analysts from having to make such FOIA requests (and remove any burden to the PTO in responding to such requests) and likely improve the quality of analyses by such outside scholars.

2.2 The Sections of PAIR Included in This Data Release

The Public PAIR data are arranged in several sections or "tabs" as found on its website. In Exhibit 1 we provide a look at the first data tab, known as the "Application Data" tab. At the top of the webpage there are several tabs, which users can access to find various types of information regarding an application of interest. In this section we provide brief descriptions of the tabs included in this data release along with relevant information regarding some of the data elements. More details on all of the data elements included in this data release can be found in Appendices A through F.

Please note that we have fully replicated the Public PAIR data – available as of January 24, 2015 – for all applications with filing dates prior to January 1, 2015. We have not attempted to correct entry, miscoding, or typographical errors, as we believe that individual researchers will want to have the freedom to deal with such data issues as they see fit. In the appendices, we highlight some of the data issues that we have found while creating this documentation.

2.2.1 Application Data Tab

This tab provides information regarding the application itself. This includes the application number, filing date, the name(s) of the inventor(s), the name of the examiner to whom the application was most recently docketed, the group art unit of the examiner,[3] the class and subclass(es) to which the application was assigned,[4] the most recent status of the application, the patent number (in cases where the application had

[3] The PTO examining corps is broken out into Technology Centers (TCs), which cover broad technological areas. TCs are broken out into smaller group art units that focus on very detailed and particular types of technology. Each patent application that is received by the PTO is assigned to a group art unit for examination based on the specific technology embodied by the underlying invention. For more details regarding the current group art units and the technology centers to which they belong, please refer to http://www.uspto.gov/patent/contact-patents/patent-technology-centers-management.

[4] An application's class and subclass define the very specific technological field of the underlying invention. For (much) more information of the classification of patent applications please see http://www.uspto.gov/patents-application-process/patent-search/classification-standards-and-development. Note that, given the date that the data were obtained, the classes and subclasses are described using US Patent Classification codes rather than the new Cooperative Patent Classification codes.

granted), and a small-entity status indicator,[5] among other items. For more information regarding the data elements included in the "Application Data" data release, see Appendix A.

The "Application Data" tab also includes information on the type of application. In what follows we provide quick descriptions of the types of applications received by USPTO and recorded in Public PAIR. More detailed information can be obtained from the relevant chapters of the Manual of Patent Examining Procedure(MPEP), which is available online at http://www.uspto.gov/web/offices/pac/mpep/.

Regular Nonprovisional Applications.[6] By far, the most common type of application received by the USPTO is the nonprovisional application. These applications, referred to as "regular" applications in the Public PAIR data, are meant for examination, in contrast to provisional applications, which we will discuss later. Such an application may be issued as a patent as long as it meets certain statutory requirements of utility, novelty, non-obviousness, enablement, etc.[7] However, a regular nonprovisional application needs to be complete before examination can commence. A regular nonprovisional application is not considered complete unless it contains, among other things, at least one claim; a specification meant to disclose the underlying subject matter or invention; drawings, when necessary; and an executed oath or declaration.[8]

There are three different types of patents that can be applied for. The most common is the utility patent which is issued for a new and useful process, machine, manufacture, or composition of matter. A utility patent may also be issued for a new and useful improvement of any of the above. Design patents are issued for new, original, and ornamental designs, embodied in or applied to an article of manufacture.[9] The final type of patent is the plant patent. Such patents are issued for new and distinct, invented or discovered asexually reproduced plants including cultivated sports, mutants, hybrids, and newly found seedlings.[10]

Provisional Applications. Since 1995, inventors have had the ability to file what are known as provisional applications for utility and plant patents with the USPTO. Provisional applications provide inventors with a way to establish an early effective filing date in a later-filed regular nonprovisional application. Since they are not examined, provisional applications do not need to include any claims or an oath or declaration. They also need not provide any disclosures regarding known prior art. However, a provisional application does need to include a specification that would meet the written description and enablement requirements.[11] It also must provide the names and residence addresses of all inventors.

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[5] "Small entities" have traditionally paid lower patent examination and other fees to the PTO. Entity status is based on the owner of the patent right being applied for. Small entities are typically individuals, small business concerns consisting of no more than 500 employees, or non-profit organizations. Recently a new "micro entity" status was created.

[6] Note that nonprovisional applications are referred to as "regular" applications in the Public PAIR data. Thus, we will use the term "regular nonprovisional application" in this documentation.

[7] A very detailed description of patentability can be found in Chapter 2100 of the MPEP, which can be found on the PTO website at http://www.uspto.gov/web/offices/pac/mpep/mpep-2100.html. A much less detailed description can be found at http://www.uspto.gov/patents-getting-started/general-information-concerning-patents

[8] We provide a discussion of the examination of regular nonprovisional applications in Section 2.2.2.

[9] Chapter 1500 of the MPEP provides more information on design patents. It can be accessed at http://www.uspto.gov/web/offices/pac/mpep/mpep-1500.html.

[10] Chapter 1600 of the MPEP provides more information on plant patents. It can be accessed at http://www.uspto.gov/web/offices/pac/mpep/mpep-1600.html.

[11] Written description and enablement are described in 35 U.S.C. 112(a) and require that "(t)he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact

Provisional applications expire 12 months after filing. An applicant who files a provisional application must file a corresponding regular nonprovisional application during the 12-month pendency period of the provisional application in order to benefit from the earlier filing of the provisional application.[12] In addition, the claimed subject matter in the later-filed regular nonprovisional application must have support in the provisional application and at least one inventor in common with the inventors named in the provisional application.[13]

Applications Filed Under the Patent Cooperation Treaty (PCT). The PCT allows an applicant to file one "international application" and to have that application acknowledged as a basis for filing regular nonprovisional national phase or regional filings in as many PCT member states as the applicant designates.[14] For PCT applications filed since 2004, international search reports have been made available to the applicants within 16 months of the application's priority date.[15] The World Intellectual Property Office (WIPO) normally publishes each PCT application 18 months after the priority date. The applicant has 30 months from the priority date to convert the PCT filing into what is known as a national phase application in each jurisdiction that the applicant chooses.[16] This usually amounts to the payment of the necessary fees in each jurisdiction and the provision of necessary translations. At that point the national phase application is subjected to the procedures for patent grant in each jurisdiction.[17]

The PTO serves as both a receiving office and international searching authority (ISA) under the PCT. Receiving offices do the initial processing of the PCT applications and then forward them to the appropriate ISA. For each PCT application, the ISA conducts a prior art search of the invention claimed in international application by searching in at least the minimum documentation defined by the PCT. For international applications filed since 2004, the ISA issues a written opinion which is forwarded to both the applicant and to the International Bureau (IB) within WIPO. The applicant then has two months to amend claims in the initial PCT application before WIPO publishes it 18 months from the priority date.[18]

PCT applications are similar to provisional applications in that they cannot, in and of themselves, mature into granted patents.[19] In the United States, either a national stage entry or a regular nonprovisional application, claiming the benefit of a PCT application, must be filed before a national stage examination can begin. The resulting regular nonprovisional application may ultimately grant as a patent. PCT applications are different from provisional applications and similar to regular nonprovisional applications

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terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention."

[12] Once a provisional application is filed, an alternative to filing a corresponding regular nonprovisional application is to convert the provisional application to a nonprovisional application by filing a grantable petition under 37 C.F.R. 1.53(c)(3) requesting such a conversion within 12 months of the provisional application filing date.

[13] For more information on provisional applications see http://www.uspto.gov/web/offices/pac/mpep/s601.html and http://www.uspto.gov/patents-getting-started/patent-basics/types-patent-applications/provisional-application-patent.

[14] Since 2004, PCT applications have automatically designated all PCT members.

[15] In many cases, a PCT application may claim priority to a previously-filed application.

[16] Some jurisdictions require entry into the national phase prior to the thirtieth month after the priority date. In such cases applicant can obtain the benefit of delaying the entry into the national stage until 30 months from the priority date in these jurisdictions by filing a demand for international preliminary examination within 19 months of the established priority date of the PCT application.

[17] For more details on the basic flow of a PCT application through the system, see http://www.uspto.gov/web/offices/pac/mpep/s1842.html.

[18] For the most detailed information regarding the Patent Cooperation Treaty and the treatment of PCT applications, refer to the MPEP Chapter 1800 at http://www.uspto.gov/web/offices/pac/mpep/mpep-1800.html.

[19] An initial prior art search conducted by the PTO in its function as an ISA does not constitute a formal examination.

in that they need to be more complete. For instance, a PCT application must include at least one claim. However, the PCT application does not need to contain an oath or declaration.[20]

Patent Reexamination Proceedings. Some applications in the Public PAIR data amount to reexamination proceedings for previously issued patents. There have historically been two types of reexamination proceedings at the PTO. The first type of patent reexamination is known as ex parte reexamination. Any person may file a request for ex parte reexamination, although for a proceeding to continue the PTO must determine that a request has raised a substantial new question of patentability affecting any claim of the patent. The prior art considered during the reexamination may include new prior art that had not been considered during the initial examination but only questions of novelty and non-obviousness can be reconsidered. When the examination is concluded the PTO issues a reexamination certificate which reflects on the status of all claims following the reexamination.[21]

Inter partes reexamination of a patent that issued from an original application filed on or after November 29, 1999, was available prior to September 16, 2012.[22] It differed from ex part reexamination in that only a third party could request an inter partes reexamination.[23] It also differed in that the third party requester could participate throughout the proceeding. When inter partes reexamination of a patent was completed, the PTO would issue an inter partes reexamination certificate, which reflected on the status of all claims following the reexamination.[24]

Patent Reissue Requests. Patent reexamination is one of several ways that a previously-issued patent may be corrected or amended. Another way is through the filing of a reissue application. In order for a patent to be reissued, there needs to be at least one error in the patent that makes it either wholly or partially invalid or inoperable. The error can be the result of a mistake in the specification or drawings or the result of the patentee claiming either more or less than it had a right to claim. Other errors that may lead to a reissue include those regarding inventorship and claims of benefit to either foreign or domestic applications.[25] Applications for reissue must contain the same parts required in an application for an original patent. No new subject matter may be introduced. However, the scope of the claims can be broadened as long as the reissue application is filed within two years of the issue date of the original patent.

The examination of a reissue application is generally the same as for a regular nonprovisional original application, although reissue applications are typically given priority over regular nonprovisional applications on an examiner's docket. Another wrinkle to the examination of reissue applications is that an examiner typically cannot begin work examining one until at least two months have passed since the announcement of the filing of the reissue has appeared in the Official Gazette. This allows time for

[20] However, when the application enters the national phase in the U.S., it must include such an oath or declaration.
[21] For much more detailed information on ex parte reexamination, see Chapter 2200 of the MPEP at http://www.uspto.gov/web/offices/pac/mpep/mpep-2200.html.
[22] On September 16, 2012, inter partes reexamination was replaced by inter partes review before the Patent Trial and Appeals Board.
[23] In an ex parte reexamination, either the patentee or a third party can request the reexamination.
[24] For much more detailed information on inter partes reexamination, see Chapter 2600 of the MPEP at http://www.uspto.gov/web/offices/pac/mpep/mpep-2600.html.
[25] Patent applications may claim what is called the benefit of the filing date of an earlier application if the underlying inverntion had been disclosed in the previous application and the applications share at least one inventor in common. The benfit derives from the fact that only prior art that came into existence before the filing date can generally be considered during patent examination. An error in claims of benefit may thus allow for the consideration of additional prior art during reissue examination.

members of the public to file protests to the potential reissue. However, there are extenuating circumstances (such as ongoing litigation) that may shorten or even eliminate the two-month delay period.[26]

2.2.2 Transaction History Tab

This tab provides information on the majority of the administrative transactions and transactions that occurred between the applicant and the examiner during the prosecution of the application. These transactions include the docketing of the application with the examiner, the filing of various necessary forms, the Office actions issued by the examiner, and the applicant's responses to these Office actions, among others. It is from the data in this tab that analysts can develop the clearest picture of what occurs during patent examination. The purpose of this section is to provide a simplified description of types of events that occur during a "typical" examination of a regular nonprovisional application. Given that PTO receives hundreds of thousands of such applications each year, there are certainly many ways in which a specific examination may vary from this simplified description. However many potential users of these data may find such a simplified description useful. For more information regarding the data elements included in the "Transaction History" data release, see Appendix B.

The data provided on the "Transaction History" tab provide an essential window into the patent examination process. The process begins with the filing of a patent application. When the application is received by USPTO, it goes through an extensive pre-examination review to make certain that all necessary forms have been filed, all relevant fees have been paid, and that the application is complete. A complete application requires, among other things, a written description of the invention, at least one claim, and any necessary drawings.[27] As part of this review, the application is classified according to its subject matter and forwarded to the relevant TC for examination. Within the TC, the application is then assigned to an examiner in one of the group art units. It can take up to several months to over a year for an application to be placed on an examiner's docket.

Examiners generally work on applications in filing date order although they have some discretion in this matter. Therefore, even after the application has reached the examiner's docket, it may remain unexamined for some time while the examiner works on other applications. When the examiner considers the application, she may issue a restriction requirement if multiple inventions appear in the claims. The applicant would then be required to choose claims drawn to a single invention.[28] Once an initial claim set for examination has been selected, the examiner evaluates those claims for compliance with the applicable statutes and regulations. She checks to make certain that the claims are directed to patent-eligible subject matter, that the written description is adequate to both describe and enable the claimed invention, and that the claims clearly define the boundaries of the invention. She also conducts a prior art search to determine whether the claimed invention is new and nonobvious. She looks for previous patents, published patent applications, and non-patent literature to determine whether the invention is anticipated by a single reference, or rendered obvious either by a single reference or by a combination of references.

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[26] For more information on the examination of reissue applications see sections 1401 through 1470 of Chapter 1400 in the MPEP at http://www.uspto.gov/web/offices/pac/mpep/mpep-1400.html.

[27] See MPEP 601.01. A filing date is assigned when the application is complete.

[28] If the applicant wishes to pursue patent protection on the additional inventions that are not chosen, one or more divisional applications may be filed. Such divisional applications retain the benefit of the filing date of the original application, and therefore have a longer pendency from filing of the original application to issue, even though the prosecution of the divisional application itself may not have been particularly lengthy.

Based on this examination, the examiner may either allow all claims that have been examined, or may issue a Non-Final Rejection that rejects or objects to one or more of the claims.[29] It is also possible for the examiner to issue an Office action indicating that although the subject matter of the examined claims appears to be allowable, certain formal requirements still remain and must be addressed.

The applicant is generally given three months to respond to a non-final Office action, but may take up to three additional months in exchange for additional fees. The applicant typically responds with some combination of arguments and amendments to the claims to clarify them or to narrow their scope to avoid the prior art. The applicant may also file information disclosure statements, which are used to comply with the applicant's duty to disclose any information material to patentability. The information typically includes potential prior art, particularly when revealed to the applicant during the examination of a related foreign or domestic application. The applicant may also ask for a telephonic or in-person interview with the examiner. After the examiner receives the applicant's response, she reevaluates the claims to determine whether the rejections or objections have been overcome. If no issues remain, the applicant is informed that the claims are allowable. Otherwise, the examiner will typically issue a Final Rejection, thus closing the examination process at least temporarily.

After receiving a Final Rejection, the applicant has several options. First, the applicant may choose not to continue to seek patent protection for the invention by abandoning the application, either by express request or simply by failing to respond within the specified period.[30] Second, the applicant may continue to seek patent protection before the examiner. This may be done either by filing a new continuation application which is entitled to benefit of the filing date of the original application,[31] or by filing a Request for Continued Examination (RCE) of the original application.[32] Finally, the applicant may file an appeal with the PTO's Patent Trial and Appeals Board (PTAB)[33] arguing that the PTAB should reverse the examiner's rejections.

If examination continues before the examiner, the applicant has further opportunities to amend claims and make further changes. Again, the examiner may or may not allow the claims and could ultimately issue further Non-Final and Final Rejections. The applicant can again respond and re-open prosecution, and this process can potentially go through several rounds. It is important to note that examination ends in either an issued patent or an abandonment. There is no such thing as a terminal rejection.

2.2.3 Continuity Data Tab

This tab provides information on applications from which the current application claims benefit.[34] These are often referred to as parent applications. It also lists all later applications which claim the benefit of the current application. These are often referred to as child applications. The continuity data provided in

[29] If the examiner decides to allow all claims at this stage, the communication sent to the applicant is referred to as a first action allowance.
[30] This is not an applicant's only opportunity to abandon an application as applications may be abandoned at any time.
[31] Continuation applications may be pursued at any time. See Section 2.2.3 for more information on continuations.
[32] Prior to the introduction of the RCE, applicants could file Continued Prosecution Applications (CPAs). In both cases, the continuations maintain the same serial number.
[33] Prior to the AIA, the PTAB was known as the Board of Patent Appeals and Interferences, or BPAI.
[34] "Claiming the benefit" refers to cases where a new application claims the filing date of a previous application for purposes of setting a priority date. The priority date is the date that determines what prior art can affect the patentability of the claims included in the patent application. Thus, a new application may be filed in June of 2014 but "claim the benefit" of a previous application that was filed in June of 2013. In such a case, no possible "prior art," which became available in the intervening year, can be considered during the examination of the new patent application.

Public PAIR can be used to determine when such applications are filed and to create families of applications. For more information regarding the data elements included in the "Continuity Data" data release, see Appendix C.

There are several ways that a new regular nonprovisional application can claim the benefit of an application that had been previously filed with the PTO. For instance, a continuation application is an application for the same invention claimed in a prior regular nonprovisional application. A continuation application must be filed while the prior application is still pending. There can be no changes to the subject matter disclosed in the prior application and the application must have at least one inventor in common with the prior application. To be considered a proper continuation application, it must claim the benefit of the prior regular nonprovisional application under 35 U.S.C. 120 or 365(c). [35]

There are two similar ways for a child application to claim the benefit of prior regular nonprovisional application. The first is known as a continuation-in-part (CIP) application while the second is known as a divisional application. A CIP is similar to a continuation application with the only difference being that a CIP adds subject matter that had not been disclosed in the prior application from which it is claiming benefit. A divisional application is a later application for an independent or distinct invention, carved out of a pending regular nonprovisional application disclosing and claiming only subject matter disclosed in the pending application.[36] Divisional applications are typically filed in response to restriction requirements made by examiners (see Section 2.2.2). A divisional application must claim the benefit of the prior regular nonprovisional application from which it was carved under 35 U.S. 121 or 365(c).

There are two ways in which a new nonprovisional application may claim the benefit of a previously filed PCT application. First, most regular nonprovisional applications claiming the benefit of a prior PCT application are what are known as national stage entries from international applications. Such applications are filed in compliance with 35 U.S.C. 371. To avoid abandonment of the original PCT application, an applicant must submit to the PTO all necessary paperwork and fees within 30 months of the PCT application's priority date. The paperwork includes, but is not limited to, copies of the international application (translated into English if the original application was in a different language) and an oath or declaration from the inventor if not filed with the original application.

It is possible to file a U.S. national application under 35 U.S.C. 111(a) during the pendency (prior to the abandonment) of an international PCT application which designates the United States without completing the requirements for entering the national stage under 35 U.S.C. 371. The filing of continuations of an international (PCT) application designating the U.S. has been used primarily in instances where there has been difficulty in obtaining a signed oath or declaration by the expiration of the time for entry into the national stage. Because these continuation applications historically resulted from a need to bypass the requirements of 35 U.S.C. 371, they became known as "bypass" applications. Since applicants are now notified of missing or defective oaths or declarations and/or translations, and are given a grace period to respond, the use of this practice with respect to continuation applications has diminished. To obtain benefit under 35 U.S.C. 120 and 365(c) of a prior PCT application designating the U.S., the continuing application must include a specific reference to the prior international application, be co-pending with the

[35] Note that an application claiming the benefits of a provisional application under 35 U.S.C. 119(e) should not be called a "continuation," "continuation-in-part," or "divisional" of the provisional application. Rather, it should be called a nonprovisional application of a provisional application.

[36] Claims may be amended prior to examination but no new subject matter can be introduced.

prior international applications, and have at least one inventor in common with the prior international application.

The continuity data also records the relationships between regular nonprovisional applications and the prior provisional applications from which they claim benefit. As we noted in Section 2.2.1., provisional applications expire 12 months after filing. Up to the time of expiration, an applicant who had filed a provisional application may file a regular nonprovisional application claiming the benefit of the provisional application under 35 U.S.C. 199(e). Although these are not technically considered continuations, the relationship between the provisional and nonprovisional applications is recorded in the continuity data.

2.2.4 Foreign Priority Tab

Under 35 U.S.C. 119, an applicant may claim the benefit of a patent application, originally filed in a foreign country, for the same invention. Generally, in order to make such a claim, the U.S. application must be filed within 12 months of the filing date of the foreign application.[37] This tab provides the application identifier of the foreign application from which benefit is being claimed, the country in which the foreign application was filed, and the filing date of the foreign application. Our examination of the "Foreign Priority" data has indicated that there are some errors regarding claims of foreign priority. In some cases, applicants have claimed foreign priority to U.S. applications. These cases should have been included in the continuity data instead of in the foreign priority data. For more information regarding this issue and the data elements included in the "Foreign Priority" data release, see Appendix D.

2.2.5 Patent Term Adjustments Tab

This tab provides information on the delays to the examination process that were determined by PTO to have been caused by the PTO itself or by the applicant. The patent term adjustment (PTA) provisions of the AIPA allow for term adjustment: (1) if the PTO fails to initially act on an application within fourteen months of its filing date; (2) if the PTO fails to respond to a reply or appeal by applicant within four months of the reply or appeal; (3) if the PTO fails to act on an application within four months of a PTAB or court decision in an application containing allowable claims; (4) if the PTO fails to issue a patent within four months of the date the issue fee was paid; (5) if the PTO fails to issue a patent within three years of its filing date; (6) if issue of a patent was delayed due to imposition of a secrecy order; (7) if issue of a patent was delayed due to an interference proceeding; or (8) if the issue of a patent was delayed due to successful appellate review.

PTO-caused delays of type (1) through (4) are known as "A" delays. A delay of type (5) is known as a "B" delay. Finally delays of types (6) through (8) are known as "C" delays. Generally, the total PTO-caused delay will be the sum of the "A", "B" and "C" delays. However, any overlapping days between "A" delays and either "B" or "C" delays are not double-counted. In other words the overlapping days are subtracted from the overall sum to generate the measure for the total delay caused by PTO.

To determine the final PTA, the total applicant-caused delay is subtracted from the PTO-caused delay.[38] This net delay is ultimately added to the life of the issued patent. Thus, if the net delay were equal to 100

[37] See Section 213 of Chapter 0200 of the MPEP at http://www.uspto.gov/web/offices/pac/mpep/s213.html.
[38] Applicant-caused delays typically arise from failing to respond to an office action within three months. Note that if an applicant fails to respond within 6 months, the PTO considers the application abandoned.

days, then the patent would expire 100 days after the twentieth anniversary of the patent's earliest application filing date. For more details regarding the PTA data release, see Appendix E.

2.2.6 Address & Attorney/Agent Tab

This tab lists the correspondence address for the applicant along with the names and phone numbers of the attorneys or patent agents who are/were handling the case for the applicant. For more details regarding this part of the data release, see Appendix F.

2.3 How an Application Becomes Public

This section focuses on how applications are selected into Public PAIR. In short, if an application file has been deemed available for public inspection, it is included in Public PAIR. Availability for public inspection is covered under subsections 1.11 and 1.14 of Section 37 of the Code of Federal Regulations (37 CFR). Subsection 1.11 is concerned with what files are open to the public, whereas subsection 1.14 is concerned with preserving the secrecy of patent applications but also describes circumstances under which patent applications would be made available to for public review.

Under 37 CFR 1.11, the specification, drawings, and all papers relating to the files of the following are all open to inspection by the public.

1. Patents[39]
2. Published applications[40]
3. Statutory invention registrations[41]
4. Reissue applications[42]
5. Requests for reexamination[43]

Information regarding the prosecution of granted patents becomes public because one of the main purposes of the patent system is to serve as a system of notice, so almost all patents are public documents.[44] Each patent describes the underlying invention (often referred to as subject matter) covered by the patent as well as the patent holder's claims which legally define the patented invention. At this point, the invention has certainly been disclosed to the public and thus the application can also be made public. The same logic can be applied to reissue applications and requests for reexamination as they involve existing patents that are already public.

One of the provisions of the AIPA provided for the pre-grant publication of nonprovisional utility and plant patent applications as well as PCT applications that entered the national stage under 35 U.S.C.371. Applications are generally published after the expiration of a period of eighteen months from the earliest of: (1) the U.S. filing date; (2) the international filing date; or (3) the filing date of an earlier application from which a benefit is sought (such as a pending provisional application or PCT filing).At the point of publication, the subject matter has been disclosed, thus the application and its prosecution history can be made available to the public. Note that provisional and design applications are not published prior to

[39] See 37 C.F.R. 1.11(a).
[40] See 37 C.F.R. 1.11(a). Subsection 1.14 clarifies that these include published abandoned and pending applications.
[41] See 37 C.F.R. 1.11(a).
[42] See 37 C.F.R. 1.11(b).
[43] See 37 C.F.R. 1.11(c).
[44] A small number of patents remain non-public for national security reasons.

grant. Also, applicants who do not seek patent protection outside of the U.S. can request that their applications not be published prior to grant.[45]

Under 37 C.F.R. 1.14, the pool of applications made available for public inspection is expanded to include certain unpublished pending or abandoned applications, including provisional applications and PCTs. Such an application may be made public if it is *identified* in a U.S. patent, a statutory invention registration, a U.S. patent application pre-grant publication, or an international patent application that was published as part of the PCT program. Another way that such an application may become public is if benefit of the application is *claimed* in a domestic application that has issued as a U.S. patent, published as a statutory invention registration, or published prior to grant as a U.S. patent application publication, or an international patent application that has published as part of the PCT program.

One major take-away from this is that the mechanism for selection into Public PAIR changed in late 2000. Applications received prior to the implementation of the AIPA in late November of that year were not subject to pre-grant publication. Such an application could be included in PAIR only if it issued as a patent or if a later public application/patent either identified it or claimed some benefit from it. An application received after AIPA implementation could be included in PAIR as long as it published prior to grant, even if it neither resulted in an issued patent nor was ever mentioned in any later published applications/patents. Thus, we would expect a greater percentage of applications filed after AIPA implementation to be included in Public PAIR. In the following section, we examine the selection in detail.

3 Stylized Facts Regarding Selection into Public PAIR

3.1 Data

In order to analyze how selection of records into Public PAIR has evolved over time, we create a merged data set of applications that appear in our public data release and those applications – received prior to January 1, 2015 – that are available in PALM. The PALM data that we use include information on 11,950,153 applications filed between 1910 and 2014, although fewer than 3 percent of the applications found in PALM were filed prior to 1981.[46] Our PALM data are also filtered in that they don't include applications that have been kept secret for national security reasons, applications with mis-assigned or inactive application numbers, or applications that have non-numeric group art unit identifiers.[47]

The Public PAIR data release includes records on 9,231,261 applications of which 9,197,962 (99.6 percent) can be found in the PALM data that we used. More than 90 percent of the PAIR applications that could not be found in the PALM data include no metadata, such as information on date of application.[48] The remaining records that could not be found in the PALM data have issues with certain data elements

[45] See Graham and Hegde (2014) for an analysis of the use of pre-grant non-publication requests.
[46] See Figure 1 (discussed in Section 2.1 above) for an illustration of the lack of PALM coverage prior to 1981.
[47] Group art units are identified using 4-digit numbers. The group art unit for a particular application is the one to which the primary examiner of the application is assigned. Occasionally examiners move on to other types of business units within PTO, but continue to be responsible for certain applications even after they have moved on. Thus it is possible for the data to indicate that the application has been assigned to the Office of the Chief Information Officer or the Office of Policy and External Affairs, or some other non-patent examining business unit. This is very rare, however.
[48] These are usually the result of older patents, the documents of which have been scanned and added to the system for a variety of reasons. Records for these applications generally only include images of the documents.

(especially the group art unit identifier) that would filter them out of the PALM data that we are using. Overall, roughly 77 percent of the records in the PALM data are available in the Public PAIR data release.

3.2 Inclusion in Public PAIR

In order to examine selection of records into Public PAIR, we first break out the applications in the PALM data by whether or not they were filed before November 29, 2000. The applications filed before this date are considered "pre-AIPA" filings and those filed on or after this date are considered "post-AIPA" filings. We then identify the post-AIPA filings that were published prior to grant. To determine whether an application had published prior to grant, we searched for evidence of a pre-grant publication number and/or publication date.

Table 1 presents basic counts of records in each of the three categories broken out by whether or not they had been selected into Public PAIR. We again note that 77 percent of all of the records from PALM are available in the Public PAIR release. Not surprisingly, all of the applications that were filed post-AIPA and had been published prior to grant are in Public PAIR. Among the post-AIPA filings that were not published prior to grant, roughly 55 percent are in Public PAIR.[49] Overall, roughly 78 percent of the post-AIPA filings are available in the data release. The results here indicate that inclusion in Public PAIR increased somewhat from the pre-AIPA era, where roughly 74 percent of the applications are available for analysis using Public PAIR.

This doesn't appear to be much of an increase in the inclusion rate, given the introduction of pre-grant publication post-AIPA. To help explain this, we present Figure 2, which illustrates the percentage of total filings from PALM that can be found in Public PAIR by year of filing since 2001. For the years 2001 through 2012 this percentage ranges between 80 and 86 percent. In 2013 it falls to 66 percent and in 2014 it falls to 33 percent. Because of the 18-month publication lag, many applications that were filed in these years were not yet public at the end of 2014 and thus were not available in Public PAIR.[50] Excluding the applications from 2013 and 2014, we find that roughly 83 percent of the post-AIPA filings are available in Public PAIR, which is a 9-percentage point increase (or 12-percent increase) over the inclusion rate for the pre-AIPA era.

We also consider inclusion in Public PAIR as a function of application type. Figure 3 presents the percentage of filings from PALM that can be found in Public PAIR by year of filing since 1981 for the four most common types of applications: regular nonprovisional utility, regular nonprovisional design, provisional, and PCT filings. These make up roughly 98 percent of all applications. Again, we note the extreme censoring in 2013 and 2014.

For regular nonprovisional utility applications, inclusion in Public PAIR is lowest in the early 1980s, where coverage is at roughly 70 percent. Coverage grows to roughly 80 percent in the late 1990s, but then jumps from 80 percent in 2000 to 95 percent in 2001 and stays constant through 2012.[51] Thus, for regular

[49] Such applications would become available for public inspection by either issuing as a patent or through 37 CFR 1.14.
[50] The fact that so many applications filed in 2014 were public by the end of the years is a reflection of the fact that many of the applications claimed the benefit of previous applications that had been filed long before.
[51] Fluctuations in the coverage for the pre-AIPA era are driven by fluctuations in the issue rate along with changes in the use of continuations and the likelihood that the continuations would become public. For applications filed in the late 1990s, the likelihood that a child application, filed post-AIPA, would become public increased dramatically. This increased the likelihood that any random application from this period would be more likely to become public, even without issuing as a patent.

nonprovisional utility applications there is a very pronounced change in the selection mechanism starting in late 2000 and the Public PAIR coverage is very good in the post-AIPA period.

The story is similar for PCT filings although coverage in Public PAIR is already nearly 100 percent for the years immediately prior to the implementation of the AIPA. There is a curious hole in the Public PAIR data as roughly 17 to 18 percent of the PCT filings from 2000 and 2001 are missing. Outside of that anomaly, however, the data on PCT filings is fairly complete, at least in terms of the numbers of records included in Public PAIR.

The story is very different for provisional applications, which are underrepresented in the Public PAIR data. Fewer than half of the applications can be found in Public PAIR and there is no increase in the inclusion rate in the early 2000s. Such applications don't publish prior to grant and a provisional application only becomes public if a later published application or patent claims benefit from the provisional. Provisional applications are meant to be used as place-holders by applicants who need additional time to determine if filing for a patent would be feasible or in their best interest. Thus it is not surprising that a significant percentage expire without the filing of follow-on regular or PCT applications.

Finally, for regular nonprovisional design applications, inclusion in Public PAIR is lowest for those filed in the 1980s. The inclusion rate increases steadily by filing year throughout the 1990s, reaching 87 percent in 2000. After that the rate fluctuates between 80 and 85 percent until 2013 when the strongest censoring sets in (although the censoring starts to make an impact for earlier years as well). Since design applications are not published prior to grant, it is not surprising that we see no increase in the inclusion rate for such applications filed after the implementation of the AIPA. As we see in Figure 4, the inclusion rate for the design applications is basically the issue rate for these applications, with a handful of abandoned or pending applications made public due to the public nature of any later applications claiming benefit from them.

This is a very different story from the one for regular nonprovisional utility applications (see Figure 4), where the issue rate is usually significantly lower than the PAIR inclusion rate. Consider, for example, the utility applications filed in 1992. Seventy-five percent of these applications ultimately became public, but only 61 percent had been issued as patents as of the end of 2014. Given the filing date, the applications that make up the difference must have become public either by being identified by later published applications or patents or by having such applications or patents claim the benefit of these earlier applications. Even more interesting is the fact that the patent issue rate (by year of filing) for regular utility applications remains below 70 percent for applications filed since the implementation of the AIPA, but the Public PAIR inclusion rate remains at 95 percent, reflecting the importance of the pre-grant publication of regular utility filings in making the contents of these filings available for public inspection.

3.3 Pre-Grant Publication Status

In this section, we delve more deeply into the pre-grant publication status of regular utility applications. Figure 5 presents information on the numbers of applications for the years 2001 through 2014 broken out into the following three categories: (1) published prior to grant (in PAIR by default), (2) unpublished prior to grant but still in PAIR, and (3) unpublished prior to grant and not in PAIR. The vast majority of the applications filed between 2001 and 2012 were published, with pre-grant publication rates averaging roughly 90 percent starting in 2004. Among the unpublished applications, the share that can be found in

PAIR has fallen over the period, which may reflect the fact that applications filed later in the decade are more likely to still be pending (see Figure 6).

There are two main reasons why a regular nonprovisional utility application would not publish prior to grant. First, applicants who are not seeking patent protection outside of the U.S. for the subject matter included in the application can request non-publication. Second, applications that are no longer pending as of the projected pre-grant publication date (usually 18 months after filing) are not published. Thus, if an application is abandoned or issued prior to this date, it is not published prior to grant. Figure 7 presents how the reasons for non-publication have evolved since 2001. Note that there are a large number of applications for which none of these criteria apply for the early years of the period (2001-2002) and for 2013.[52] The anomaly for 2013 is relatively easy to explain in that a significant share of these "unpublished applications" had not reached the 18-month threshold for pre-grant publication as of the end of 2014. Thus, many of these will ultimately transition from an unpublished to a published state. The anomaly in 2001 and 2002 is mainly due to issues with the timing of pre-grant publications. It took the PTO a fair amount of time to be able to meet the 18-month target for pre-grant publication during the first year or two of the program. Thus applications may have abandoned as late as 24 months after filing and still avoided pre-grant publication. Because of this issue, we focus mostly on the period from 2003 through 2012 for our analysis in Figure 8.

Figure 8 illustrates that the majority of unpublished regular nonprovisional utility applications have gone unpublished prior to grant due to a request for non-publication. A little more than two-thirds of the unpublished applications filed from 2003 through 2012 include such a request. The second most common cause for non-publication prior to grant is early abandonment, which accounts for 22 percent of the cases. Early patent issue only accounts for roughly 7 percent of the cases. Figure 8 illustrates the heterogeneity in the causes for non-publication between those unpublished applications that can be found in Public PAIR and those that cannot be found. We see that the unpublished applications that can be found in PAIR are much more likely to have included a non-publication request (74 percent vs. 60 percent) or to have issued early (15 percent vs. 0). The unpublished applications that cannot be found in PAIR are more likely to have abandoned early (38 percent vs. 6 percent).

3.4 Selection

Many researchers will want to use the Public PAIR data to make inferences regarding the entire population of applications received by PTO. As we have seen, the likelihood that an application will be included in Public PAIR is dependent upon what type of application it is (regular nonprovisional, provisional, PCT), the year that it was filed, whether it issued as a patent, whether a later application claimed benefit from it, its pre-grant publication status (for utility and plant applications filed since November 29, 2000), among other factors. We do know that if an application issued as a patent, it is included in PAIR. Thus, at least for the post-1981 period, if a researcher is interested in the examination histories of patents, there should be no selection issues. The same can be said for the population of applications that published prior to grant. Such applications, even if they don't issue as patents or are still pending, are available in Public PAIR, although researchers should keep the pre-grant publication lag in mind.

[52] We do not include 2014, because while most of the applications from this year were not published, most did not meet the requirements for publication.

This section deals with the question of whether the regular nonprovisional utility applications in Public PAIR are a representative sample of the population consisting of all such applications to PTO. To do this, we compare the entire PALM population with applications that can be found in Public PAIR as well as those that cannot be found in Public PAIR across several dimensions. Because the implementation of the AIPA had an effect on how applications are selected into Public PAIR, we break up the comparisons into two parts. First, we consider the pre-AIPA era and then we focus on the post-AIPA era in which pre-grant publication was introduced.

Thus, each of the tables presented in the remainder of this sub-section is broken out into two panels, (a) and (b). Panel (a) presents a comparison across the dimension of interest among (1) all applications available in PALM, (2) those applications available in Public PAIR, and (3) the remaining applications available in PALM but not available in Public PAIR. The applications considered in this panel were all filed between January 1, 1981 and November 28, 2000. Panel (b) presents a comparison across the dimension of interest among the same subpopulations for the post-AIPA era from November 29, 2000 through December 31, 2012. However, the applications available in Public PAIR are further disaggregated into two subcategories: (2a) applications that were published pre-grant and (2b) applications that were not published pre-grant. The applications filed in the post-AIPA period that are not available in Public PAIR are all unpublished (pre-grant) applications by default. Given the large number of observations, the differences across subgroups discussed below are all very significant from a statistical point of view. The perhaps more compelling question is whether any biases introduced using the selected Public PAIR population are significant from a policy or economic perspective.

3.4.1 Disposal status of application

Table 2 presents the results for disposal status. There are three possible disposal statuses. The application may have resulted in an issued patent or an abandonment, or may still be pending. In the pre-AIPA era, it is clear that using the Public PAIR data to estimate the patent issue rate would tend to lead to inflated results. The results from PALM indicate an issue rate of roughly 67 percent for applications filed between 1981 and the implementation of the AIPA, while the results from Public PAIR indicate an 87-percent issue rate. The reason for this is that almost all applications from the pre-AIPA era that led to issued patents became public, but only about 30 percent of abandoned applications ever became public.[53] Interestingly, there are a small number of applications (one-tenth of 1 percent of all "issued") that were assigned patent numbers but have no issue date in PALM and are left out of Public PAIR. It's possible that these patents were withdrawn just prior to issue.

For the post-AIPA era, there is again a difference in the patent issue rates between the Public PAIR and PALM applications, but it is much smaller. In this case, 62 percent of the applications from Public PAIR issued versus 58 percent from PALM. The abandonment rate and number of pending applications were lower using the Public PAIR data. The overall difference in issue rates is less pronounced for applications that were published prior to grant and much more pronounced for the unpublished applications. Unpublished applications found in Public PAIR are much more likely to have issued while those not found in Public PAIR are much more likely to have abandoned. Overall these results indicate that the selection effect varies dramatically by the era in which the application was filed and by publication status.

[53] There are a total of 1,071,491 pre-AIPA abandoned applications in the PALM data (Panel (a), Column 1) of which only 318,760 (or 29.7percent) can be found in Public PAIR (Panel (a), Column 2).

Figure 9 illustrates the patent issue rates one would calculate by year of *disposal* using the PALM data and the Public PAIR data for the years 1985 through 2014. For our purposes we have defined the patent issue rate as the percentage of all disposals in a given calendar year that were issued as patents. Although these issue rates are somewhat naively calculated,[54] we can still argue that the PALM issue rate is the "true" issue rate, since it includes the entire population of applications. Again, it is clear that using the Public PAIR data to estimate the patent issue rate would tend to lead to inflated results. The difference in the issue rates is worst for disposals prior to 1990, where it usually exceeds 20 percentage points. By the late 1990s the difference is typically less than 20 percentage points and by 2005 the difference shrinks to 5 percentage points. In the more recent years, the difference is in the 2- to 3-percentage point range.

3.4.2 Pendency to disposal

The backlog of pending patent applications has been a concern of the PTO and its stakeholders for several years. Because of this, researchers have been interested in examining the changes in application pendency over time and the factors that drive it.[55] Figure 10 compares the median pendency for all disposed applications by year of disposal (since 1985) as calculated using the PALM and Public PAIR data. The results indicate that, prior to 2001, the PAIR results are inflated but only slightly. From 2002 onward, the results using the PALM and Public PAIR data are practically identical.

Taking the comparisons a step further, Figure 11 shows the comparison of the median pendency for all *abandoned* applications by year of disposal (again, since 1985). Here we see that through 1997, the median pendency for abandoned applications calculated using the Public PAIR data typically exceeded the median pendency calculated using the PALM data by 15 to 20 percent. In the early 2000s, the Public PAIR pendency appears to drop below the PALM pendency. There's actually an absolute drop in the median pendency in the PAIR data between 2001 and 2002, that we do not see when we use the PALM data. This is the result of the change in the selection mechanism for inclusion in Public PAIR. In the early 2000s, the mix of the abandoned applications that would be public and included in PAIR would be weighted toward those that were filed more recently, from 2001 onward. These applications would have been pending for a shorter period of time at abandonment. Thus, weighting the Public PAIR sample of abandoned applications toward those with a shorter pendency would drive down the median pendency for these abandonments. This is an example of how care needs to be taken when using the Public PAIR data. As the results for all abandonments show, there was no drop in pendency for abandoned applications in the early 2000s, despite the fact that the Public PAIR results seem to indicate that there was.

3.4.3 Underlying technology of invention

Table 3 presents results regarding the technology mixes of applications found in PALM and Public PAIR for the pre- and post-AIPA eras. The technology area for each application is based on the group art unit of the primary examiner. Group art units are organized into technology centers (TCs). Currently, there are eight TCs. The technology areas in Table 3 are defined using the TCs, with special attention paid to changes in TC designation over time. The technology areas map to the current TCs as follows:

- Biotechnology (TC 1600)
- Chemicals (TC 1700)
- Computers/Communications (TCs 2100, 2400, 2600)

[54] See Carley et al. (2013) for a discussion of the pitfalls of estimating patent issue rates.
[55] A good example of this work is Mitra-Kahn (2013).

- Electrical (TC 2800)
- Mechanical (TC 3700)
- Miscellaneous (TC 3600)

There are also two other small categories, "Other" and "Missing." The "Other" category can include coding errors as well as older group art units that don't map easily into the current TCs.[56]

Any biases in technology area tend to be small. For the pre-AIPA era there is a small bias in the Public PAIR results toward the electrical technology area and away from the biotech area. For the post-AIPA era, the Public PAIR data appear to be representative of the total population of regular nonprovisional utility applications as found in the PALM data. There are some more pronounced differences between the pre-grant published and unpublished applications in the post-AIPA era. The applications that were published prior to grant are more likely to be in biotech (10.2 versus 8.7 percent), chemicals (13.7 versus 9.3 percent), and electrical (22.8 versus 18 percent), while the unpublished applications are more likely to be in the mechanical (18.2 versus 15.8 percent) and miscellaneous (19.1 versus 12.6 percent) categories. There is also a significant difference in the distribution of technology between the unpublished applications that can be found in Public PAIR and those that cannot.

3.4.4 Small-entity and foreign-priority status

Table 4 presents the results on small-entity and foreign-priority status. Applications from individual inventors, non-profit firms, and for-profit firms with fewer than 500 employees are granted small-entity status. Such entities are entitled to discounts on fees paid to PTO. In the pre-AIPA era, we see that the Public PAIR data are representative of the total population of applications, when it comes to small-entity status. Roughly 28.5 percent of all applications were filed by such entities and these entities filed 28.5 percent of the applications that could be found in Public PAIR. Any bias, although statistically significant given the large number of observations involved, is still quite small. The results are almost identical for the post-AIPA era.

Breaking out the post-AIPA applications by pre-grant publication status, we find that the unpublished applications are significantly more likely to have been filed by small entities, especially those that are not available in Public PAIR. For small entities, 68 percent of the unpublished applications were not published prior to grant due to a request for non-publication, 16 percent due to early abandonment, and 10 due to early issue. For the sake of comparison, only 53 percent of unpublished applications from large entities were not published prior to grant due to a request for non-publication over the same time period.[57]

As far as foreign priority is concerned, for the pre-AIPA era the results using the applications available from Public PAIR are slightly biased toward claims of foreign priority. Forty percent of records that could be found in Public PAIR included such a claim versus 37.5 percent of all records in PALM. The applications that cannot be found in PAIR are quite different as only 30 percent claim foreign priority. The results are similar in the post-AIPA era, with the applications from Public PAIR slightly more likely to claim foreign priority than applications in general (40 percent versus 38 percent). Not surprisingly, the applications that were not published prior to grant are less likely to claim foreign priority as only 12 percent do so. Still this number seems a little high, given that applications claiming foreign priority

[56] See Kesan, Marco and Miller (2014) for a description of how the older group art units map into the current TCs.
[57] The time period here (December 2000 through the end of 2012) differs slightly from the time period considered in Figure 8 (2003-2012).

should almost always publish prior to grant. The data indicate that 96.4 percent publish.[58] Most (65 percent) of the unpublished foreign priority-claiming applications were filed prior to 2003, so it may be the case that this result reflects the pre-grant publication backlog that PTO experienced in the two years following the implementation of the AIPA.

3.4.5 Parent type

Many new applications to the PTO claim the benefit of an application that was filed at an earlier date. Such new applications are often referred to as children and the applications being claimed the benefit of are often referred to as parents. There can be entire extended families of applications encompassing several generations. In our analysis that follows we consider each application's most immediate parent.

In Table 5, we compare the distribution of immediate parent type for all applications in PALM and for those that can be found in Public PAIR. These parent types include foreign, PCT, provisional, and regular nonprovisional US applications. The parent type for cases where the parent is a regular nonprovisional US application is further broken out by the type of continuation that the current application is: continuation-in-part (US-CIP), regular continuation (US-CON), or divisional (US-DIV).

In the pre-AIPA era, the applications that cannot be found in Public PAIR are significantly different from those that can be found in Public PAIR. However, comparing the population that can be found in Public PAIR with the entire population of applications, the parent-type distributions are similar, if not exactly so. The applications from PAIR are slightly more likely to have a parent, especially a foreign parent.

In the post-AIPA era, the parent-type distribution for the Public PAIR applications is also similar to the distribution for the population of all applications from PALM. The parent-type distributions are quite different across the two eras, however. For instance, in the pre-AIPA era over 40 percent of new applications had no parent. In the later era, only a little over 25 percent had no parent. Most of this can be accounted for by an increased use in PCT and provisional applications. From 1981 through 2000, only 8 percent of new applications had a most recent parent that was either a PCT or provisional filing; in the later period, 32 percent did.

The applications that were not published prior to grant were quite different from those that were with regard to parent type in the post-AIPA era. Half of the unpublished applications did not claim benefit from a previous filing, compared with 25 percent of the published applications. This is not surprising, because claiming the benefit of a previous application would shorten the lag from filing to scheduled publication date and, all else equal, increase the odds that an application would publish. Even among unpublished applications, the ones that can be found in Public PAIR are significantly different from those that cannot be found in Public PAIR.

3.5 Checking for Selection Issues in Examination Process Flow

In our discussion of any potential selection issues in using the Public PAIR data to analyze the examination process, we consider the creation of a process flow diagram similar to the one created by Mitra-Kahn set al. (2013).[59] The diagram describes the basic patent prosecution system in the US, using data from the 2001-2005 cohorts of patent applications. The data came from PALM and reflected the

[58] There are 1,520,395 applications with a claim of foreign priority (Panel (b), Column 1). Of these, 1,465,455 (or 96.4 percent) were published pre-grant (Panel (b), Column 2(a)).
[59] The diagram can be found on page 114 of Mitra-Kahn (2013) and is referred to as Figure D1.

history for more than 1.5 million regular nonprovisional utility applications filed between 2001 and 2005 as of the spring of 2013. To describe to patent examination process, PALM contains no fewer than 2000 event codes corresponding to more than 300 status codes for ongoing applications. Thus, the diagram is greatly simplified, but still represents the most common events and statuses described in Section 2.2.2 above, such as pre-examination processing, docketing of the application with an examiner, Office actions, applicant responses to the Office actions, and the ultimate disposal status of the application. In our analysis here, we compare the flow diagram obtained using all applications from PALM, filed between 2001 and 2005, with the diagrams obtained using the applications, filed in the same time-period, that can be found in Public PAIR and using the applications that cannot be found in Public PAIR (and are a subset of the applications that were not published prior to grant).

In Figure 12 we recreate the process flow diagram using the PALM data, current through December of 2014.[60] Roughly 2 percent of the applications filed between 2001 and 2005 were abandoned prior to being docketed with an examiner. Once the remaining applications were docketed, most of them went through an initial search and examination and received a Non-Final Rejection. Roughly 11 percent of the docketed cases (10.6/98.1) received a first-action allowance or, in other words, were allowed without receiving an initial Non-Final Rejection. Two-thirds (58.6/86.8) of the applications that received Non-Final Rejections ultimately received a Final Rejection. Of those applications that received a Final Rejection, slightly more than half filed an RCE, while 9 percent filed an appeal.

As far as the ultimate disposal of the applications is concerned, 33.7 percent of the applications resulted in abandonments, while 65.2 percent were issued. Roughly 1 percent of the applications were still pending as of December 31, 2014. Five percent of the abandonments occurred very early in the process before docketing, 53 percent followed a Non-Final Rejection, 35 percent followed a Final Rejection, 3 percent followed an appeal, and 4 percent followed an allowance. Fifteen percent of the allowances were first action allowances, 56 percent followed a Non-Final rejection, 14 percent followed a Final Rejection, 12 percent followed an RCE, and 3 percent followed an appeal.

In Figure 13, we recreate the process flow diagram using the Public PAIR data, current through December of 2014, for those applications that can be found in Public PAIR. The Transaction History data in Public PAIR contains nearly 1,900 event codes corresponding to 225 different statuses for the applications that are included. Each of the statuses/events considered in the process flow diagram can be found in the Transaction History data. There are two main differences in the results obtained using the two data sources. First, using the Public PAIR data, we miss the abandonments that occur during the pre-examination period. This is largely due to the 18-month lag in pre-grant publication.[61] Second, the issue rate we obtain using the Public PAIR data is roughly 5 percent higher than the one we obtain using the PALM data (68.6 percent vs. 65.2 percent), reflecting the general inflation of the patent issue rate discussed earlier.[62] Otherwise the results are quite similar. For instance, 11.1 percent of the applications that are docketed are allowed on first action versus 10.8 using the PALM data. Among others, we found the following additional similarities.

[60] Note that the percentage of applications that can be identified as "disposals" is higher in Figure 12 than in the figure from Mitra-Kahn et al. (2013). This is due to the fact that several of the applications that were pending when the earlier figure was created had either issued or been abandoned in the meantime.
[61] Although follow-on applications to provisional and PCT filings have a shorter lag, it is unlikely that such applications would abandon prior to docketing.
[62] The corresponding abandonment rate is lower as well, but these are two sides of the same coin, so to speak.

- 67.9 percent of the applications that received Non-Final Rejections ultimately received a Final Rejection versus 67.5 percent using the PALM data.
- 51.5 percent of those applications that received a Final Rejection filed an RCE versus 51 percent using the PALM data.
- 8.9 percent of those applications that received a Final Rejection pursued an appeal versus 8.9 percent using the PALM data.

In Figure 14, we again recreate the diagram using PALM data on applications that could not be found in Public PAIR (and are unpublished by definition). Here the results are quite different from those found using all application found in PALM or those that could be found in Public PAIR. First, more than one-quarter of the applications had abandoned prior to being docketed. Second, none of the applications had issued, which reflects the Public PAIR selection mechanism. A little less than 4 percent had been allowed, but all had abandoned prior to issue. Third, the likelihood that an application that received a Non-Final Rejection would ultimately receive a Final Rejection is lower (59 percent vs. 67.5 percent). Fourth, the RCE filing rate is roughly one-third lower.

Therefore, we again see significant differences between those applications that are included in Public PAIR and those that are excluded, but the excluded group is small enough that the resulting population of applications selected into Public PAIR looks very similar to the overall population of applications across most dimensions. However, we still recommend caution in interpreting patent allowance and issue rates as they are still slightly inflated by roughly 5 percent.

4. Conclusions

The purpose of this paper has been to introduce PTO's Public PAIR data release and to examine how representative the applications included in the Public PAIR data are the total population of patent applications to PTO. There are several results that researchers should keep in mind when using these data.

First, the data are very sparse for the period prior to 1981. This can be attributed to the lack of coverage of the PALM system which is the major data system that feeds into Public PAIR. In fact, PALM coverage doesn't even reach 10 percent until 1977. We can say nothing about the representativeness of the Public PAIR data for the pre-1981 period as we have no point of comparison.

Second, Public PAIR coverage increased significantly after the implementation of the AIPA in late 2000, especially for regular nonprovisional utility applications. In the twenty years prior to the AIPA, Public PAIR coverage averaged 74 percent overall and 77 percent for regular nonprovisional utility applications. These numbers jumped to 83 percent and 95 percent, respectively, for the period from 2001 through 2012. There is also an increase in the coverage for provisional applications filed in the period just prior to the implementation of the AIPA. This is consistent with the idea that the increased likelihood that any follow-on regular nonprovisional applications (filed a year later) would become public. This would cause the provisional to become public and be included in Public PAIR. Still, the provisional applications are significantly under-represented in the data release, so it would be difficult to study applicant behavior with regard to such applications. Coverage for nonprovisional design patent applications appears unchanged by the AIPA, which is not surprising because the pre-grant publication rule does not apply to such applications.

Third, the patent issue rates calculated using these data are inflated. This is a direct result of the selection mechanism into Public PAIR. All applications that result in issued patents become public and are thus included in Public PAIR. Some, but not all, of the applications that do not result in patents are included. The bias is particularly large for the pre-AIPA period, where the patent issue rate is 20-percentage points too high when calculated using the Public PAIR data. The inflation in the issue rate is greatly diminished for the post-AIPA period but, at 4-percentage points, it is still significant. This can be especially problematic if one wants to compare patent issue rates over a long time period. Again considering the results from Figure 9, let's say we want to consider the changes in the issue rate over the 20-year period from 1985 through 2005. Using the PALM data, we would detect a general upward trend in the patent issue rate. Using the Public PAIR data, we would detect a general downward trend. The Public PAIR result would be driven significantly by the change in the selection mechanism that occurs in the early 2000s. The two issue rates converge over several years following the AIPA.

Fourth, we find that the regular nonprovisional utility applications that are left out of Public PAIR are generally quite different across several dimensions from those included in the data. However, the coverage is good enough that the applications available in Public PAIR are, for the most part, surprisingly representative of the entire population of regular nonprovisional utility applications to PTO, especially in the post-AIPA era. Some small differences do surface, however. As far as technology goes, for the pre-AIPA era, the Public PAIR results seem to be slightly biased toward the electrical technology and away from the biotechnology area. For both the pre- and post-AIPA eras, the results from Public PAIR tend to be biased more toward claims of foreign priority and toward having a foreign parent application.

Fifth, we find that in the post-AIPA era, the majority of the unpublished applications include a request for nonpublication prior to grant and that the reasons for non-publication differ between those applications that can and cannot be found in Public PAIR. The unpublished applications that can be found in PAIR are much more likely to have included a pre-grant non-publication request or to have issued early, while the unpublished applications that cannot be found in PAIR are more likely to have abandoned early. We also find that unpublished applications (even those included in Public PAIR) generally look very different from pre-grant published applications across several dimension. For instance, they are more likely to have been filed by small entities and far less likely to have claimed the benefit of a previous application, especially a foreign one.

Finally, we find very consistent results when using the PALM and Public PAIR data to look at the examination process in more detail, at least for applications received in the post-AIPA era. Again, we find a significant bias toward patent issue when using the Public PAIR data. However, the picture of the process generated using the Public PAIR data is otherwise quite similar to the one generated using the PALM data. We do see big differences between those applications that are included in Public PAIR and those that are excluded, but the excluded group is small enough that the resulting population of applications selected into Public PAIR looks very similar to the overall population of applications.

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Table 1: Counts of applications by post-AIPA and pre-grant publication status

Category	Number of Records	Percent of Total
In PAIR	**9,197,962**	**77.0%**
Post-AIPA/Published	4,005,689	100.0%
Post-AIPA/Unpublished	1,981,822	54.6%
Post-AIPA/Total	5,987,511	78.4%
Pre-AIPA	3,210,451	74.5%
Not in PAIR	**2,752,191**	**23.0%**
Post-AIPA/Published	0	0.0%
Post-AIPA/Unpublished	1,651,046	45.4%
Post-AIPA/Total	1,651,046	21.6%
Pre-AIPA	1,101,145	25.5%
Total	**11,950,153**	
Post-AIPA/Published	4,005,689	
Post-AIPA/Unpublished	3,632,868	
Post-AIPA/Total	7,638,557	
Pre-AIPA	4,311,596	

Table 2: Comparing the disposal status of regular nonprovisional utility applications across PAIR and PALM
(With column percentages)

(a) Pre-AIPA Era

	(1) In PALM	(2) In PAIR	(3) Not in PAIR
Abandoned	1,071,491	318,760	752,731
	32.8%	***12.7%***	***99.4%***
Issued	2,192,315	2,188,901	3,414
	67.1%	***87.3%***	***0.5%***
Pending	1,166	361	805
	0.0%	***0.0%***	***0.1%***
Total	3,264,972	2,508,022	756,950

(b) Post-AIPA Era

	(1)	(2)	(2a)	(2b)	(3)
		Found in Public PAIR			
	In PALM	**Total**	**Published**	**Unpublished**	**Not in PAIR**
Abandoned	1,261,222	1,087,713	1,050,160	37,553	173,509
	31.8%	***29.5%***	***30.7%***	***14.1%***	***87.3%***
Issued	2,293,070	2,293,065	2,065,650	227,415	5
	57.8%	***62.1%***	***60.3%***	***85.5%***	***0.0%***
Pending	415,825	310,501	309,595	906	25,324
	10.5%	***8.4%***	***9.0%***	***0.3%***	***12.7%***
Total	3,970,117	3,691,279	3,425,405	265,874	198,838

Note: The pre-AIPA era runs from January 1, 1981 through November 28, 2000. The post-AIPA era runs from November 29, 2000 through December 31, 2012.

Table 3: Comparing the technology area of regular nonprovisional utility applications across PAIR and PALM
(with column percentages)

(a) Pre-AIPA Era

	(1) In PALM	(2) In PAIR	(3) Not in PAIR
Biotechnology	364,372	263,974	100,398
	11.2%	***10.5%***	***13.3%***
Chemicals	654,391	500,734	153,657
	20.0%	***20.0%***	***20.3%***
Computers/ Communications	594,429	464,121	130,308
	18.2%	***18.5%***	***17.2%***
Electrical	585,511	492,275	93,236
	17.9%	***19.6%***	***12.3%***
Mechanical	610,185	466,646	143,539
	18.7%	***18.6%***	***19.0%***
Miscellaneous	422,799	315,582	107,217
	12.9%	***12.6%***	***14.2%***
Other	2,388	1,517	871
	0.1%	***0.1%***	***0.1%***
Missing	30,897	3,173	27,724
	0.9%	***0.1%***	***3.7%***
	3,264,972	2,508,022	756,950

Note: The pre-AIPA era runs from January 1, 1981 through November 28, 2000.

Table 3: Comparing the technology area of regular nonprovisional utility applications across PAIR and PALM (cont.)
(with column percentages)

(b) Post-AIPA Era

	(1)	(2)	(2a)	(2b)	(3)
		Found in Public PAIR			
	In PALM	**Total**	**Published**	**Unpublished**	**Not in PAIR**
Biotechnology	396,402	378,263	355,962	22,301	18,139
	10.0%	***10.0%***	***10.2%***	***8.4%***	***9.1%***
Chemicals	522,914	505,571	479,821	25,750	17,343
	13.2%	***13.4%***	***13.7%***	***9.7%***	***8.7%***
Computers/ Communications	980,133	936,547	870,624	65,923	43,586
	24.7%	***24.8%***	***24.8%***	***24.8%***	***21.9%***
Electrical	884,031	861,089	800,463	60,626	22,942
	22.3%	***22.8%***	***22.8%***	***22.8%***	***11.5%***
Mechanical	636,995	595,166	552,331	42,835	41,829
	16.0%	***15.8%***	***15.8%***	***16.1%***	***21.0%***
Miscellaneous	531,381	486,288	442,393	43,895	45,093
	13.4%	***12.9%***	***12.6%***	***16.5%***	***22.7%***
Other	6,656	4,531	3,793	738	2,125
	0.2%	***0.1%***	***0.1%***	***0.3%***	***1.1%***
Missing	11,605	3,824	18	3,806	7,781
	0.3%	***0.1%***	***0.0%***	***1.4%***	***3.9%***
	3,970,117	3,771,279	3,505,405	265,874	198,838

Note: The post-AIPA era runs from November 29, 2000 through December 31, 2012.

Table 4: Comparing the small entity and foreign priority status of regular nonprovisional utility applications Across PAIR and PALM
(with column percentages)

(a) Pre-AIPA Era

	(1) In PALM	(2) In PAIR	(3) Not in PAIR
Small Filer			
Yes	927,373	717,097	210,276
	28.4%	***28.6%***	***27.8%***
No	2,337,599	1,790,925	546,674
	71.6%	***71.4%***	***72.2%***
Foreign Priority			
Yes	1,222,761	998,741	224,020
	37.5%	***39.8%***	***29.6%***
No	2,042,211	1,509,281	532,930
	62.5%	***60.2%***	***70.4%***
Total	3,264,972	2,508,022	756,950

(b) Post-AIPA Era

	(1)	(2)	(2a)	(2b)	(3)
		Found in Public PAIR			
	In PALM	Total	Published	Unpublished	Not in PAIR
Small Filer					
Yes	1,165,532	1,065,940	958,963	106,977	99,592
	29.4%	***28.3%***	***27.4%***	***40.2%***	***50.1%***
No	2,804,585	2,705,339	2,546,442	158,897	99,246
	70.6%	***71.7%***	***72.6%***	***59.8%***	***49.9%***
Foreign Priority					
Yes	1,520,395	1,510,100	1,465,455	44,645	10,295
	38.3%	***40.0%***	***41.8%***	***16.8%***	***5.2%***
No	2,449,722	2,261,179	2,039,950	221,229	188,543
	61.7%	***60.0%***	***58.2%***	***83.2%***	***94.8%***
Total	3,970,117	3,771,279	3,505,405	265,874	198,838

Note: The pre-AIPA era runs from January 1, 1981 through November 28, 2000. The post-AIPA era runs from November 29, 2000 through December 31, 2012.

Table 5: Comparing the parent type of regular nonprovisional utility applications across PAIR and PALM
(with column percentages)

(a) Pre-AIPA Era

	(1) In PALM	(2) In PAIR	(3) Not in PAIR
No Parent	1,421,636	1,041,563	380,073
	43.5%	***41.5%***	***50.2%***
Foreign	839,083	689,022	150,061
	25.7%	***27.5%***	***19.8%***
PCT	170,509	149,820	20,689
	5.2%	***6.0%***	***2.7%***
Provisional	85,770	64,707	21,063
	2.6%	***2.6%***	***2.8%***
US - CIP	190,274	150,944	39,330
	5.8%	***6.0%***	***5.2%***
US - CON	366,921	260,552	106,369
	11.2%	***10.4%***	***14.1%***
US - DIV	190,365	151,102	39,263
	5.8%	***6.0%***	***5.2%***
Missing	414	312	102
	0.0%	***0.0%***	***0.0%***
	3,264,972	2,508,022	756,950

Note: The pre-AIPA era runs from January 1, 1981 through November 28, 2000.

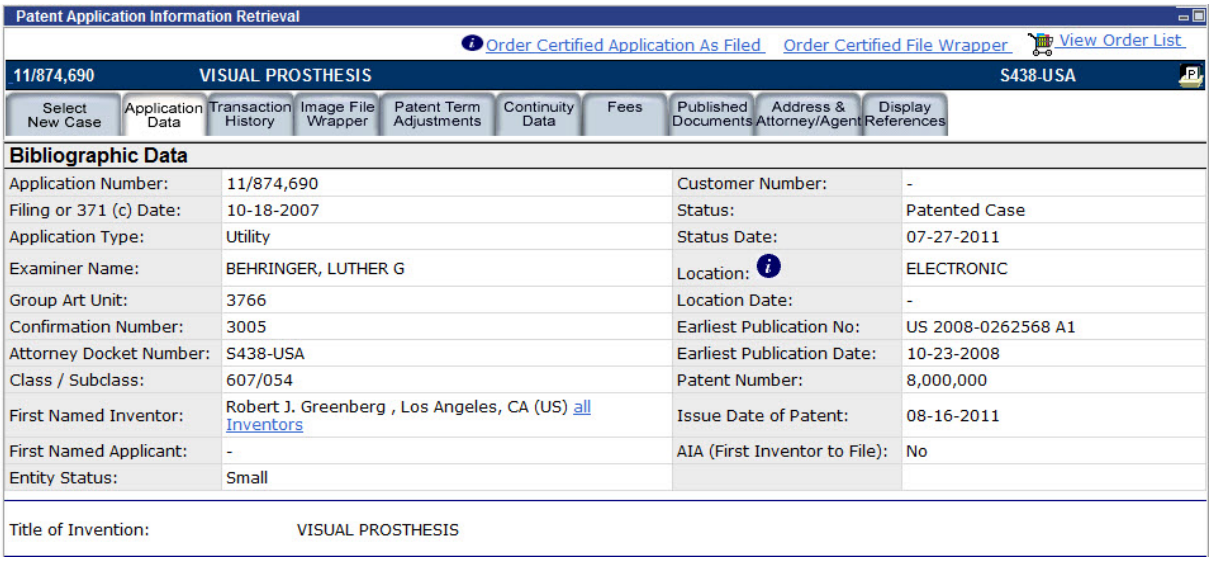
Table 5: Comparing the parent type of regular nonprovisional utility applications across PAIR and PALM (cont.)
(with column percentages)

(b) Post-AIPA Era

	(1)	(2)	(2a)	(2b)	(3)
		Found in Public PAIR			
	In PALM	**Total**	**Published**	**Unpublished**	**Not in PAIR**
No Parent	1,103,337	1,005,968	875,359	130,609	97,369
	27.8%	***26.7%***	***25.0%***	***49.1%***	***49.0%***
Foreign	823,833	818,426	813,686	4,740	5,407
	20.8%	***21.7%***	***23.2%***	***1.8%***	***2.7%***
PCT	668,802	666,791	615,054	51,737	2,011
	16.8%	***17.7%***	***17.5%***	***19.5%***	***1.0%***
Provisional	604,526	551,248	508,939	42,309	53,278
	15.2%	***14.6%***	***14.5%***	***15.9%***	***26.8%***
US - CIP	148,556	138,590	127,020	11,570	9,966
	3.7%	***3.7%***	***3.6%***	***4.4%***	***5.0%***
US - CON	373,719	348,490	331,245	17,245	25,229
	9.4%	***9.2%***	***9.4%***	***6.5%***	***12.7%***
US - DIV	247,312	241,739	234,079	7,660	5,573
	6.2%	***6.4%***	***6.7%***	***2.9%***	***2.8%***
Missing	32	27	23	4	5
	0.0%	***0.0%***	***0.0%***	***0.0%***	***0.0%***
	3,970,117	3,771,279	3,505,405	265,874	198,838

Note: The post-AIPA era runs from November 29, 2000 through December 31, 2012.

Exhibit 1: The Public PAIR Application Data Tab for Application Number 11/874,690



Patent Application Information Retrieval

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11/874,690 VISUAL PROSTHESIS S438-USA

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Bibliographic Data

Application Number:	11/874,690	Customer Number:	-
Filing or 371 (c) Date:	10-18-2007	Status:	Patented Case
Application Type:	Utility	Status Date:	07-27-2011
Examiner Name:	BEHRINGER, LUTHER G	Location:	ELECTRONIC
Group Art Unit:	3766	Location Date:	-
Confirmation Number:	3005	Earliest Publication No:	US 2008-0262568 A1
Attorney Docket Number:	S438-USA	Earliest Publication Date:	10-23-2008
Class / Subclass:	607/054	Patent Number:	8,000,000
First Named Inventor:	Robert J. Greenberg , Los Angeles, CA (US) all Inventors	Issue Date of Patent:	08-16-2011
First Named Applicant:	-	AIA (First Inventor to File):	No
Entity Status:	Small		

Title of Invention: VISUAL PROSTHESIS

Figure 1: PALM coverage of incoming regular nonprovisional patent applications, 1961-1990

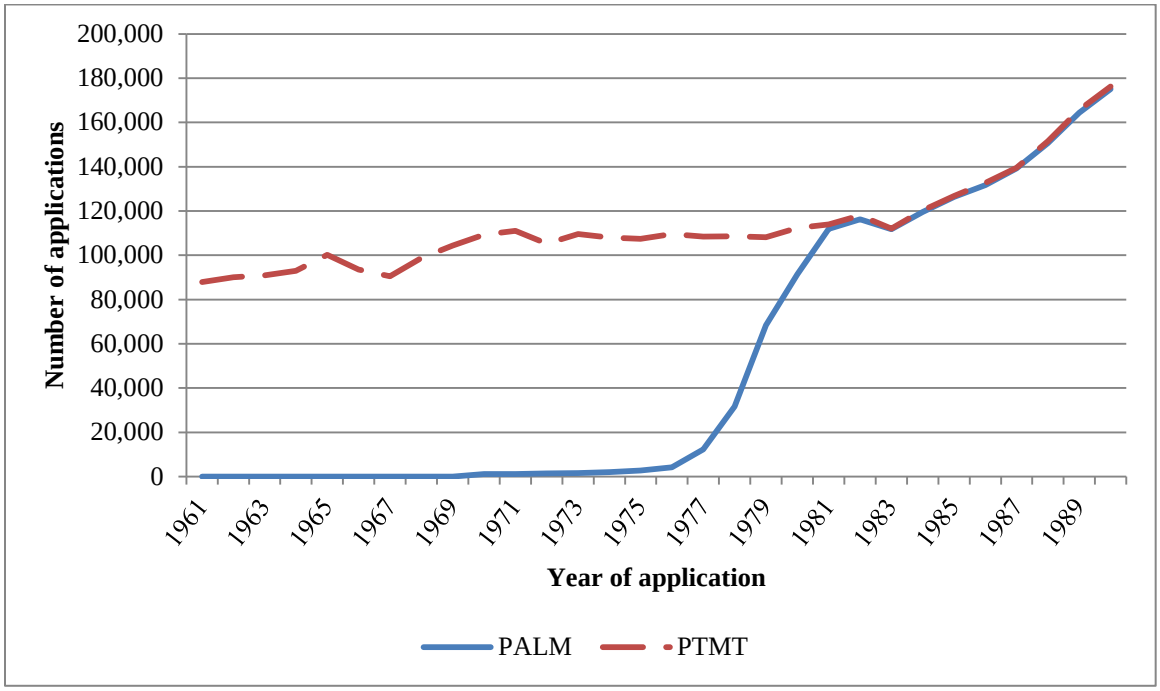


Figure 2: Percentage of total filings from PALM that can be found in Public PAIR, by year of filing, 2000-2014

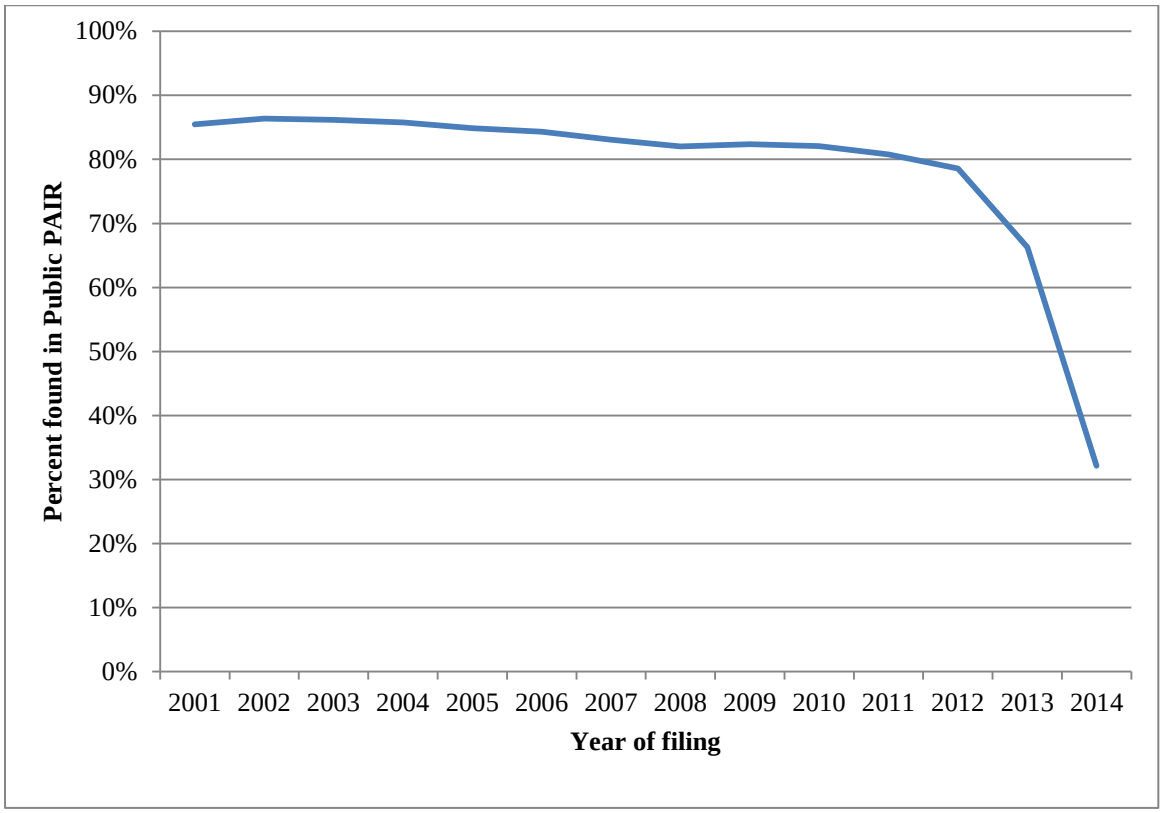


Figure 3: Percentage of total filings from PALM that can be found in Public PAIR, broken out by major type of application, by year of filing, 1981-2014

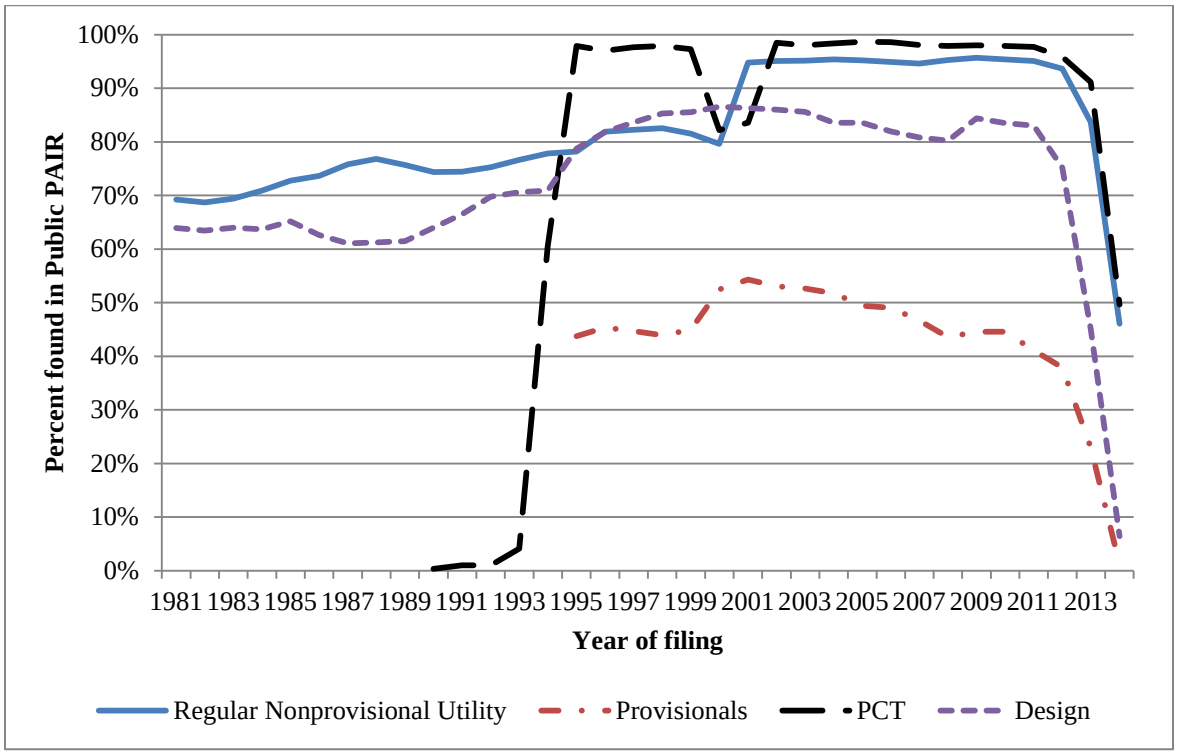


Figure 4: Percentage of regular nonprovisional utility and design filings from PALM that (1) can be found in Public PAIR and (2) had been issued as of 31 December 2014, by year of filing, 1981-2014

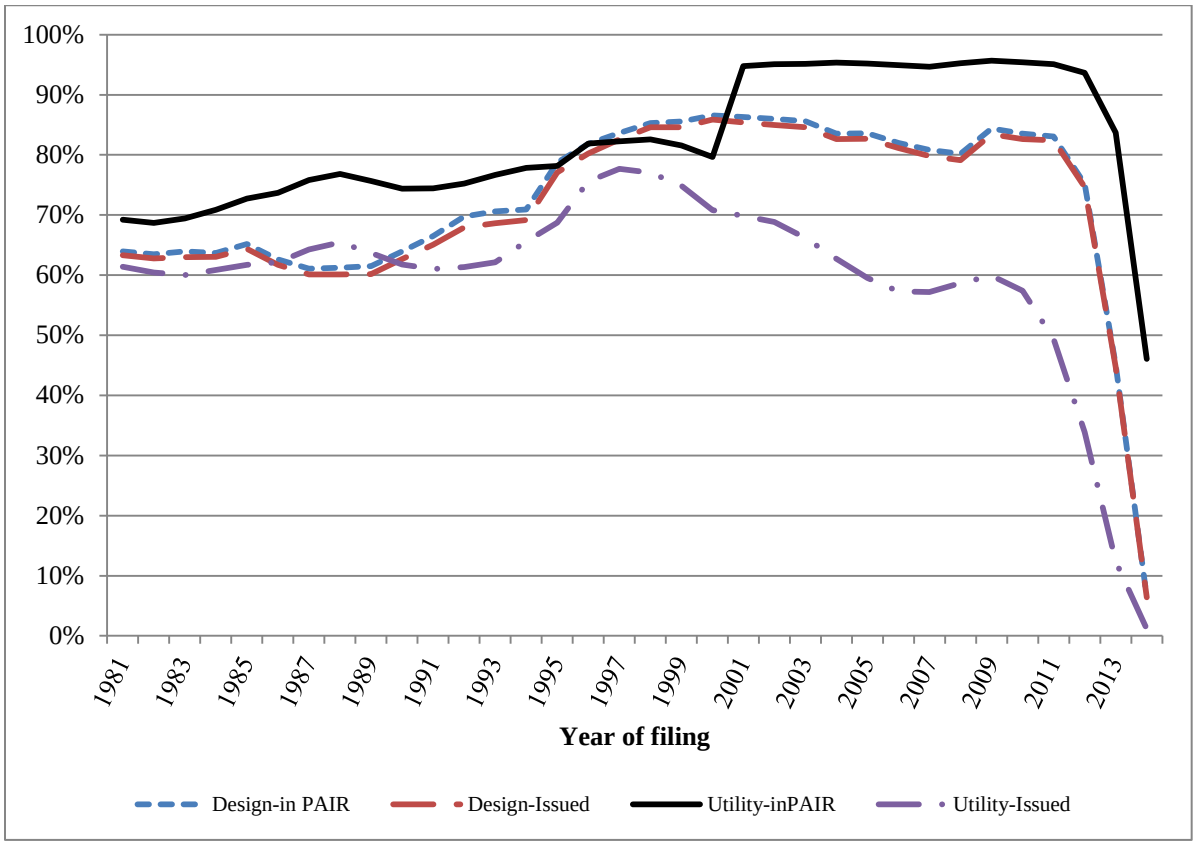


Figure 5: Number of regular nonprovisional utility filings by pre-grant publication status and availability in Public PAIR, 2001-2014

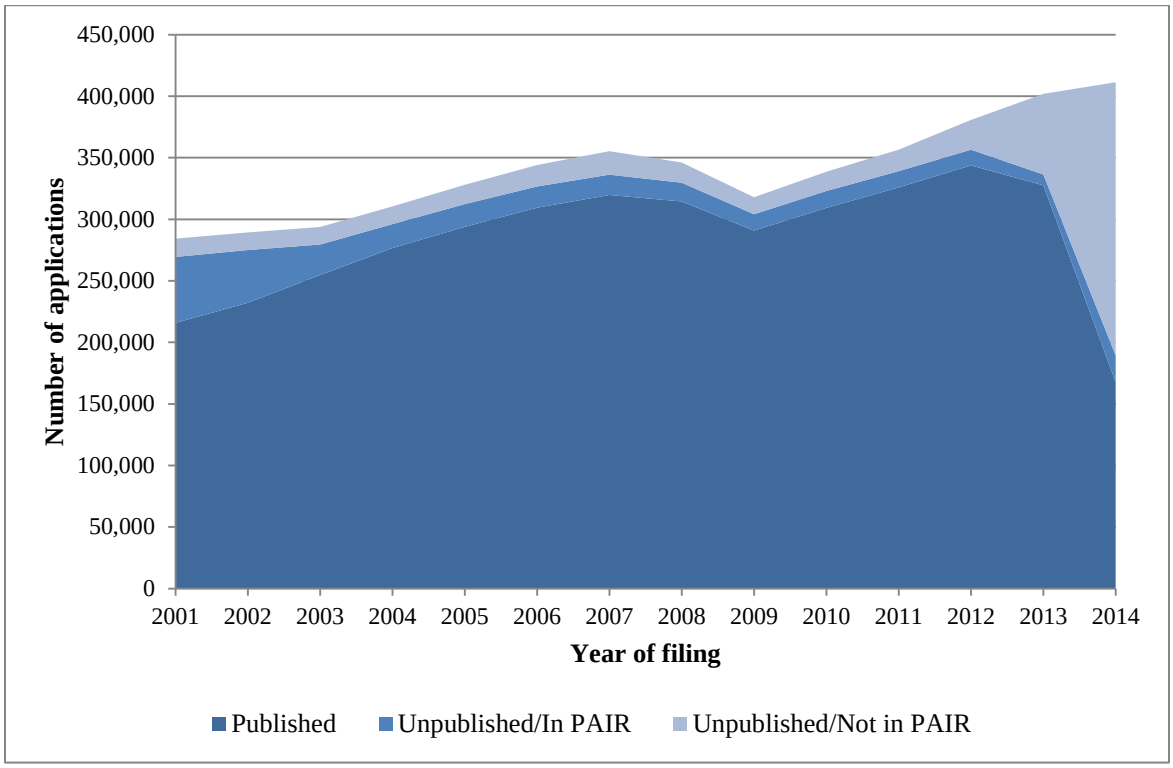


Figure 6: Percentage of unpublished (prior to grant) regular nonprovisional utility applications that can be found in Public PAIR, by year of filing, 2001-2014

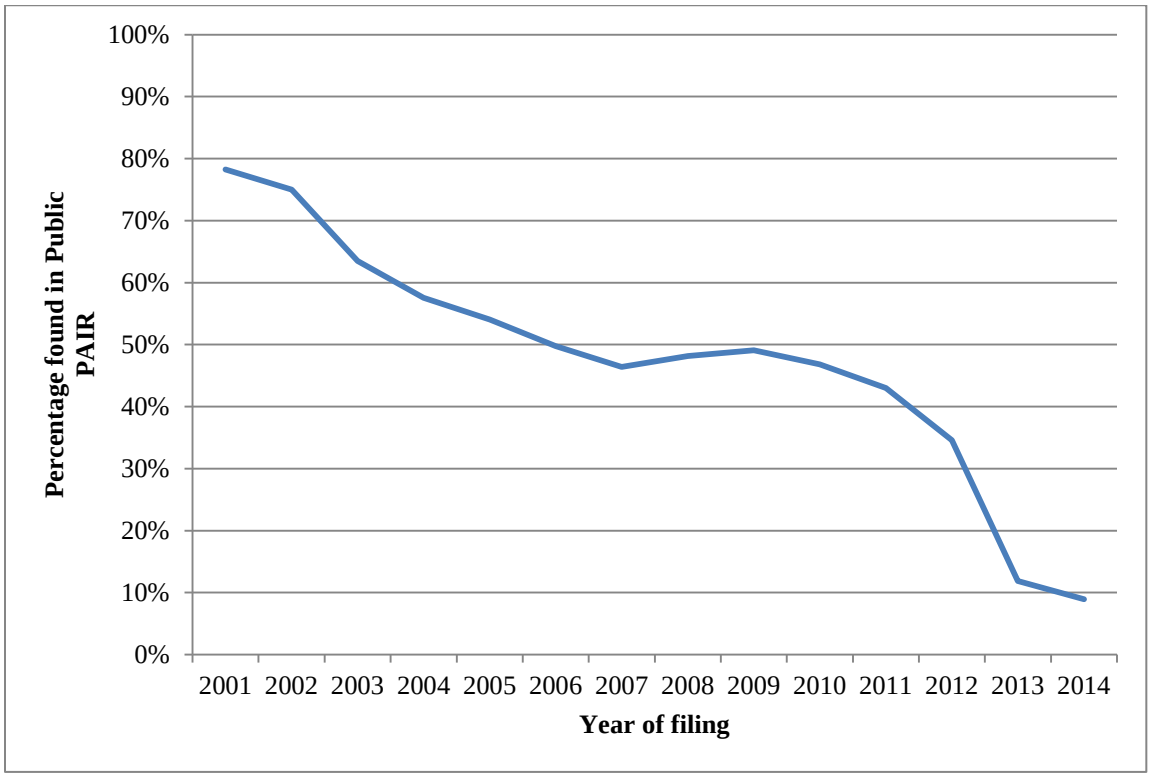


Figure 7: Reason for non-publication prior to grant by year of filing, regular nonprovisional utility applications filed from 2001 through 2013

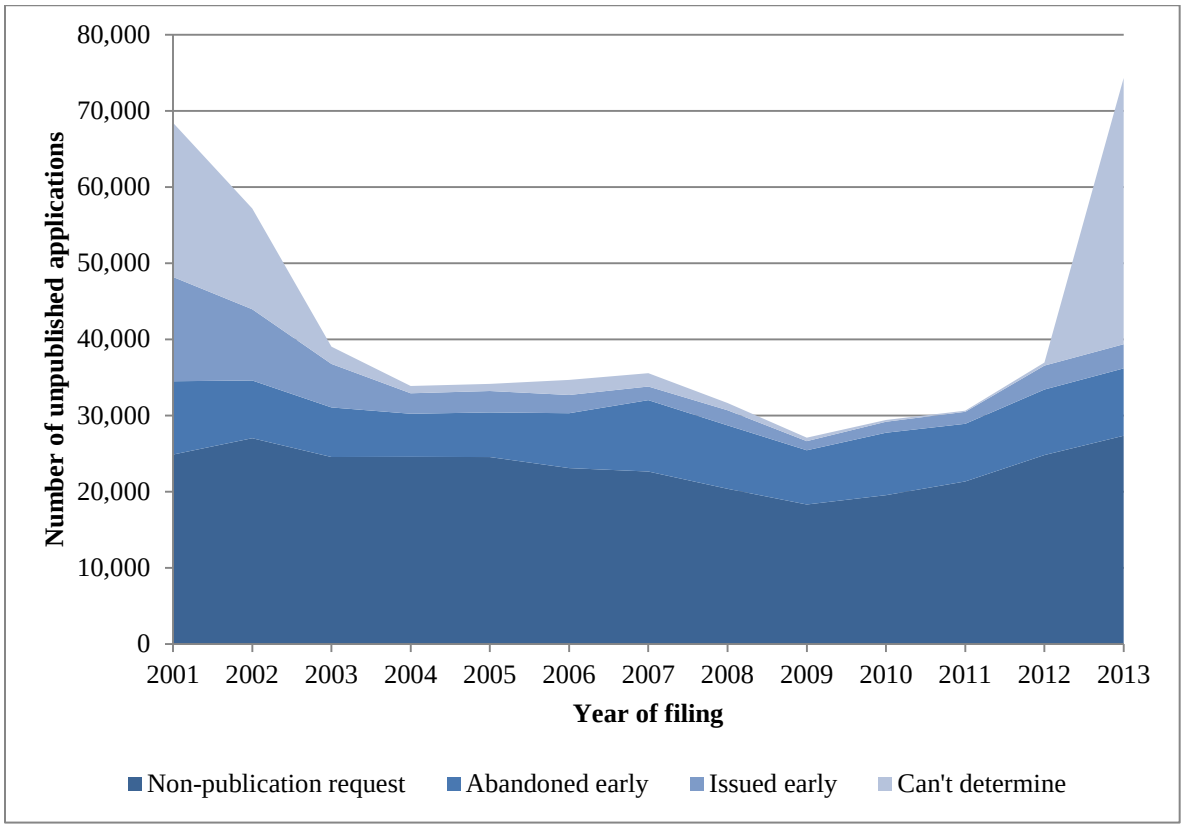


Figure 8: Reason for non-publication prior to grant, by Public PAIR inclusion status, regular nonprovisional utility applications filed from 2003 through 2012

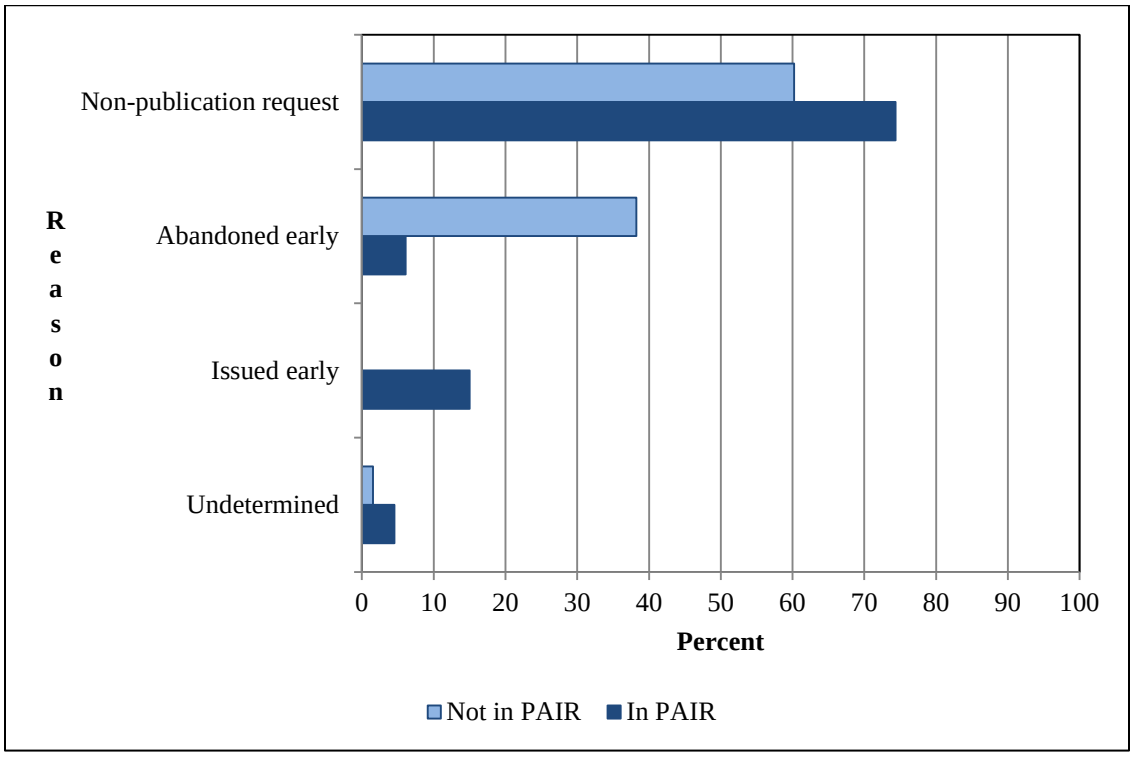


Figure 9: Comparing patent issue rates using PALM and Public PAIR data, regular nonprovisional utility applications disposed between 1985 and 2014

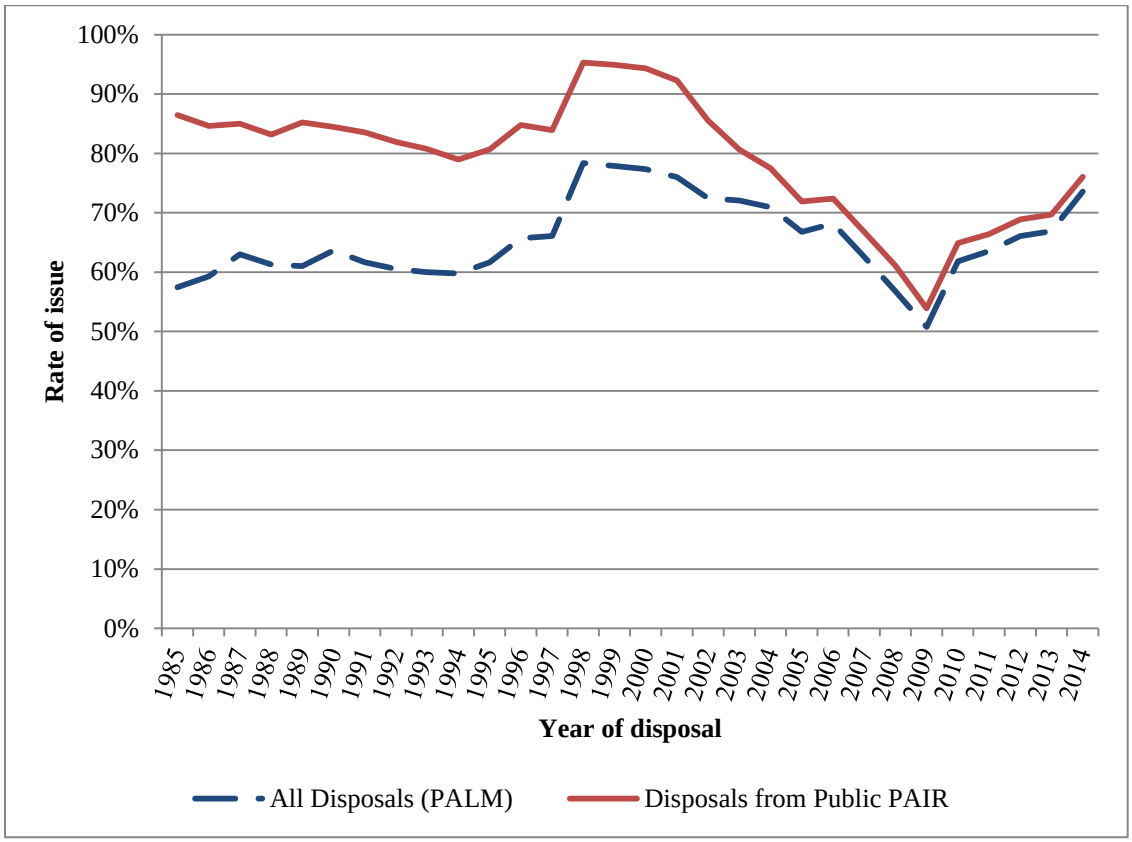


Figure 10: Comparing median pendency to disposal using PALM and Public PAIR data, regular nonprovisional utility applications disposed between 1985 and 2014

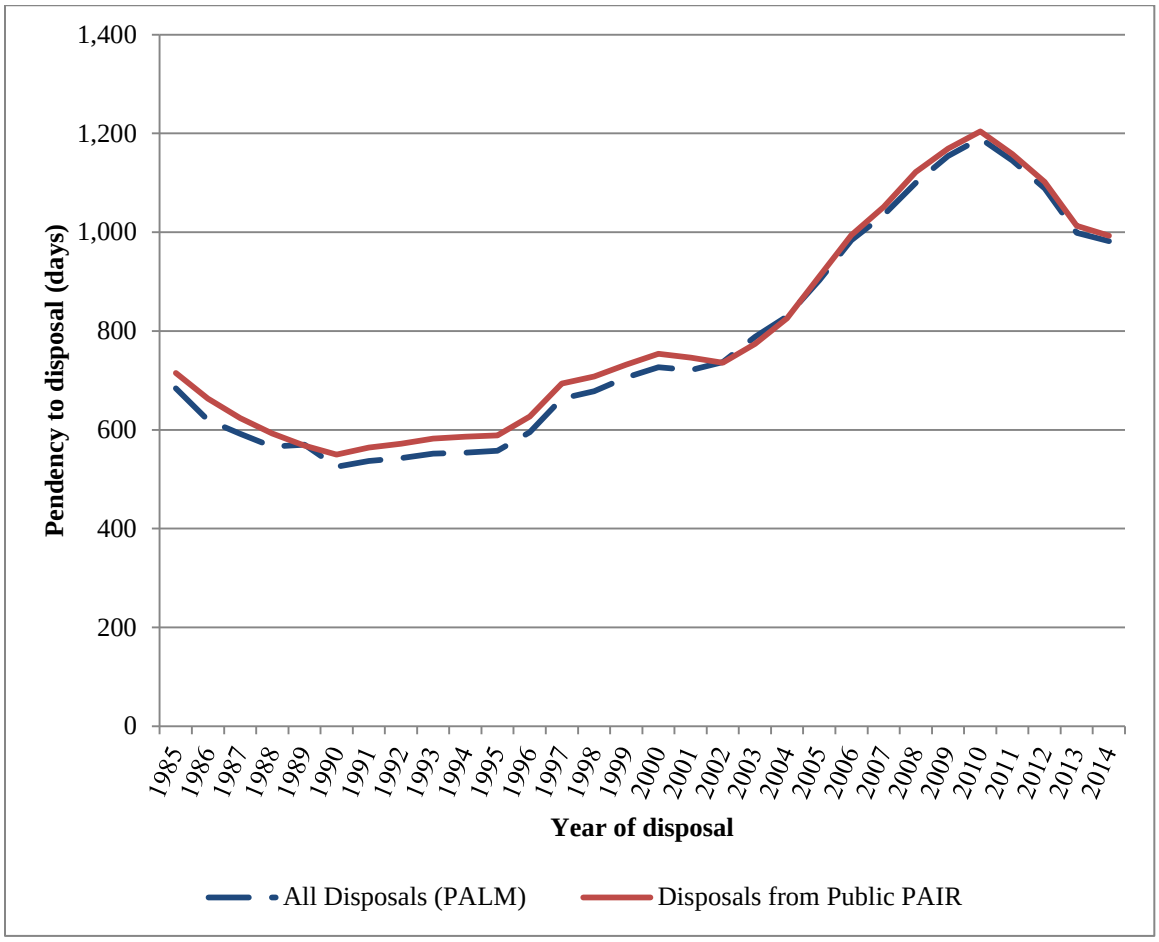


Figure 11: Comparing median pendency to abandonment using PALM and Public PAIR data, regular nonprovisional utility applications abandoned between 1985 and 2014

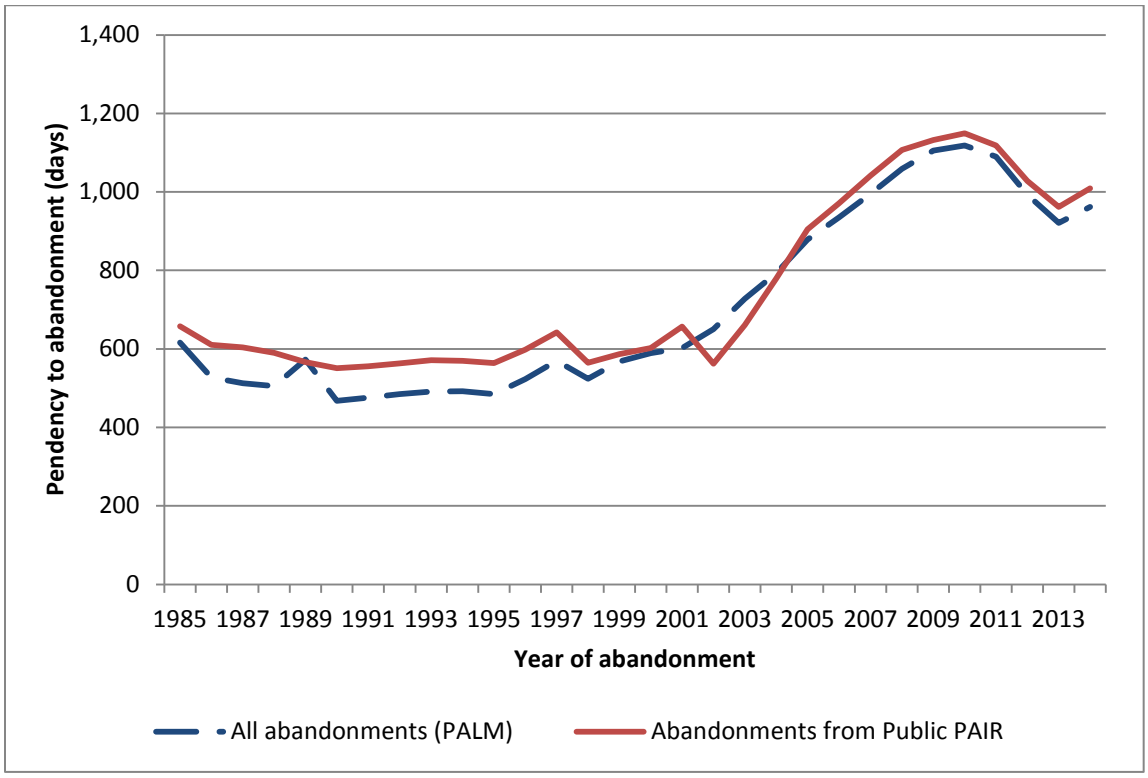


Figure 12: Patent examination process using PALM data, regular nonprovisional utility applications filed between 2001 and 2005

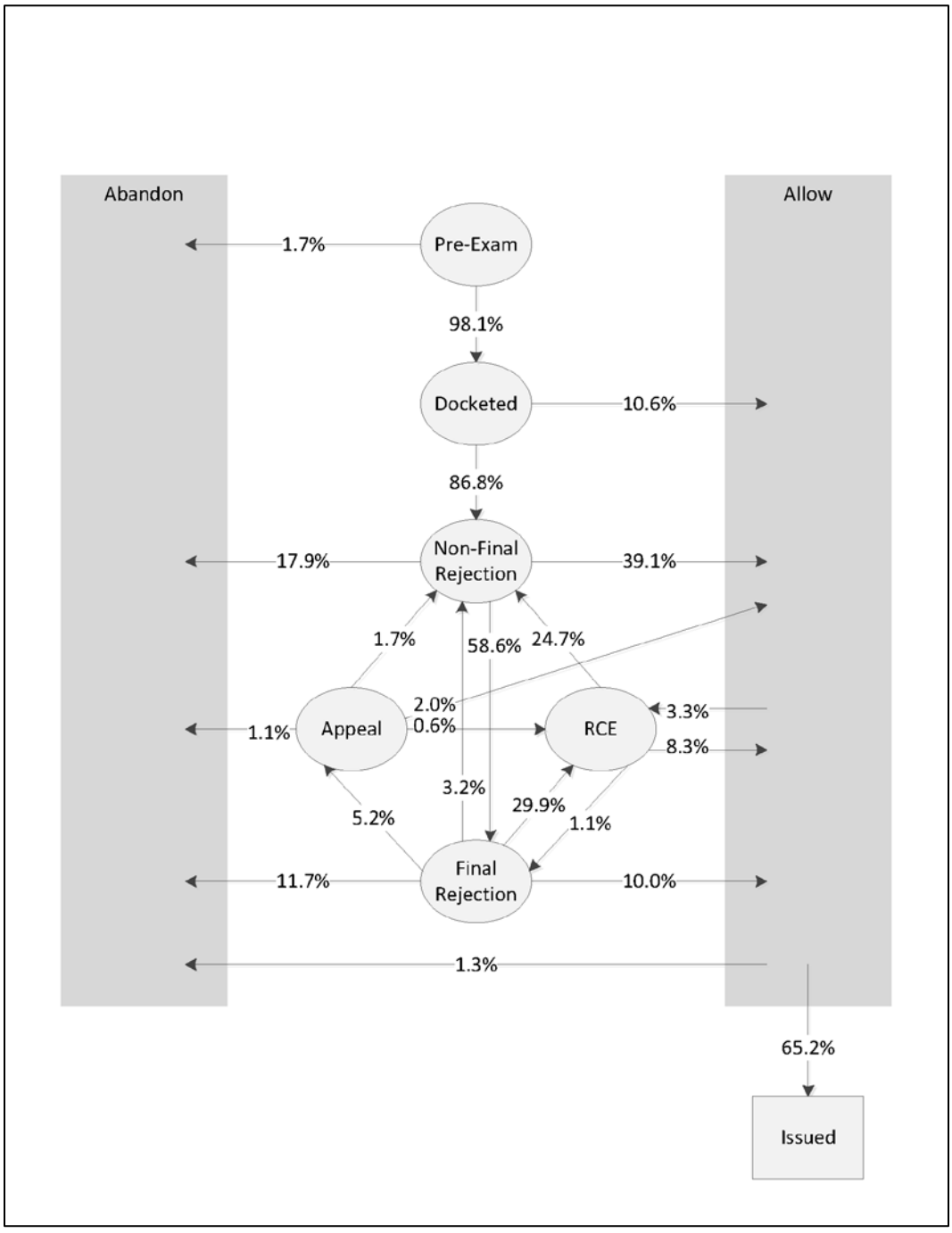


Figure 13: Patent examination process using Public PAIR data, regular nonprovisional utility applications filed between 2001 and 2005

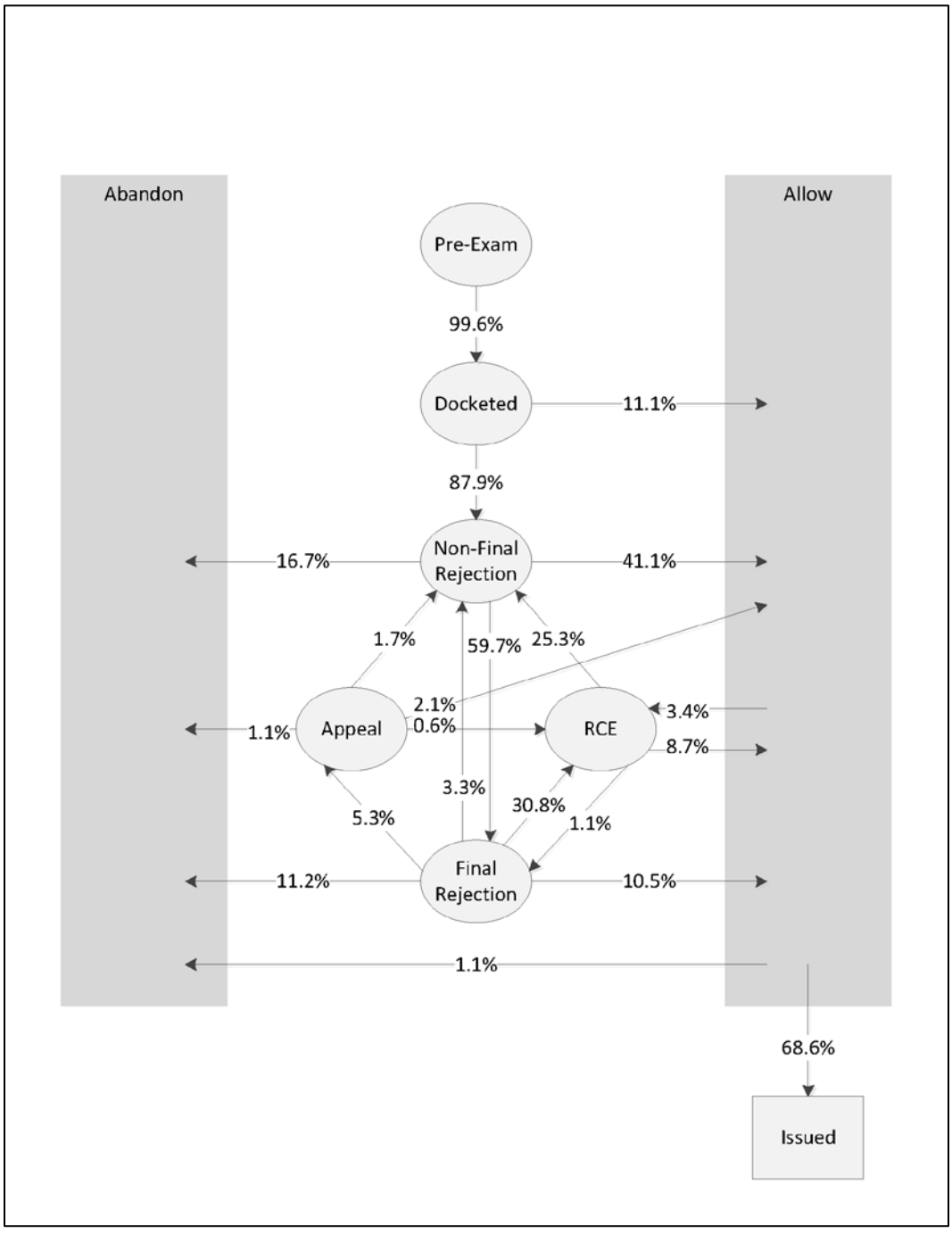
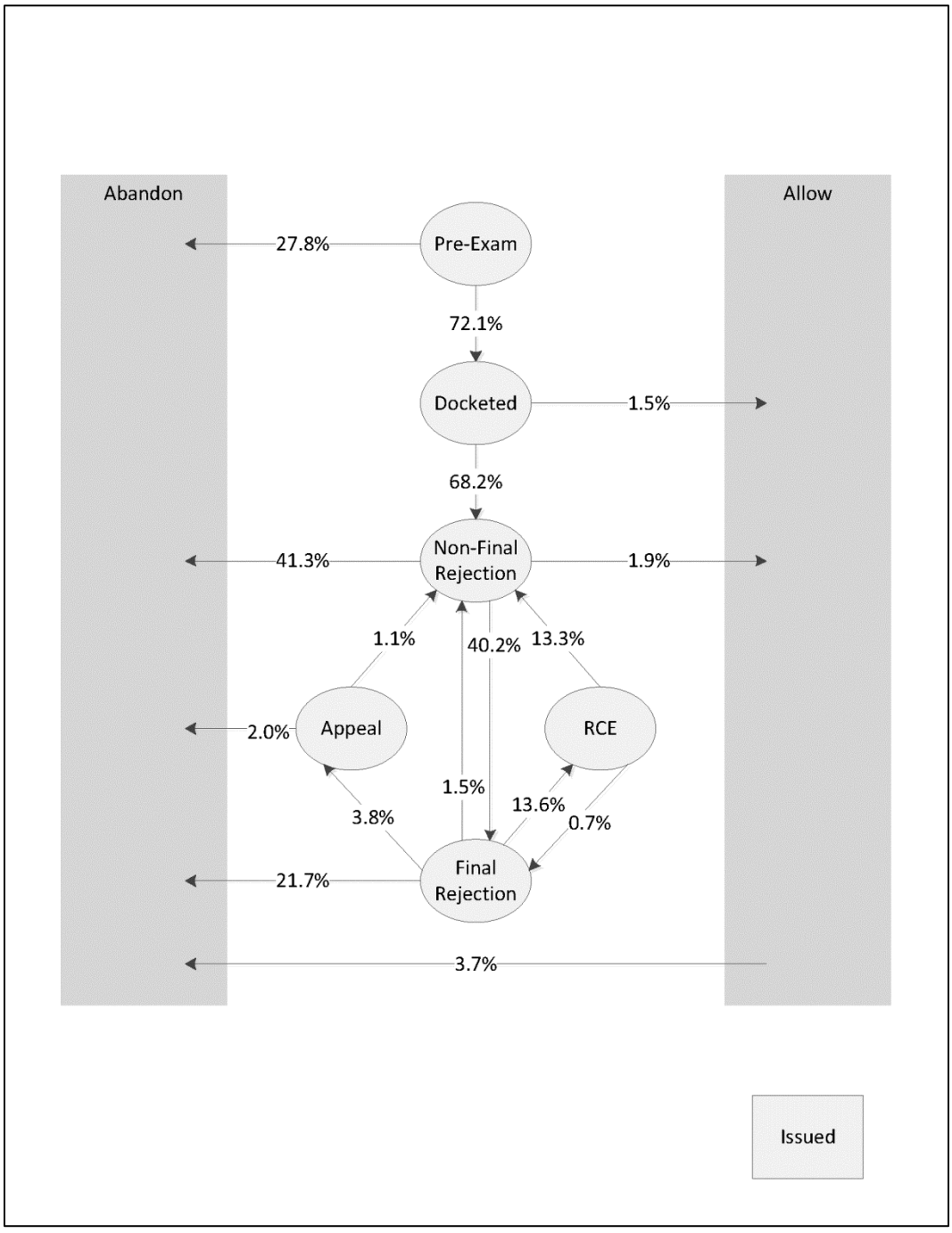


Figure 14: Patent examination process for applications not found in Public PAIR, using PALM data, regular nonprovisional utility applications filed between 2001 and 2005



Appendix A: Description of the Application Data Tab Release

A.1 Datasets Included in this Release

This data release consists of three datasets, which together provide all of the information that a user would be able to glean from the "Application Data" tab on the PTO's Public PAIR website. The first dataset is called APPLICATION_DATA and it includes bibliographic information on each patent application included in Public PAIR as of December 31, 2014. There are 9,231,170 observations in this dataset, with each observation representing a unique patent application. The variables included in this file are described in more detail below. They provide information on such fields as application number, filing date, application type, identity of the examiner, group art unit of the examiner, U.S. classification and sub-classification of the underlying invention, identity of the first-named inventor, current application status, and patent number if the application had been issued as a patent, among others. See Table A-1 for a list and brief description of all variables included in the APPLICATION_DATA file.

The second dataset is called ALL_INVENTORS and includes the names and locations of all inventors listed on the front page of each application in Public PAIR, if such information exists for an application. There are 21,617,363 observations in this dataset. Each observation represents an application/inventor pair and there are 7,842,637 unique patent applications represented in these data. There can be multiple observations for a given application. For each application/inventor pair, the file includes information on the name and location of the inventor, as well as a variable, *inventor_rank*, which provides information on whether the inventor is the first-named inventor. The rank for the first-named inventor is 1, the rank for the second-named inventor is 2, and so on. See Table A-2 for a list and brief description of all variables included in the ALL_INVENTORS file.

The third, and final dataset is called STATUS_CODES. This dataset includes descriptions of the status codes used to populate the *appl_status_code* variable in the APPLICATION_DATA file. The descriptions can be linked to APPLICATION_DATA using this variable. There are 225 unique application status codes represented in this file. See Table A-3 for a list and brief description of the two variables included in this file.

A.2 Variables Included in APPLICATION_DATA

Application Number

Each application received by the PTO is given a unique application number. The number is used to keep track of the application while it is being processed and examined. For the user, the most important use of the application number is as a key variable. For instance, one can link data from the ALL_INVENTORS data set to the applications provided in the APPLICATION_DATA data set by using this variable (*application_number*).

The application number is comprised of two parts. For all applications that were not filed under the patent cooperation treaty (PCT), the first two digits indicate the application's series number. For the most part, the series number gives a rough indication of the order in which applications were received by the PTO. For example, Series 6 applications generally were received before Series 7 applications, which were generally received before Series 8 applications, etc. Roughly 77 percent of the applications in the 2014

PAIR data release are from series 6 through 14. Only 1 percent of the applications present in the data are from prior series (see Table A-4).

The remaining 22 percent of applications are from special series (i.e. series that do not include regular nonprovisional utility or plant patent applications). Since the early 1990s, all applications for design patents have been identified using series 29 (4 percent of the total sample of applications). Provisional applications have been identified using series 60, 61, and 62 (9 percent of all applications). Reexaminations of patent applications have been given series numbers 90, 95, and 96 (less than half of 1 percent of all applications). Finally, PCT applications can be identified as those with applications that start with the three character string "PCT." These PCT applications account for nearly 9 percent of all applications included in the PAIR data.

Filing Date

For most applications, the filing date is the date on which PTO received the application.[63] For PCT applications, the filing date is the date of PTO's receipt of 35 U.S.C. 371c requirements. More than 99 percent of the applications in APPLICATION_DATA have a filing date of 1910 or later. However, as we see in Sections 2.1 and 3.2 of the main report, there is very poor coverage for applications that were received prior to 1981 and limited coverage for applications received between the late 1970s and the year 2000 due to the fact that there was no pre-grant publication of applications filed prior to November 29, 2000.

The filing date variable (*filing_date*) is formatted as a numeric variable which is equal to the difference between the filing date and the first day of January 1960. For instance, if an application was received on 10 January 1960, then the date variable would be equal to 9. For dates prior to 1 January 1960, the date variable takes on negative values. In the Stata version of the data set, the %td display format is embedded, so that the dates display with the following format: ddmmmyyyy. For example, when *filing_date* is equal to 12,500, it displays in Stata as "23mar1994."

Application Type

We provide two different variables to identify application type. The first, *invention_subject_matter*, identifies the subject matter of the invention, whether it is a utility, design, or plant patent application. Roughly 85 percent of all the records in the PAIR file have a known value for this variable.[64] The second variable, *application_type*, identifies the type of application as either a regular nonprovisional, provisional, re-issue, reexamination, or PCT application. All but three of the more than 9 million records have a non-missing value for this variable.

In Table A-5 we provide a cross-tabulation of these two variables. The results indicate that almost all of the regular nonprovisional applications (99.95 percent) have a non-missing value for the subject matter variable. The same is true of applications for reexamination and re-issue. At the other end of the spectrum, the subject matter variable is never populated for PCT applications. For provisional applications, the subject matter variable was populated for less than 3 percent of such applications prior to 2006. Since 2006, the subject matter variable has been populated more often and, in recent years, it has been populated more than 90 percent of the time (see Table A-6).

[63] There are some exceptions to this. See http://www.uspto.gov/patents-getting-started/patent-basics/types-patent-applications/nonprovisional-utility-patent for more details.
[64] 99.7 percent of the records without a valid value for this variable are either PCT or provisional applications.

Examiner Identifiers

We provide researchers with two ways to identify the examiner of record. First we provide the first, middle, and last names of the examiner as three separate variables. This is the information that is provided on the Public PAIR website. Second, we provide a numeric examiner identifier, *examiner_id*, so that analysts will be better able to group applications and issued patents by examiner. This can be particularly useful in cases where analysts want to control for the effect that examiners have on several prosecutorial measures such as time to disposal, type of disposal, likelihood of appeal, and so on.

It should be noted that, for applications pending on January 24, 2015, the examiner of record was the examiner assigned to the application as of that date. For disposed applications, the examiner is the examiner who was assigned to the application at the time of disposal.

Examiner Art Unit

The variable *examiner_art_unit* is a string variable indicating the group art unit to which the examiner of record was assigned as of the last office action recorded for the application in question. Group art units are designated as four digit numbers. The first two digits indicate the technology center (TC) to which the group art unit is assigned.[65] The designations for the technology centers have changed over the years, but currently there are eight such technology centers for examining regular utility applications.

- 1600 – Biotechnology
- 1700 – Chemical and Materials Engineering
- 2100 – Computer Architecture, Software, and Information Security
- 2400 – Computer Networks, Multiplex Communication, Video Distribution and Security
- 2600 – Communications
- 2800 – Semiconductors, Electrical and Optical Systems and Components
- 3600 – Transportation, Construction, Electronic Commerce, Agriculture, National Security and License & Review
- 3700 – Mechanical Engineering, Manufacturing, Products

There are a few instances where the group art unit variable is populated with identifiers for USPTO business units, in which patent examination does not take place. This is due to the fact that examiners sometimes switch to other business units (or other art units) between the time that an application is allowed and the time that it is issued as a patent. Because the *examiner_art_unit* variable for issued patents is based on the business unit to which the examiner of record was assigned at time of issue, it can occasionally reflect an art unit which was not the one to which the application was assigned for examination.

Classification Codes

When the PTO processes new patent applications, they assign the application into one general technology class and into one or more subclasses. Classification of new applications assists in (1) the assignment of the applications to the most relevant group art units and (2) the searches for relevant prior art during patent examination. Each class and subclass is identified by a code. The class and subclass codes for each

[65] A full listing of current group art units, along with contact information is available on the public PTO website at http://www.uspto.gov/about/contacts/phone_directory/pat_tech/. In order to find the current group art units within each technology center, click on the technology center number.

application are provided in *uspc_class* and *uspc_subclass*.[66] As an example, consider the patented case (patent number 8,000,000) illustrated in Exhibit 1. Here, the class code is 607 and the subclass code is 54. This class/subclass pair is defined as follows.

- Class 607 - Surgery: light, thermal, and electrical application
    - Subclass 54 - Producing visual effects by stimulation

Note that the codes included in this PatX data release are US Patent Classification codes rather the newer Cooperative Patent Classification codes which are being adopted by PTO.

Confirmation, Customer, and Attorney Docket Numbers

The confirmation number (*confirm_number*) is a four-digit number that the PTO uses to ensure that any papers filed by the applicant (or applicant's attorney) are assigned to the right file. This is not a unique identifier and should not be used as such. It is included in this data release, because it is available on Public PAIR.

The customer number (*customer_number*) can be used with the file COORESPONDENCE_ADDRESS to identify the entity that is listed as the correspondent for all application-related matters.[67] It is usually the law firm representing the inventor or the legal department of the firm to which the application is assigned. Roughly 60 percent of the applications available in APPLICATION_DATA have a legitimate value for this variable.

When an application is filed by a patent attorney, there is usually an internal tracking number assigned by the law firm for ease of reference. That is the docket number (*atty_docket_number*) that appears in Public PAIR. The PTO takes this information from the transmittal form or Application Data Sheet (ADS) filed with the application. More than 95 percent of the applications in PAIR filed since 1998 have a value for this variable.

Application Status

The application status variable (*appl_status_code*) is coded as a one- to three-digit integer value which can be deciphered using the STATUS_CODES file. The variable indicates what the status of the application was as of December 31, 2014. Table A-7 lists the 10 most common application status codes. By far, the most common application status code (47 percent of all cases) is "150" which indicates that the application's current status is that of a patented case. The other two most common codes are "161" (Abandoned – Failure to Respond to an Office Action) and "250" (Patent Expired Due to Nonpayment of Maintenance Fees Under 37 CFR 1.362). These codes are found for 12 and 10 percent of all cases, respectively.

The *appl_status_date* variable indicates the date that the application entered its most recent status (or status as of the end of 2014). The formatting is the same as for the filing date variable in that it is a numeric variable which is equal to the difference between the status date and the first day of January 1960. Because several older patented cases were added to the underlying data system in September 2001, many of these applications have a most recent status date of sometime during the week of September 19,

[66] For information regarding what the various class and subclass codes mean, we direct the reader to the following web page: http://www.uspto.gov/web/patents/classification/selectnumwithtitle.htm.
[67] The CORRESPONDENCE_ADDRESS file is described in Appendix F.

2001, even though they had been issued as patents far earlier. The problem is that, using the status date variable, it appears that PTO issued over 750,000 patents in September of 2001. Therefore, for these cases, we recommend using the patent issue date in lieu of the status date variable. The *application_status* variable is set equal to "150" for these cases.

File Location

The *file_location* variable in Public PAIR provides the current site of the official file. There are several locations possible, but 97 percent of all applications are either stored electronically or at the file repository (Franconia), which is in Springfield, Virginia.[68] In this public release file, the location variable takes one of the following four distinct values, reflecting the fact that most files are located at one of these two locations.

- ELECTRONIC
- FRANCONIA
- MISSING
- OTHER

The *file_location_date* variable indicates the date on which the file first arrived at its present location. The formatting is the same as for the other date variables in that it is a numeric variable which is equal to the difference (in days) between the status date and the first day of January 1960.

Pre-Grant Publication Information

Since 2001, most applications to the PTO have been published prior to grant within 18 months of filing. Exceptions to this rule are cases in which (1) applicants have requested that an application not be published prior to grant, (2) an application is deemed un-publishable for national security reasons, or (3) an application has been abandoned prior to the end of the 18-month period after filing.[69] For applications that have been made public by PTO, the following two variables are provided.

- *earliest_pgpub_number* – This variable provides the earliest pre-grant publication number assigned by the PTO for the application.
- *earliest_pgpub_date* – The variable provides the earliest pre-grant publication date for the application. The formatting is the same as for the other date variables in that it is a numeric variable which is equal to the difference (in days) between the status date and the first day of January 1960.

PCT applications become available in Public PAIR because they are published internationally by the World Intellectual Property Office (WIPO). For these applications a WIPO publication number is available. In this data release we provide a variable (*wipo_pub_number*) pertaining to WIPO publication.

[68] When the term "Electronic" appears as the "location" of an application or patent, the official file is an electronic image file as described in the Official Gazette Notice 1271 OG 100, published June 17, 2003.
[69] Applicants can usually only request non-publication of an application if they are not pursuing patent rights for the same invention in other national jurisdictions. See Section 2.3 on selection of applications into Public PAIR for more details.

Disposal variables

An application can be "disposed" in one of two ways. First, all or some of the claims made in the application are allowed and ultimately issued as a patent. Second, at some point during the examination process the applicant may abandon the application. We provide the following variables to describe each application's disposal status as of December 31, 2014.

- *patent_number* – This variable is populated for applications that resulted in an issued patent. Patent numbers are assigned sequentially based on date of issue.
- *patent_issue_date* – This variable is generally populated for applications that resulted in an issued patent. It indicates the day on which the patent was issued, and should not be confused with the date on which the underlying claims were allowed. There can be a lag of several weeks between allowance of claims and patent issue. The formatting is the same as for the other date variables in that it is a numeric variable which is equal to the difference (in days) between the status date and the first day of January 1960.
- *abandon_date* – This variable is populated for applications that have been abandoned. The formatting is the same as for the other date variables.
- *disposal_type* – This variable is constructed using the other three variables listed above. It is set equal to "ISS" (issued) if either *patent_number* or *patent_issue_date* is populated with a valid value. It is set equal to "ABN" (abandoned) if neither *patent_number* nor *patent_issue_date* is populated with a valid value AND *abandon_date* is populated with a valid value. It is set equal to "PEND" (pending) if none of the three variables (*patent_number*, *patent_issue_date*, and *abandon_date*) is populated with a valid value. Finally, for all PCT and provisional applications, the variable is set equal to "N/A" (not applicable), as these applications are truly more place-holders than anything else, and are never issued as patents nor abandoned in the traditional sense. See Table A-8 for a breakout of disposal status by year of application (starting in 1980) for regular nonprovisional utility applications.

Other variables

There are a few other variables included in APPLICATION_DATA. First, *invention_title* is a string variable which provides the title of the invention, as would be found on the Public PAIR website. The *small_entity_indicator* variable is an indicator variable set equal to 1 if the applicant qualifies as a small entity. A small entity is typically either an individual inventor, a collaboration of individual inventors, a nonprofit organization, or a company with fewer than 500 employees. Small entity status typically entitles the applicant to a 50 percent discount on most fee payments to PTO.

Finally, the variable *aia_first_to_file* indicates an application that is to be judged under the first-inventor-to-file rules as laid out in the America Invents Act (AIA). This provision did not come into effect until March, 2013.

A.3 Variables Included in ALL_INVENTORS

The ALL_INVENTORS file includes information on the names and locations of the inventors for most of the applications included in the APPLICATION_DATA file. The variable, *application_number*, can be used to link information regarding the inventors to specific applications. The data regarding the inventor names are fairly straight-forward. The *inventor_rank* variable indicates the order of the inventors as listed on the original application and can be used to determine who the first-named inventor is.

Determining the location (country or U.S. state) of each inventor can be done using the *inventor_country_code* and *inventor_region_code* variables. The *inventor_country_code* variable is coded using the ISO 3166 format.[70] We also include a variable, *inventor_country_name*, which can also be used to decipher the country codes. For domestic (US) applications, the *inventor_region_code* variable can be used to determine state of residence. States are coded using standard US Postal Service 2-digit state abbreviations. The data here are not perfect as there are apparent coding errors, but we have chosen not to clean these data so as to let researchers use their own chosen algorithms for cleaning. We provide a couple of examples of how the inventor location variables can be used.

1. Suppose we want to create a subset of all applications where the first-named inventor is from Japan. We would use the ALL_INVENTORS file and keep all records where *inventor_rank* equals 1 and where *inventor_country_code* equals "JP", which is the ISO 3166 code for Japan. We could then link the resulting file with the APPLICATION_DATA file for further analysis. In Table A-9 we list the countries with the most mentions of first-named inventor in Public PAIR.
2. Suppose we want to create a subset of all applications where any inventor is from California. Here we would use the ALL_INVENTORS file and keep all records where *inventor_country_code* equals "US" and where *inventor_region_code* equals "CA". We would probably also want to look at all of the *inventor_region_code* values to be certain that there were not others that could indicate California as state of residence, but using "CA" would capture almost all of the cases. Please note that in this case there might well be multiple records for a single application. Again, using *application_number*, the resulting file could be linked with the APPLICATION_DATA file for further analysis. In Table A-10 we present the number of first-named inventor mentions by state.

A.4 Variables included in STATUS_CODES

The STATUS_CODES data set includes descriptions of what the various values of the *appl_status_code* variable mean. They can be linked to the APPLICATION_DATA data set through this variable.

[70] For more information on ISO 3166 country codes see http://www.iso.org/iso/country_codes.htm.

Table A-1: List of variables included in APPLICATION_DATA

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%14s
filing_date	Filing or 371 (c) Date	float	%td
invention_subject_matter	Invention Subject Matter	str3	%-3s
application_type	Application Type	str7	%-7s
examiner_name_last	Examiner's Family Name	str17	%-20s
examiner_name_first	Examiner's Given Name	str12	%-20s
examiner_name_middle	Examiner's Middle Name	str12	%-20s
examiner_id	Unique Examiner Identifier	str5	%9s
examiner_art_unit	Group Art Unit	str6	%-6s
uspc_class	Invention U.S. Classification	str3	%-3s
uspc_subclass	Invention U.S. Subclassification	str6	%-6s
confirm_number	Confirmation Number	int	%12.0f
customer_number	Customer number	str6	%-6s
atty_docket_number	Attorney Docket Number	str25	%-20s
appl_status_code	Application Status Code	int	%8.0f
appl_status_date	Status Date	float	%td
file_location	Location (where the file currently is)	str5	%-5s
file_location_date	Location Date	int	%td
earliest_pgpub_number	Earliest Publication No.	str15	%-15s
earliest_pgpub_date	Earliest Publication Date	int	%td
wipo_pub_number	WIPO Publication Number	long	%12.0f
patent_number	Patent Number	str7	%-10s
patent_issue_date	Issue Date of Patent	float	%td
abandon_date	Date of Abandonment	float	%td
disposal_type	Disposal Type	str4	%9s
invention_title	Title of Invention	str600	%-20s
small_entity_indicator	Entity Status	byte	%8.0f
aia_first_to_file	AIA (First Inventor to File)	byte	%8.0f

Table A-2: List of variables included in ALL_INVENTORS

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
inventor_name_first	Inventor's Given Name	strL	%-20s
inventor_name_middle	Inventor's Middle Name	strL	%-20s
inventor_name_last	Inventor's Family Name	strL	%-20s
inventor_rank	Inventor Rank within Application	int	%8.0f
inventor_region_code	Region (State) of Residence	str3	%-3s
inventor_country_code	Country of Residence Code (ISO 3166)	str2	%-2s
inventor_country_name	Country of Residence Name	strL	%-20s
inventor_address_type	Residence or postal address	str9	%-20s

Table A-3: List of variables included in STATUS_CODES

Variable Name	Description	Type	Formatting
appl_status_code	Application Status Code	int	%8.0g
status_description	Application Status Description	str97	%-97s

Table A-4: Counts of Public PAIR applications by series umber

Series	Frequency	Percent	Cumulative Percent
02	55	0.0	0.0
03	176	0.0	0.0
04	4,209	0.1	0.1
05	86,459	0.9	1.0
06	661,447	7.2	8.2
07	742,780	8.1	16.2
08	787,490	8.5	24.7
09	833,489	9.0	33.8
10	953,149	10.3	44.1
11	943,277	10.2	54.3
12	950,821	10.3	64.6
13	926,083	10.0	74.6
14	285,226	3.1	77.7
29	376,214	4.1	81.8
35	2	0.0	81.8
60	493,040	5.3	87.1
61	357,502	3.9	91.0
62	111	0.0	91.0
90	13,408	0.2	91.2
95	2,087	0.0	91.2
96	72	0.0	91.2
PCT	814,073	8.8	100.0
Total	9,231,170		

Table A-5: Cross-tabulation of invention subject matter and application type variables
(Row percentages in *italics*)

Application Type	Invention Subject Matter: Unknown (?)	Design (DES)	Plant (PLT)	Utility (UTL)	Total
Unknown (?)	0 *0.0%*	0 *0.0%*	0 *0.0%*	3 *100.0%*	3 *100.0%*
PCT (PCT)	814,073 *100.0%*	0 *0.0%*	0 *0.0%*	0 *0.0%*	814,073 *100.0%*
Provisional (PROVSNL)	478,473 *56.3%*	11 *0.0%*	6 *0.0%*	372,123 *43.7%*	850,613 *100.0%*
Re-Exam (REEXAM)	357 *2.3%*	282 *1.8%*	7 *0.0%*	14,914 *95.8%*	15,560 *100.0%*
Regular Nonprovisional (REGULAR)	3,696 *0.0%*	470,612 *6.3%*	21,852 *0.3%*	7,030,973 *93.4%*	7,527,133 *100.0%*
Re-Issue (REISSUE)	1 *0.0%*	349 *1.5%*	2 *0.0%*	23,380 *98.5%*	23,732 *100.0%*
Total	1,296,600 *14.0%*	471,254 *5.1%*	21,867 *0.2%*	7,441,393 *80.6%*	9,231,114 *100.0%*

Table A-6: Invention subject matter by filing year, provisional applications
(Row percentages in *italics)*

	Invention Subject Matter				
Filing Year	Unknown (?)	Design (DES)	Plant (PLT)	Utility (UTL)	Total
1997-2005	349,675	0	2	10,079	359,756
	97%	*0%*	*0%*	*3%*	*100%*
2006	44,899	1	1	16,195	61,096
	74%	*0%*	*0%*	*26%*	*100%*
2007	28,761	4	3	34,647	63,415
	45%	*0%*	*0%*	*55%*	*100%*
2008	14,478	1	0	46,992	61,471
	24%	*0%*	*0%*	*76%*	*100%*
2009	9,284	1	0	50,271	59,556
	16%	*0%*	*0%*	*84%*	*100%*
2010	6,731	1	0	56,746	63,478
	11%	*0%*	*0%*	*90%*	*100%*
2011	4,916	2	0	58,196	63,114
	8%	*0%*	*0%*	*92%*	*100%*
2012	2,873	1	0	58,893	61,767
	5%	*0%*	*0%*	*95%*	*100%*
2013	1,685	0	0	39,190	40,875
	4%	*0%*	*0%*	*96%*	*100%*
2014	*30*	*0*	*0*	*874*	*904*
	3%	*0%*	*0%*	*97%*	*100%*
Total	463,332	11	6	372,083	835,432
	55%	*0%*	*0%*	*39%*	*100%*

Table A-7: Common status codes

Code	Status	Frequency	Percent
150	Patented Case	4,288,187	46.5%
161	Abandoned -- Failure to Respond to an Office Action	1,107,772	12.0%
250	Patent Expired Due to NonPayment of Maintenance Fees Under 37 CFR 1.362	919,203	10.0%
159	Provisional Application Expired	848,536	9.2%
30	Docketed New Case - Ready for Examination	350,347	3.8%
218	RO PROCESSING COMPLETED-PLACED IN STORAGE	284,700	3.1%
566	PCT - International Search Report Mailed to IB	234,837	2.5%
41	Non Final Action Mailed	168,103	1.8%
166	Abandoned -- File-Wrapper-Continuation Parent Application	165,589	1.8%
19	Application Undergoing Preexam Processing	126,741	1.4%
N/A	Other Codes	709,623	7.7%
	Missing	27,532	0.3%
Total		9,231,170	100.0%

Table A-8: Distribution of disposal type by filing year, regular nonprovisional utility applications

	disposal_type			
Filing Year	ABN	ISS	PEND	Total
1980	4,324	66,341	43	70,708
1981	8,127	63,933	43	72,103
1982	8,865	65,081	38	73,984
1983	9,706	61,647	28	71,381
1984	11,144	67,201	22	78,367
1985	12,964	71,640	16	84,620
1986	14,176	75,452	17	89,645
1987	14,849	81,757	21	96,627
1988	15,850	90,327	20	106,197
1989	18,363	96,307	18	114,688
1990	20,648	99,536	21	120,205
1991	22,552	100,441	23	123,016
1992	24,593	104,088	20	128,701
1993	25,469	108,479	19	133,967
1994	23,419	123,443	21	146,883
1995	20,038	144,786	34	164,858
1996	12,033	144,785	24	156,842
1997	9,917	169,322	32	179,271
1998	11,924	167,836	32	179,792
1999	15,744	178,557	57	194,358
2000	23,404	191,278	105	214,787
2001	70,064	198,620	316	269,001
2002	74,780	199,355	502	274,637
2003	83,479	194,526	1,005	279,013
2004	98,851	194,835	1,850	295,536
2005	112,667	195,382	3,531	311,580
2006	121,245	197,320	6,991	325,556
2007	118,814	203,536	12,585	334,936
2008	105,716	203,548	19,327	328,591
2009	85,663	191,177	26,364	303,204
2010	82,285	195,781	44,301	322,367
2011	72,188	179,118	87,338	338,644
2012	41,830	133,786	180,290	355,906
2013	10,662	53,460	270,841	334,963
2014	650	5,486	180,318	186,454
Total	1,407,003	4,618,167	836,213	6,861,383

Table A-9: Countries with most mentions of first-named inventors

Code	Country	Frequency	Percent
US	United States	4,526,501	49.9
JP	Japan	1,645,605	18.1
DE	Germany	571,548	6.3
KR	South Korea	328,274	3.6
TW	Taiwan	322,111	3.6
CA	Canada	234,133	2.6
GB	United Kingdom	231,299	2.6
FR	France	217,719	2.4
CN	China	108,570	1.2
IT	Italy	95,827	1.1
NL	Netherlands	88,156	1.0
CH	Switzerland	86,133	1.0
IL	Israel	83,703	0.9
SE	Sweden	81,760	0.9
AU	Australia	65,715	0.7
FI	Finland	41,966	0.5
IN	India	40,879	0.5
BE	Belgium	39,753	0.4
DK	Denmark	33,674	0.4
AT	Austria	33,503	0.4

Table A-10: First-named inventor mentions by US state

Code	State	Frequency	Code	State	Frequency
AL	Alabama	19,296	MT	Montana	5,725
AK	Alaska	2,111	NE	Nebraska	10,653
AZ	Arizona	73,351	NV	Nevada	23,442
AR	Arkansas	8,561	NH	New Hampshire	28,805
CA	California	1,021,662	NJ	New Jersey	201,118
CO	Colorado	90,707	NM	New Mexico	15,764
CT	Connecticut	95,690	NY	New York	306,783
DE	Delaware	23,678	NC	North Carolina	98,337
DC	District of Columbia	5,019	ND	North Dakota	3,665
FL	Florida	146,652	OH	Ohio	169,784
GA	Georgia	77,780	OK	Oklahoma	27,712
HI	Hawaii	5,274	OR	Oregon	69,503
ID	Idaho	30,964	PA	Pennsylvania	177,518
IL	Illinois	193,778	PR	Puerto Rico	1,300
IN	Indiana	75,635	RI	Rhode Island	14,551
IA	Iowa	30,350	SC	South Carolina	31,248
KS	Kansas	24,263	SD	South Dakota	3,530
KY	Kentucky	22,615	TN	Tennessee	40,665
LA	Louisiana	21,364	TX	Texas	291,672
ME	Maine	7,846	UT	Utah	42,326
MD	Maryland	76,561	VT	Vermont	15,359
MA	Massachusetts	214,221	VA	Virginia	64,577
MI	Michigan	184,662	WA	Washington	143,542
MN	Minnesota	137,342	WV	West Virginia	7,372
MS	Mississippi	7,171	WI	Wisconsin	83,068
MO	Missouri	47,163	WY	Wyoming	3,502

Appendix B: Description of the Transaction History Data Release

B.1 Datasets Included in this Release

This data release consists of three datasets that, after matching with the APPLICATION_DATA file, provide all of the information that an analyst would be able to glean from the "Transaction History" tab on PTO's Public PAIR website. The first dataset is called TRANSACTIONS and it includes information on all of the pre-examination and examination events tracked in Public PAIR. Each observation represents one event. The information includes a code identifying the type of event, the date on which the event occurred, and an identifier for the subject application. It also includes information on how the status of each examination changed over time as various events were recorded. The TRANSACTIONS data set includes 275,606,097 observations covering 9,204,051 unique applications.

The second dataset is called EVENT_CODES and it includes short descriptions of the event codes used in the TRANSACTIONS dataset. The descriptions can be linked to TRANSACTIONS using the *event_code* variable. There are 1,873 unique event codes represented in this dataset. The final dataset is called STATUS_CODES. This dataset includes descriptions of the status codes used to populate the *appl_status_code* variable in APPLICATION_DATA and the *status_code* variable in TRANSACTIONS. The descriptions can be found in the *status_description* variable. The variables included in the three datasets can be found in Table B-1, while Figure B-1 provides an illustrative example of the "Transaction History" tab for application number 12/415,706.

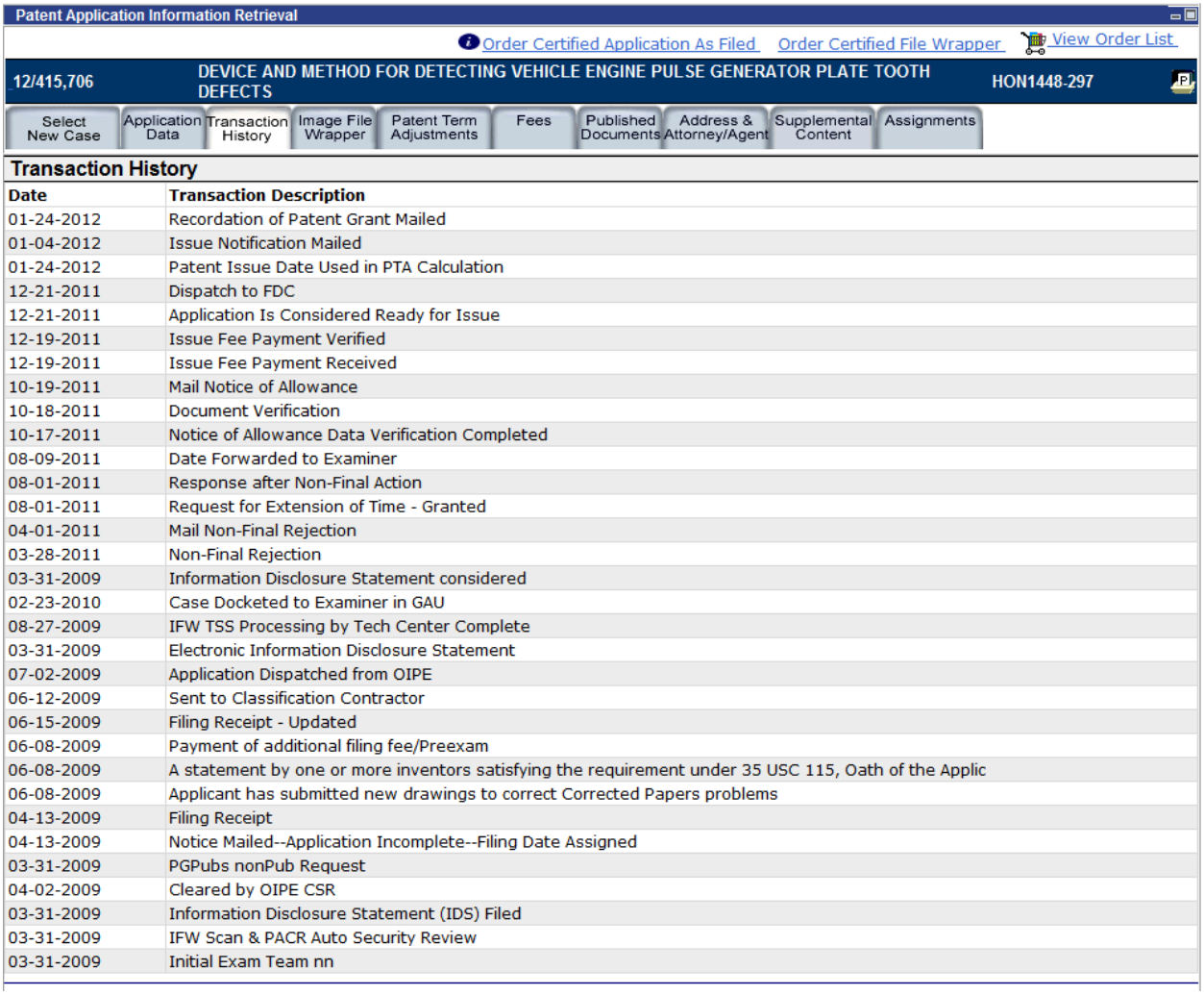
B.2 Variables Included in TRANSACTIONS

At first glance, the TRANSACTIONS data set appears quite simple. It includes only five variables. As with most of the other data sets included in the Public PAIR data release, the data set includes a variable, *application_number*, which identifies the subject application. As a key variable, it can be used to link information from the transactions history data to more general information on the applications as well as continuity and patent term adjustment information. The second variable, *event_code*, identifies the type of transaction. It can be linked to the EVENT_CODES file to retrieve the short transaction descriptions found in the "Transaction History" tab. In Tables B-2 through B-5, we list several of the most common event codes along with more detailed descriptions of each. Table B-2 presents the 100 most common events, Table B-3 presents the event codes for Office actions, Table B-4 presents event codes for applicant amendment filings, and Table B-5 presents event codes that describe the ex parte appeals process. Some of those tables are rather long and are presented at the end of this appendix.

The variable *recorded_date* indicates the date that each transaction occurred and corresponds to the "Date" column on the "Transaction History" tab. The recorded date is formatted as a numeric variable which is set equal to the difference between the filing date and the first day of January 1960. For instance, if an application was received on 10 January 1960, then the date variable would be equal to 9. For dates prior to 1 January 1960, the date variable takes on negative values. In the Stata version of the data set, the %td display format is embedded, so that the dates display with the following format: ddmmmyyyy. The next variable, *sequence_number*, is not found directly on the tab, but it used to order the transactions that are displayed. Note that in Figure B-1 the transactions are not necessarily listed in perfect order by date.

The final variable in TRANSACTIONS, *status_code*, is a numerically coded variable populated for those observations where the event triggers a change in status. For instance the event “Case Docketed to Examiner in GAU” (*event_code*=”DOCK”) switches an application’s status to “Docketed New Case-Ready for Examination” (*status_code*=30). As another example, the event “Notice of Allowance Data Verification Completed” (*event_code*=”N/=.”) switches an application’s status to “Allowed-Notice of Allowance Not Yet Mailed” (*status_code*=90). The *status_code* variable can be linked to the STATUS_CODES file (by matching it to the *appl_status_code* variable in that file) to retrieve short descriptions for each status. Table B-6 lists the most common values of *status_code*. Note that the most common statuses are different from those listed in Table A-7. In the APPLICATION_DATA dataset the only status presented is the current status of the application as of December 31, 2014. In the TRANSACTIONS data set, each change in status for each application is recorded.

Figure B-1: Example of the "Transaction History" Tab



Patent Application Information Retrieval

Order Certified Application As Filed | Order Certified File Wrapper | View Order List

12/415,706 | DEVICE AND METHOD FOR DETECTING VEHICLE ENGINE PULSE GENERATOR PLATE TOOTH DEFECTS | HON1448-297

Select New Case | Application Data | Transaction History | Image File Wrapper | Patent Term Adjustments | Fees | Published Documents | Address & Attorney/Agent | Supplemental Content | Assignments

Transaction History

Date	Transaction Description
01-24-2012	Recordation of Patent Grant Mailed
01-04-2012	Issue Notification Mailed
01-24-2012	Patent Issue Date Used in PTA Calculation
12-21-2011	Dispatch to FDC
12-21-2011	Application Is Considered Ready for Issue
12-19-2011	Issue Fee Payment Verified
12-19-2011	Issue Fee Payment Received
10-19-2011	Mail Notice of Allowance
10-18-2011	Document Verification
10-17-2011	Notice of Allowance Data Verification Completed
08-09-2011	Date Forwarded to Examiner
08-01-2011	Response after Non-Final Action
08-01-2011	Request for Extension of Time - Granted
04-01-2011	Mail Non-Final Rejection
03-28-2011	Non-Final Rejection
03-31-2009	Information Disclosure Statement considered
02-23-2010	Case Docketed to Examiner in GAU
08-27-2009	IFW TSS Processing by Tech Center Complete
03-31-2009	Electronic Information Disclosure Statement
07-02-2009	Application Dispatched from OIPE
06-12-2009	Sent to Classification Contractor
06-15-2009	Filing Receipt - Updated
06-08-2009	Payment of additional filing fee/Preexam
06-08-2009	A statement by one or more inventors satisfying the requirement under 35 USC 115, Oath of the Applic
06-08-2009	Applicant has submitted new drawings to correct Corrected Papers problems
04-13-2009	Filing Receipt
04-13-2009	Notice Mailed--Application Incomplete--Filing Date Assigned
03-31-2009	PGPubs nonPub Request
04-02-2009	Cleared by OIPE CSR
03-31-2009	Information Disclosure Statement (IDS) Filed
03-31-2009	IFW Scan & PACR Auto Security Review
03-31-2009	Initial Exam Team nn

Table B-1: List of variables included in the Transaction History datasets

Variable Name	Description	Type	Formatting
TRANSACTIONS			
application_number	Application Number	str14	%-14s
event_code	Code identifying type of transaction	str8	%-8s
recorded_date	Date of the transaction	float	%td
sequence_number	Used for ordering transactions	float	%9.0g
status_code	Application status code	int	%8.0f
EVENT_CODES			
event_code	Code identifying type of transaction	str8	%-9s
event_description	Transaction description	str100	%-100s
STATUS_CODES			
appl_status_code	Application Status Code	int	%8.0g
status_description	Application Status Description	str97	%-97s

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
1	DOCK	Case Docketed to Examiner in GAU	16,264,663	EX	Indicates that a case has been docketed to a patent examiner and is ready for initial examination by that examiner. Once docketed, cases are examined in the order determined by docket management practices.
2	FWDX	Date Forwarded to Examiner	11,923,609	EX	Indicates that a case is ready for action by the examiner. Different from DOCK in that the application is returning to one of the examiner's amended dockets, typically following an applicant response.
3	WIDS	Information Disclosure Statement (IDS) Filed	9,626,527	AA	Indicates that an Information Disclosure Statement (IDS) has been filed by the patent applicant. An IDS is typically filed in order to satisfy an applicant's duty of disclosure (37 CFR 1.56). The mechanics and content of the filing are governed by 37 CFR 1.97 and 1.98.
4	CTNF	Non-Final Rejection	7,717,229	EX	Following the search of prior art, an office action to applicant may include a rejection of one or more claims and does not close out prosecution; the Examiner may receive a count for the non-final rejection.
5	MCTNF	Mail Non-Final Rejection	7,669,612	EX	Indicates that the Office mailed a non-final rejection to the applicant.
6	M844	Information Disclosure Statement (IDS) Filed	7,395,622	AA	Indicates that an Information Disclosure Statement (IDS) has been filed by the patent applicant. An IDS is typically filed in order to satisfy an applicant's duty of disclosure (37 CFR 1.56). The mechanics and content of the filing are governed by 37 CFR 1.97 and 1.98.
7	IEXX	Initial Exam Team nn	7,159,769	PE	Typically the first code and sets status to 19 ("Application Undergoing Preexam Processing"). Indicates that initial processing has been performed on the application.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
8	A...	Response after Non-Final Action	6,842,372	AA	Amendment filed by the applicant in response to a non-final office action issued by the Examiner based on the merits of the application. Document may be included in AS FILED.
9	SCAN	IFW Scan & PACR Auto Security Review	6,315,420	PE	Indicates that the application was scanned into the Image File Wrapper (IFW) database of patent application images.
10	OIPE	Application Dispatched from OIPE	6,231,909	PE	Indicates that the application has left the Office of Patent Application Processing (OPAP, formerly Office of Initial Patent Examination or OIPE). Indicates some level of completeness of the application.
11	EML_NTR	Email Notification	5,951,620	AD	Indicates that applicant has been sent an email notification that new outgoing correspondence is available for viewing in PAIR.
12	IDSC	Information Disclosure Statement considered	5,934,848	EX	Indicates that an Information Disclosure Statement (IDS) has been considered by an examiner. There is one code entered per IDS, so multiple IDSs will result in multiple entries of the code.
13	N/=.	Notice of Allowance Data Verification Completed	5,522,092	EX	Indicates that the claims in the application have been allowed.
14	MN/=.	Mail Notice of Allowance	5,519,622	EX	Indicates that applicant has been mailed a notice of allowance. Sets application status to 92 ("Allowed -- Notice of Allowance Mailed -- Issue Revision Completed").
15	N084	Issue Fee Payment Verified	5,284,754	ISS	
16	COMP	Application Is Now Complete	5,094,357	PE	Indicates that the specification, drawings (if necessary), etc., have been received.
17	PGM/	Recordation of Patent Grant Mailed	4,848,790	ISS	Indicates that the bond paper copy of the patent grant has been ribboned, sealed, and mailed by the Office of Patent Publication.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
18	L194	Cleared by OIPE CSR	4,609,481	PE	Indicates that the application has been cleared by Classification Security Review (CSR) in OIPE (Office of Initial Patent Examination--now OPAP or Office of Patent Application Processing)
19	WPIR	Issue Notification Mailed	4,574,633	ISS	The patent number and issue date are determined approximately 10 days prior to the patent issuing. After the patent number and issue date are determined. the Office mails an Issue Notification to the applicant. The Issue Notification contains the patent number and issue date. The process of determining the patent number and issue date was changed significantly in 1999. Prior to this change, the patent number and issue date were determined before electronic capture of the data to appear on the patent. If any unclear data was found during electronic data capture, this process could result in the issue date being missed. The current process resolves those issues prior to mailing of the Issue Notification.
20	EML_NTF	Email Notification	4,211,906	AD	Indicates that applicant has been sent an email notification that new outgoing correspondence is available for viewing in PAIR.
21	XT/G	Request for Extension of Time - Granted	4,093,668	EX	By statute, applicants must respond to examiner office actions within 6 months. If they reply between the end of the 3rd month and the end of the 6th month, they must request an extension of time.
22	ELC_RVW	Electronic Review	4,065,488		
23	RCAP	Reference capture on IDS	3,458,357		Indicator of an IDS filing.
24	PILS	Application Is Considered Ready for Issue	3,332,985	ISS	An indicator that all requirements have been met for the application to issue as a patent.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
25	CTFR	Final Rejection	3,160,574	EX	Any second or any subsequent actions on the merits from the Examiner may be made final (i.e. final rejection), except where the Examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure.
26	MCTFR	Mail Final Rejection (PTOL - 326)	3,156,370	EX	Indicates that a final rejection has been mailed in the application. This typically follows a response (A…) to a non-final rejection (MCTNF), though it is possible in rare circumstances for a final rejection to occur without a non-final rejection having occurred (see MPEP 706.07(b) regarding first action final rejections). A final rejection closes prosecution in an application where at least one of the claims has been found by the examiner to be unpatentable.
27	IFEE	Issue Fee Payment Received	2,918,079	ISS	Indicates that the Office has received the issue fee from applicant. This sets the application status to 94 ("Publications -- Issue Fee Payment Received"). The issue fee varies based on the size of the entity applying for the patent. As of January 2014, the issue fee ranged from $240 for a micro-entity to $960 for a large entity. See 37 CFR 1.18(a)(1) for the current utility patent issue fees.
28	FLRCPT.O	Filing Receipt	2,876,702	PE	Indicates that a filing receipt has been generated.
29	R1021	Receipt into Pubs	2,723,657		
30	D1935	Dispatch to FDC	2,715,910		Dispatch to the Final Data Capture processing center for printing and final issue preparation
31	PTAC	Patent Issue Date Used in PTA Calculation	2,675,276	AD	Indicates that the PTA calculation has been made. Also indicates that the application has been assigned a patent number and issue date.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
32	PG-ISSUE	PG-Pub Issue Notification	2,668,448	AD	Indicates that the Pre-Grant Publication (PG-Pub) of the application has been published. This is also a point at which an application becomes available in Public PAIR.
33	C.AD	Correspondence Address Change	2,612,289	AA	Applicant has submitted a request to change the correspondence address or the Office has entered a requested change to the correspondence address. The Office will send all notices, official letters, and other communications relating to the application to the person associated with the correspondence address. An applicant may also designate a maintenance fee address different from the correspondence address. All maintenance fee communicatons will be sent to this fee address. Effective February 11, 2014, maintenance fee address changes will generate an MFEE.C.AD code. Note that during 2000-2001, a large number of previously-filed correspondence address changes were entered into the system.
34	A.PE	Preliminary Amendment	2,325,115	AA	A preliminary amendment has been filed in the application. A preliminary amendment is an amendment that is received in the Office on or before the mail date of the first Office action. If present on the filing date of the application, it is treated as part of the original disclosure of the application.
35	TSSCOMP	IFW TSS Processing by Tech Center Complete	2,247,912		Image File Wrapper Processing by Technology Support Staff (TSS)

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
36	PGPC	Sent to Classification Contractor	2,155,104	PE	Indicates that the application has been sent to the contractor responsible for assigning the classification(s) of the application. This classification is necessary in order to route the application to the appropriate Technology Center (TC) within the USPTO. This sets the status of the application to 17 ("Sent to Classification contractor").
37	RQPR	Request for Foreign Priority	2,119,299	AA	Applicant may provide priority papers to support a request for foreign priority.
38	DVER	Document Verification	2,101,203		A Notice of Allowance, for example, must go through document verification.
39	PA..	Change in Power of Attorney (May Include Associate POA)	1,936,106	AA	Applicant submitted a Power of Attorney document. Applicant may file a change in Power of Attorney at any time during prosecution of an application. The POA indicates representatives given permission to act on behalf of the inventor or assignee to prosecute an application. Applicant may name as representative any of the following three: (1) one or more joint inventors of the application, (2) the registered patent practitioners associated with a customer number, or (3) ten or fewer individually listed registered patent practitioners. Regarding associate power of attorney, the practice of associate power of attorney was eliminated by the USPTO effective June 25, 2004. It was supplanted by the use of customer numbers.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
40	A.NE	Response after Final Action	1,868,843	AA	Amendment provided by the applicant after the Examiner closes prosecution with a final rejection. Amendment is not automatically entered by the Examiner. It will not be entered if it requires additional search or more than cursory review.
41	EIDS.	Electronic Information Disclosure Statement	1,755,375	AA	Applicant submitted an electronic IDS.
42	INCD	Notice Mailed--Application Incomplete--Filing Date Assigned	1,682,045	PE	Notice is mailed indicating that a necessary part of the application is missing.
43	EX.A	Examiner's Amendment Communication	1,511,110	EX	The examiner amended the application and that amendment has been processed. Typically, this is done in order to bring the application into condition for allowance and is documented in a Notice of Allowance.
44	BRCE	Workflow - Request for RCE - Begin	1,398,129	AD	See RCEX below
45	ABN9	Disposal for a RCE / CPA / R129	1,394,052	AD	See RCEX below

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
46	RCEX	Request for Continued Examination (RCE)	1,391,929	AA	Applicant filed a request for continued examination (RCE). If prosecution in an application is closed, an applicant may request continued examination (RCE) of the application by filing a submission and the fee prior to payment of the issue fee, abandonment of the application, or the filing of a notice of appeal. A submission includes, but is not limited to, an information disclosure statement, an amendment to the written description, claims, or drawings, new arguments, or new evidence in support of patentability. The USPTO will withdraw the finality of any Office action and the submission will be entered and considered. This typically occurs at some point after the application has been finally rejected (MCTFR). Currently, an RCE causes the status to change to 30 ("Docketed New Case - Ready for Examination"). Prior to November 2009, an RCE caused the status to change to 71 ("Response to Non-Final Office Action Entered and Forwarded to Examiner").
47	ADDFLFEE	Additional Application Filing Fees	1,383,459	PE	
48	EXIN	Examiner Interview Summary Record (PTOL - 413)	1,268,286	EX	When an Examiner conducts an interview with applicant, the Examiner summarizes the record of that interview including any agreements reached in an Examiner Interview Summary Record.
49	FILM	Application Captured on Microfilm	1,260,466	PE	
50	SENT	Workflow - File Sent to Contractor	1,248,651	AD	

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
51	CTRS	Restriction/Election Requirement	1,239,241	EX	Restriction is a generic term that includes the practice of requiring an election between distinct inventions, for example, election between combination and sub-combination inventions, and the practice relating to an election between independent inventions, for example, an election of species. An Examiner may make a restriction requirement when an application may properly support separate patents and they are either independent or distinct.
52	MCTRS	Mail Restriction Requirement	1,237,868	EX	A restriction requirement and/or election of species has been mailed to the applicant. This requires the applicant to elect an invention and/or species. If the application contains claims to multiple independent or distinct inventions and examination of these multiple inventions would be burdensome, the examiner may require the applicant to elect an invention to be examined.
53	ABN2	Aband. for Failure to Respond to O. A.	1,232,313	ABN	The application is considered abandoned because the applicant did not respond to the examiner's office action within 6 months.
54	OATHDECL	A statement by one or more inventors satisfying the requirement under 35 USC 115, Oath of the Applic	1,230,787	PE	
55	MABN2	Mail Abandonment for Failure to Respond to Office Action	1,227,860	ABN	A notice is mailed to the applicant stating that the application has been abandoned due to failure to respond to an office action.
56	ROIPE	Application Return TO OIPE	1,205,580	PE	OIPE is the Office for Initial Patent Examination
57	WROIPE	Application Return from OIPE	1,202,853	PE	OIPE is the Office for Initial Patent Examination

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
58	ELC.	Response to Election / Restriction Filed	1,166,428	AA	Restriction is a generic term that includes the practice of requiring an election between distinct inventions, for example, election between combination and sub-combination inventions, and the practice relating to an election between independent inventions, for example, an election of species. An Examiner may make a restriction requirement when an application may properly support separate patents and they are either independent or distinct. The Examiner may make this request either over the telephone, in which case the applicant's response is recorded in the next Office action, or in a separate letter making the Election or Restriction requirement. In the latter case, the applicant responds to this requirement in a separate response electing an invention or species to be examined.
59	TI1050	Transfer Inquiry to GAU	1,149,392	PE	Transfer inquiries can be initiated when a case has been docketed to an incorrect art unit or when an un-docketed new case is assigned an incorrect classification.
60	CTAV	Advisory Action (PTOL-303)	1,121,270	EX	Applicant may submit an amendment in an application after the Examiner has closed out prosecution with a final rejection. The amendment is not automatically entered by the Examiner. If the amendment does not place the application in condition for allowance, the Examiner will send the applicant an advisory action noting whether the proposed amendment will be entered or not, and if not, why it will not be entered. The Examiner also notes to applicant the status of the claims.
61	MCTAV	Mail Advisory Action (PTOL - 303)	1,119,956	EX	Advisory action mailed to the applicant. See CTAV above.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
62	MEX.A	Mail Examiner's Amendment	1,064,164	EX	The examiner amended the application and this amendment was mailed or otherwise delivered to the applicant. Typically, this is done in order to bring the application into condition for allowance and is documented in a Notice of Allowance.
63	DRWF	Workflow - Drawings Finished	1,015,546	AD	
64	LET.	Miscellaneous Incoming Letter	957,696	AA	A miscellaneous incoming letter from applicant shall be submitted any time during prosecution that is not directed to a requirement, notice or Office action sent by the USPTO. Document may be included in AS FILED.
65	EXP.	Expire Patent	941,231	AD	
66	C.ADB	Correspondence Address Change	909,044	AA	Analogous to C.AD above.
67	SETS	Set Application Status	858,558	AD	A code primarily used for older applications that have been added to Public PAIR.
68	M903	Notice of DO/EO Acceptance Mailed	827,735	PE	The USPTO sends a Notice to applicant of the acceptance of their application by the USPTO as a Designated Office or Elected Office when applicant's international application has met all of the criteria for becoming a US national stage application and is accepted for national patentability examination in the USPTO.
69	RCDT	Receipt Date	813,610		
70	MLIB	Record Copy Mailed	809,049		
71	DRWM	Workflow - Drawings Matched with File at Contractor	791,997	AD	
72	C614	New or Additional Drawing Filed	787,444	AA	The applicant has filed a new drawing to accompany the application.
73	FLRCPT.U	Filing Receipt - Updated	758,856	PE	Indicates that a filing receipt has been updated.
74	EXPRO	EXPIRED PROVISIONAL	753,665	AD	Code indicates that a provisional application has expired after 12 months.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
75	EX.R	Reasons for Allowance	709,881	EX	Another indicator of allowance.
76	PET.	Petition Entered	685,076	AA	Any incoming petition from applicant shall include all petition attachments submitted during prosecution of an application that is entered/scanned into the file.
77	P102	Notification Concerning Payment of Fees	652,795	PCT	The form PCT/RO/102 is generated for every new international application. It provides the applicant with an explanation of all required fees, how much money has been collected for each fee and whether any addition money is due.
78	L198	Referred to Level 2 (LARS) by OIPE CSR	644,663	PE	License and Review (L&R / LAR) determine whether an application will not be published because publication or disclosure of the application would be detrimental to national security.
79	371COMP	371 Completion Date	641,222	PE	Indicator of national stage entry of existing Patent Cooperation Treaty (PCT) application. Effective filing date of resulting regular application.
80	P105	Notification of Intntl. Appl. Number and Intntl. Filing Date	615,448	PCT	The form PCT/RO/105 is akin to a filing receipt for an international application.
81	APPERMS	Applicants have given acceptable permission for participating foreign	586,154		The Priority Document Exchange (PDX) program enables electronic exchange of certified priority documents between the USPTO, EPO, JPO, and KIPO.
82	L128	Cleared by L&R (LARS)	584,474	PE	License and Review (L&R) determine whether an application will not be published because publication or disclosure of the application would be detrimental to national security.
83	N423	Post Issue Communication - Certificate of Correction	548,369	ISS	Usually to correct minor mistakes that do not affect the scope of the claims.
84	DRWI	Workflow - Drawings Received at Contractor	524,486	AD	

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
85	N/AP	Notice of Appeal Filed	511,996	AA	Applicant filed a Notice of Appeal. After two rejections from the Examiner, an applicant may file a Notice of Appeal noting that applicant (now appellant) is appealing the Examiner's decision. The appeal is to be decided upon by an administrative patent judge from the Patent Board within the USPTO. The judge weighs the evidence in the Appeal Brief and in an Examiner's Answer to reach a decision.
86	DIST	Terminal Disclaimer Filed	498,287	AA	Applicant filed a terminal disclaimer. A timely filed terminal disclaimer may be filed by applicant to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. The purpose of a terminal disclaimer is to obviate a double patenting rejection by removing the potential harm to the public by issuing a second patent, and not to remove a patent as prior art. (For example: PTO/SB/25 or PTO/SB/26)
87	M327	Miscellaneous Communication to Applicant - No Action Count	479,673	EX	Any communication from the USPTO to applicant that does not fit into any other doc code may be designated as a miscellaneous communication. Those communications that an Examiner would not receive an action count for would include such communications as supplying a missing page from an Office action or clarifying an action taken at an interview.
88	MM327	Mail Miscellaneous Communication to Applicant	479,413	EX	Mailing of a miscellaneous communication. See M327 above.
89	D1220	Dispatch to Publications	471,184	AD	

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
90	TR.Q	Transfer Inquiry	455,642	PE	Transfer inquiries can be initiated when a case has been docketed to an incorrect art unit or when an undocketed new case is assigned an incorrect classification.
91	MEXIN	Mail Examiner Interview Summary (PTOL - 413)	437,260	EX	The Office mailed an interview summary form (PTOL-413) to the applicant. This can be its own mailing or an attachment to another Office action. This code was introduced in 2001. More specific codes indicating whether the interview was applicant-initiated or examiner-initiated, telephonic, in-person, or a video conference were introduced starting in 2011. Consequently, use of this code has decreased after peaking at 85,679 occurrences in 2010.
92	PDREQUST	Request from applicant for the USPTO to retrieve the Priority Document	427,016	AA	Request from the applicant authorizing the USPTO to electronically retrieve Official Priority Documents from participating foreign IP Office and enter them into the file wrapper.
93	FTFI	FITF set to NO - revise initial setting	425,947	PE	First inventor to file indicator is set to NO. The value of the FITF indicator determines which prior-art framework will be applied to the application during examination. (If NO then pre-AIA. If YES, then the AIA provisions apply.)
94	TCPB	Printer Rush- No mailing	409,689		When there is an issue in an allowed application that requires correction or clarification in the Technology Center (TC), the Office of Publications (PUBS) returns the application to the TC as a Printer Query. In response, the Examiner may correct and/or initial various documents/forms to update the image file wrapper. This code indicates that it was not necessary to mail documents to the Applicant as part of the Printer Rush.

Table B-2: More detailed descriptions of the 100 most common event codes.

Rank	Code	Description	Frequency	Category	Details
95	FLFEE	Payment of additional filing fee/Preexam	404,457	PE	Applicant has paid additional filing fees.
96	DKST	Case Docketed or Redocketed to Examiner in GAU	399,674	EX	Code was used for 6 months in 2001.
97	PUBTC	Pubs Case Remand to TC	390,952		An allowed application may be returned to the Technology Center (TC) for additional work or clarification.
98	A.NA	Amendment after Notice of Allowance (Rule 312)	385,749	AA	When applicant files an amendment after the Notice of Allowance has been mailed but before the issue fee is paid, the amendment is not entered automatically. It may only be entered upon recommendation of a Primary Examiner. It will not be entered if it requires additional search or more than cursory review.
99	P210	International Search Report Ready to be Mailed	379,628	PCT	This code refers to prior art searches conducted by USPTO under the Patent Cooperation Treaty (PCT). Certain PCT applications are assigned to the USPTO as the searching authority. In such cases examiners at USPTO conduct the prior art search and then forward the results of that search to the appropriate authority. This code indicates that the international search report is ready for mailing.
100	MP210	Mail International Search Report	379,552	PCT	This code indicates that the International Search Report has been mailed to the appropriate authority.

Categories

PE	Pre-examination	ABN	Abandonment
EX	Examination	ISS	Patent Issue
AA	Applicant Activity	PCT	PCT Activity
AD	Administrative		

Table B-3: Event codes for Office actions

Event Code	Description	Details
CTNF	Non-Final Rejection	Following the search of prior art, an office action to applicant includes a rejection of one or more claims and does not close out prosecution, the Examiner receives a non- final rejection count.
MCTNF	Mail Non-Final Rejection	Indicates that the Office mailed a non-final rejection to the applicant.
N/=.	Notice of Allowance Data Verification Completed	Indicates that 1 or more claims in the application have been allowed.
MN/=.	Mail Notice of Allowance	Indicates that applicant has been mailed a notice of allowance. Sets application status to 92 ("Allowed -- Notice of Allowance Mailed -- Issue Revision Completed").
CTFR	Final Rejection	Any second or any subsequent actions on the merits from the Examiner is made final (i.e. final rejection), except where the Examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in a timely filed information disclosure.
MCTFR	Mail Final Rejection (PTOL - 326)	Indicates that a final rejection has been mailed in the application. This typically follows a response (A…) to a non-final rejection (MCTNF), though it is possible in rare circumstances for a final rejection to occur without a non-final rejection having occurred (see MPEP 706.07(b) regarding first action final rejections). A final rejection closes prosecution in an application where at least one of the claims has been found by the examiner to be unpatentable.
CTRS	Restriction/Election Requirement	Restriction is a generic term that includes the practice of requiring an election between distinct inventions, for example, election between combination and sub-combination inventions, and the practice relating to an election between independent inventions, for example, an election of species. An Examiner may make a restriction requirement when an application may properly support separate patents and they are either independent or distinct.

MCTRS	Mail Restriction Requirement	A restriction requirement and/or election of species has been mailed to the applicant. This requires the applicant to elect an invention and/or species. If the application contains claims to multiple independent or distinct inventions and examination of these multiple inventions would be burdensome, the examiner may require the applicant to elect an invention to be examined.

Table B-4: Selected event codes for amendment filings by applicants

Event Code	Description	Details
A...	Response after Non-Final Action	Amendment filed by the applicant in response to a non-final office action issued by the Examiner based on the merits of the application. Document may be included in AS FILED.
A.I.	Informal or Non-Responsive Amendment after Examiner Action	Amendment filed by the applicant in response to an Examiner action wherein the Examiner determines the amendment is a bonafide but incomplete attempt to provide a complete response. In such an instance, the Examiner gives the applicant one month from the date of mailing of a letter of non-responsiveness to complete the reply.
A.LA	Untimely (Late) Amendment Filed	When applicant files an amendment after the expiration of the statutory period, the application is abandoned and the remedy is to petition to revive it. The late or untimely amendment is endorsed on the file wrapper, but not formally entered.
A.NA	Amendment after Notice of Allowance (Rule 312)	When applicant files an amendment after the Notice of Allowance has been mailed but before the issue fee is paid, the amendment is not entered automatically. It may only be entered upon recommendation of a Primary Examiner. It will not be entered if it requires additional search or more than cursory review.
A.NE	Response after Final Action	Amendment provided by the applicant after the Examiner closes prosecution with a final rejection. Amendment is not automatically entered by the Examiner. It will not be entered if it requires additional search or more than cursory review.
A.NQ	Amendment Crossed in Mail	When an amendment is filed on or before the mailing date of the regular Office action, but reaches the Examiner later, the amendment is considered to have crossed the Office action in the mail. The amendment that crossed in the mail usually requires the Examiner to prepare a supplemental action that includes a new period for response.
A.PE	Preliminary Amendment	A preliminary amendment has been filed in the application. A preliminary amendment is an amendment that is received in the Office on or before the mail date of the first Office action. If present on the filing date of the application, it is treated as part of the original disclosure of the application.

Table B-4: Selected event codes for amendment filings by applicants

Event Code	Description	Details
A.QU	Response after Ex Parte Quayle Action	An Ex parte Quayle action is an Office action noting that all claims are allowable and the application is in condition for allowance except as to matters of form such as correction of the specification or a new oath. An Ex parte Quayle action closes prosecution on the merits. A proper response from the applicant to an Ex parte Quayle action is limited to correcting these matters of form.

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
N/AP	Notice of Appeal Filed	Applicant filed a Notice of Appeal. After two rejections from the Examiner, applicant may file a Notice of Appeal noting that applicant (now appellant) is appealing the Examiner's decision. The appeal is to be decided upon by an administrative patent judge from the Patent Board within the USPTO. The judge weighs the evidence in the Appeal Brief and in an Examiner's Answer to reach a decision.
AP.B	Appeal Brief Filed	After two rejections from the Examiner, applicant (now appellant) may file an Appeal Brief of the Examiner's decision. The appeal is to be decided upon by an administrative patent judge from the Patent Board within the USPTO. The judge weighs the evidence in the Appeal Brief and in an Examiner's Answer to reach a decision.
AP/A	Amendment/Argument after Notice of Appeal	An amendment may be filed at any time after final rejection, but before the jurisdiction of the case has passed to the Patent Board. However, after the Notice of Appeal has been filed by applicant, any amendment or argument filed by applicant is not normally entered unless the paper presented clearly places the application in condition for allowance.
AP_DK_M	Docketing Notice Mailed to Appellant	A docketing notice is sent to the appellant letting the appellant know that the application on appeal has been received at the Patent Board. The notice provides the appeal number and the date the appeal brief, reply brief (if any) and the request for hearing (if any) were filed.
APAR	Administrator Remand to the Examiner by BPAI	The Patent Board has the authority to remand a case to the Examiner when it deems necessary. For example, the Board may remand a case for a fuller description of the claimed invention, for further search, for preparation by the Examiner of a Supplemental Examiner's Answer in response to a reply brief, or to consider affidavits or declarations from the appellant.

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
APBD	Notice -- Defective Appeal Brief	An appellant's brief must be responsive to every ground of rejection stated by the Examiner. If the appeal brief fails to address any such ground, the Examiner sends the appellant a notice of a defective brief and gives the appellant time to correct the defect.
APCH	Confirmation of Hearing by Appellant	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board. The appellant must send a confirmation within a stated time period confirming that appellant will attend.
APD1	Dec on Reconsideration - Denied	Appellant may request a rehearing before the Patent Board if the Board affirms the Examiner in whole or in part. The Board may decide that there are no new issues to reconsider and deny the request.
APD2	Dec on Reconsideration - Granted	Appellant may request a rehearing before the Patent Board if the Board affirms the Examiner in whole or in part. The Board may decide that there are issues that need to be reconsidered and grant the request.
APD3	Dec on Reconsideration - Granted in Part	Appellant may request a rehearing before the Patent Board if the Board affirms the Examiner in whole or in part. The Board may decide that there are some issues that need to be considered and other issues that do not need to be reconsidered and grant the request in part.
APDA	BPAI Decision - Examiner Affirmed	The Patent Board reaches a decision in response to an appeal brief filed by the appellant specifying alleged errors in the Examiner's rejection and an Examiner's Answer prepared by the Examiner restating the rejection and responding to appellant's arguments. The Board is comprised of administrative patent judges within the USPTO who reach a decision to affirm reverse, or affirm in part the decision of the Examiner. In this instance, the Examiner is affirmed in full without explanation.

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
APDP	BPAI Decision - Examiner Affirmed in Part	The Patent Board reaches a decision in response to an appeal brief filed by the appellant specifying alleged errors in the Examiner's rejection and an Examiner's Answer prepared by the Examiner restating the rejection and responding to appellant's arguments. The Board is comprised of administrative patent judges within the USPTO who reach a decision to affirm reverse, or affirm in part the decision of the Examiner. In this instance, the Examiner is affirmed in part.
APDR	BPAI Decision - Examiner Reversed	The Patent Board reaches a decision in response to an appeal brief filed by the appellant specifying alleged errors in the Examiner's rejection and an Examiner's Answer prepared by the Examiner restating the rejection and responding to appellant's arguments. The Board is comprised of administrative patent judges within the USPTO who reach a decision to affirm reverse, or affirm in part the decision of the Examiner. In this instance, the Examiner is reversed in full.
APDS	Appeal Dismissed	An Appeal to the Patent Board is dismissed if the brief from the appellant is not filed on time or if the brief is not compliant, for example by not arguing a ground of rejection involving all of the appealed claims or by not including all of the portions required of an appeal brief by 37 CFR 1.192. When an appeal is dismissed, all claims not allowed are withdrawn. If no claims are allowed, the case is abandoned. If some claims are allowed, the application is passed to issue.
APDT	BPAI Decision/Order under 41.50(d)	The Patent Board reaches a decision in response to an appeal brief filed by the appellant specifying alleged errors in the Examiner's rejection and an Examiner's Answer prepared by the Examiner restating the rejection and responding to appellant's arguments. The Board is comprised of administrative patent judges within the USPTO who reach a decision. That decision may be to require appellant to clarify the record under 37CFR 1.196 (d). The clarification may include explaining the applicability of particular case law not previously identified as relevant to the appeal or explaining the applicability

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
		of particular references not previously of record.
APE2	2nd or Subsequent Examiner's Answer to Appeal Brief	An Examiner's Answer is prepared by the Examiner restating the rejection and responding to appellant's arguments as stated in appellant's appeal brief to the Patent Board. If the appellant files a reply brief, the Board may remand the application to the Examiner for the express purpose of having the Examiner prepare a Supplemental Examiner's Answer to respond to the Reply Brief.
APEA	Examiner's Answer to Appeal Brief	An Examiner's Answer is prepared by the Examiner restating the rejection and responding to appellant's arguments as stated in appellant's appeal brief to the Patent Board.
APND	Notice -- Defective Notice of Appeal	A Notice is sent to the appellant of a defective Notice of Appeal if the Notice was not filed on time, or the fee was unpaid, or if none of the claims have been twice rejected.
APNH	Notification of Appeal Hearing	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board and confirmation of the appellant's attendance is required.

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
APNR	Advisory on Non-Entry of Reply Brief	In response to an Examiner's Answer prepared by the Examiner following appellant's appeal brief to the Patent Board, appellant has a right to file a reply brief within two months of the mailing date of the Examiner's Answer. If the reply brief contains an amendment or evidence, or other formal defect, however, it is not considered to be a reply brief and is not entitled to entry. If a reply brief of this nature is submitted, a notice of non-entry of reply brief will be sent to appellant informing the appellant of non-entry of the reply brief. updated: 11/10/08
APOH	Request for Oral Hearing	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board.
APPD	Hearing Postponement Denied	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board. The appellant must send a confirmation within a stated time period confirming that appellant will attend. If appellant cannot attend at the designated time, appellant may request a postponement of the hearing. Such a request will not be granted will not be granted in the absence of convincing reasons in support of the requested change.
APPG	Hearing Postponement Granted	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board. The appellant must send a confirmation within a stated time period confirming that appellant will attend. If appellant cannot attend at the designated time, appellant may request a postponement of the hearing. Such a request may be granted if it does not unduly delay a decision in the case or place undue burden on the Board.

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
APPH	Postponement of Oral Hearing Request	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board. The appellant must send a confirmation within a stated time period confirming that appellant will attend. If appellant cannot attend at the designated time, appellant may request a postponement of the hearing. Such a request may be granted if it does not unduly delay a decision in the case or place undue burden on the Board.
APPR	Panel Remand to the Examiner by BPAI	The Patent Board may remand a case to the examiner when it deems it necessary. For example, the Board may remand for a fuller description of the claimed invention, for a further explanation of the pertinence of the references, for further search where it feels that the most pertinent art has not been cited, or to consider an amendment, affidavit, or declaration. The Board may also remand an application to the examiner to prepare a supplemental examiner's Answer in response to a reply brief.
APRB	Reply Brief Filed	In response to an Examiner's Answer prepared by the Examiner following appellant's appeal brief to the Patent Board, appellant has a right to file a reply brief within two months of the mailing date of the Examiner's Answer.
APRD	Order Returning Undocketed Appeal to the Examiner	An order returning an undocketed appeal to the Examiner is sent by the Patent Board if upon review, the Board determines that the application is not ready for docketing. Reasons for the returning the case may be that there was no appropriate indication that an appeal conference had been held, or that an Information Disclosure Statement had been considered, or that an amendment approved for entry by the Examiner had been entered, or that certain references relied upon by the Examiner were scanned in their entirety into IFW.

Table B-5: Selected event codes for the appeals process

Event Code	Description	Details
APWH	Waiver of Hearing by Appellant	Appellant may request an oral hearing before the Patent Board. In response to that request, a notice of the hearing stating the date, time and docket is forwarded to the appellant by the Board. The appellant must send a confirmation within a stated time period confirming that appellant will attend. If appellant no longer can or wishes to attend the scheduled hearing, appellant should inform the Board of a waiver of hearing at the earliest possible opportunity.

Table B-6: Most common application status codes in TRANSACTIONS

Code	Description	Frequency
41	Non Final Action Mailed	9,334,843
40	Non Final Action Counted, Not Yet Mailed	9,082,687
71	Response to Non-Final Office Action Entered and Forwarded to Examiner	8,851,822
30	Docketed New Case - Ready for Examination	8,312,483
20	Application Dispatched from Preexam, Not Yet Docketed	7,405,446
19	Application Undergoing Preexam Processing	7,178,294
90	Allowed -- Notice of Allowance Not Yet Mailed	5,468,009
95	Publications -- Issue Fee Payment Verified	5,405,827
150	Patented Case	5,343,902
93	Notice of Allowance Mailed -- Application Received in Office of Publications	3,347,768
61	Final Rejection Mailed	3,199,224
60	Final Rejection Counted, Not Yet Mailed	3,177,743
92	Allowed -- Notice of Allowance Mailed -- Issue Revision Completed	3,056,754
94	Publications -- Issue Fee Payment Received	2,909,624
17	Sent to Classification contractor	2,156,901
80	Response after Final Action Forwarded to Examiner	1,786,719
161	Abandoned -- Failure to Respond to an Office Action	1,239,599
18	Application Returned back to Preexam	1,205,646

Appendix C: Description of the Continuity Data Release

C.1 Datasets Included in this Release

This data release consists of two datasets that, after matching with the APPLICATION_DATA file, provide all of the information that an analyst would be able to glean from the "Continuity Data" tab on PTO's Public PAIR website. An example of the "Continuity Data" tab is presented in Figure C-1. Note that the tab is broken out into two panels. The top panel presents information on the parents of the application. Parents are previous applications from which the current application of interest claims benefit. As is illustrated in Figure C-1, a given application can have more than one parent. For example, in this case the regular nonprovisional utility application **10/000,240** claims the benefit of the previous regular nonprovisional application **09/837,917**, which itself claims the benefit of the previous regular nonprovisional application **09/405,294**. The bottom panel presents information on the children of application. In our example we see that three separate applications all claim the benefit of application **10/000,240**. In a sense, however, they are really claiming the benefit of the original application **09/405,294**, as seen in Figure C-2, which shows the continuity data tab for that application. Note also that the applications found in the continuity data tab for **10/000,240** are not the only applications that claim benefit from **09/405,294**. We'll return to this example after we discuss how the data sets are structured.

The two datasets provided in this release correspond to the two panels on the "Continuity Data" tab for each application that has either parents or children. The first dataset is named CONTINUITY_PARENTS and it contains information on the application numbers and filing dates of all previous applications from which a subject application claims benefit. If an application has multiple parents, then the file will include multiple observations for that application. This dataset includes 6,094,920 observations on 3,838,698 unique subject applications. See Table C-1 for a list of the variables included in CONTINUITY_PARENTS.

The second dataset is CONTINUITY_CHILDREN and it contains similar information for all subsequent applications that claim benefit of a given subject application. As was the case with the CONITNUITY_PARENTS file, the CONTINUITY CHILDREN file includes multiple observations for those applications that have multiple children. This dataset includes 5,249,574 observations on 2,612,077 unique subject applications. See Table C-2 for a list of the variables included in CONTINUITY_CHILDREN. In the next section we describe the variables in more detail.

C.2 Variables Included in the Two Data Sets

Each of the data sets contains four variables. Figure C-3 maps the variables to the information that can be found on the Continuity Data tab. The variable *application_number* is common to both the CONTINUITY_PARENTS and CONTINUITY_CHILDREN data sets. This variable identifies the application that has at least one parent (or child) and can be used to link information contained in either of these two data sets back to the various other data sets that are included in the greater Public PAIR Research Files release.

The variable *parent_application_number* is available only in the CONTINUITY_PARENTS dataset and it identifies an application as a parent of the subject application (identified using the *application_number* variable). The variable *child_application_number* is available only in the CONTINUITY_CHILDREN data set and it identifies an application as a child of the subject application (again, identified using the *application_number* variable).

The variable *parent_filing_date* is available only in the CONTINUITY_PARENTS data set. It provides the filing date of the application identified using the *parent_application_number* variable. Likewise, the variable *child_filing_date* is available only in the CONTINUITY_CHILDREN data set. It provides the filing date of the application identified using the *child_application_number* variable. Each filing date variable is formatted as a numeric variable which is set equal to the difference between the filing date and the first day of January 1960. For instance, if an application was received on 10 January 1960, then the date variable would be equal to 9. For dates prior to 1 January 1960, the date variable takes on negative values. In the Stata version of the data set, the %td display format is embedded, so that the dates display with the following format: ddmmmyyyy. For example, when *parent_filing_date* is equal to 12,500, it displays in Stata as "23mar1994."

The final variable, *continuation_type*, is common to the two data sets, but is interpreted differently depending on which data set one is using.[71] In the CONTINUITY_PARENTS data set, the *continuation_type* variable describes the type of continuation from the parent (identified using *parent_application_number*) to the subject application (identified using *application_number*). In the CONTINUITY_CHILDREN data set, the *continuation_type* variable describes the type of continuation from the subject application (identified using *application_number*) to the child (identified using *child_application_number*). The

[71] It should also be noted that some of the relationships described using the *continuation_type* variables are not necessarily thought of as continuations by PTO. For instance, when a regular nonprovisional application claims the benefit of an earlier provisional application, the latter application is not technically a continuation of the earlier one. This is also usually true when new applications claim the benefit of a prior application filed under the patent cooperation treaty (PCT).

variable can take on any one of 11 values. In Tables C-3 and C-4, we present the counts for these values in the CONTINUITY_PARENTS and CONTINUITY_CHILDREN data sets, respectively.

Regardless of the data set examined, claims of benefit from provisional applications tend to be the most common, followed by traditional continuations. Together, they account for roughly 60 percent of the continuations in the CONTINUITY_PARENTS data set.

C.3 How the Data Sets Are Organized

The two data sets are organized to mimic the panels found on the Continuity Data tab on Public PAIR. Table C-5 presents the data for application **10/000,240**. The contents of the table can be compared to Figures C-1 and C-3. The CONTINUITY_PARENTS data set includes two observations for application **10/000,240**, corresponding with the two parents listed in the top panel in Figure C-1, while the CONTINUITY_CHILDREN data set includes three observations, corresponding with the thee child applications listed in the bottom panel of the figure.

C.4 Data Irregularities

One oddity in the data is that the vast majority of the national stage entries (denoted by the code "NST") are not represented in the CONTINUITY_CHILDREN data set. The main reason for this is that coverage of Patent Cooperation Treaty (PCT) applications is nearly non-existent for the period prior to 1995. Many PCT applications, therefore, are not included in Public PAIR. When the children of these missing PCT applications (the national stage entries) are included in Public PAIR, the PCT applications appear in CONTINUITY_PARENTS as parent applications for these national stage entries. However, because these PCT applications are not in Public PAIR, we don't see the relationship in the CONTINUITY_CHILDREN data set.

There are other inconsistencies in the data that users should keep in mind. For example, beyond the issue with the missing PCT applications, the distributions of the *continuation_type* variable across the two data sets don't match very well. Part of the problem is that there are duplicates of entire lines of data in each data set, although the problem is almost exclusive to the CONTINUITY_CHILDREN data set. In that data set there are 78,272 duplicative observations, while in the CONTINUITY_PARENTS data set there are only 2 duplicative observations. In Table C-6, we compare the frequencies of the different values of the *continuation_type* variable across the two data seta after dropping the duplicates in each. Here the distributions match up better, but there are still some discrepancies. This cannot be explained by inconsistencies in the coding of the *continuation_type* variable across the two data sets. In 99.95 percent of the cases where the parent-child pair can be found in both files (5,133,997 cases), the *continuation_type*

variables match. Most of the differences are driven by the fact that there are significant numbers of parent-child pairs that can be found in one data set but not the other.

For example, there are 956,223 parent-child pairs in CONTINUITY_PARENTS that are not in CONTINUITY_CHILDREN. The vast majority of these (836,626) are national stage entries of PCT applications. However, roughly 97,500 continuations and 21,000 continuations-in-part (CIPs) appear to be missing from CONTINUITY_CHILDREN as well. In addition, 32,589 parent-child pairs that are in CONTINUITY_CHILDREN are not in CONTINUITY_PARENTS. Roughly 20,500 of these are cases where the parent is a provisional application, while roughly 10,400 are either continuation applications or CIPs. We suggest that users consider using the CONTINUITY_PARENT data set primarily, and supplement it with parent-child pairs that can only be found in the CONTINUITY_CHILDREN data set.

Table C-1: List of variables included in CONTINUITY_PARENTS

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
parent_application_number	Application Number of Parent	str17	%-17s
parent_filing_date	Filing Date of Parent Application	float	%td
continuation_type	Type of Relationship Between Parent and Child Applications	str3	%-3s

Table C-2: List of variables included in CONTINUITY_CHILDREN

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
child_application_number	Application Number of Child	str17	%-17s
child_filing_date	Filing Date of Child Application	float	%td
continuation_type	Type of Relationship Between Parent and Child Applications	str3	%-3s

Table C-3: Counts of continuations by continuation type, CONTINUITY_PARENTS dataset

Value	Description	Frequency	Percent
PRO	Claims the Benefit of a Provisional Application	2,002,590	32.86
CON	Continuation	1,689,776	27.72
NST	National Stage Entry	938,002	15.39
CIP	Continuation in Part	794,673	13.04
DIV	Divisional Continuation	617,963	10.14
REI	Re-Issue	23,836	0.39
REX	Re-Examination	15,402	0.25
?	No Data	12,494	0.2
SUB	Substitute Application	130	0
SER	Supplemental Examination	53	0
RIC	Unknown	1	0
	Total	6,094,920	100.00

Table C-4: Counts of continuations by continuation type, CONTINUITY_CHILDREN dataset

Value	Description	Frequency	Percent
PRO	Claims the Benefit of a Provisional Application	2,064,484	39.33
CON	Continuation	1,601,690	30.51
CIP	Continuation in Part	808,794	15.41
DIV	Divisional Continuation	620,909	11.83
NST	National Stage Entry	101,390	1.93
REI	Re-Issue	24,202	0.46
REX	Re-Examination	15,434	0.29
?	No Data	12,509	0.24
SUB	Substitute Application	108	0
SER	Supplemental Examination	53	0
RIC	Unknown	1	0
	Total	5,249,574	100.00

Table C-5: Continuity data for Application 10/000,240

Panel: CONTINUITY_PARENTS

application_number	parent_application_number	parent_filing_date	continuation_type
10000240	9405294	23sep1999	CON
10000240	9837917	19apr2001	CON

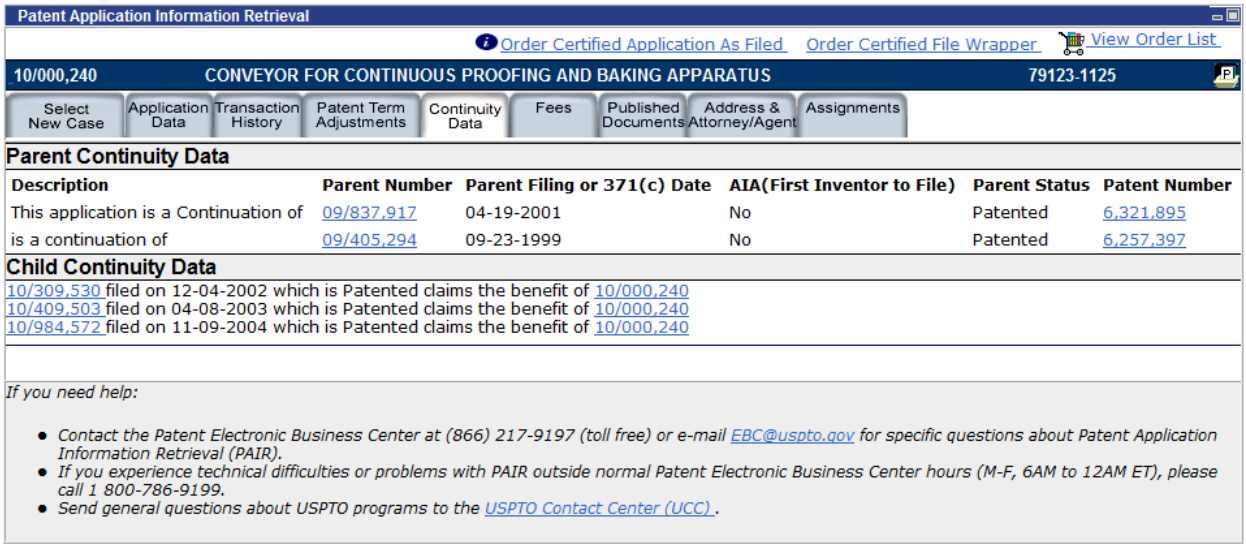
Panel: CONTINUITY_CHILDREN

application_number	child_application_number	child_filing_date	continuation_type
10000240	10409503	08apr2003	CON
10000240	10309530	04dec2002	CON
10000240	10984572	09nov2004	CON

Table C-6: Comparing the distribution of the *continuation_type* variable across datasets after removing duplicates

		Frequency in CONTINUITY_...	
Value	Description	PARENTS	CHILDREN
PRO	Claims the Benefit of a Provisional Application	2,002,590	2,022,356
CON	Continuation	1,689,775	1,595,906
NST	National Stage Entry	938,002	101,305
CIP	Continuation in Part	794,672	780,477
DIV	Divisional Continuation	617,963	619,236
REI	Re-Issue	23,836	23,962
REX	Re-Examination	15,402	15,405
?	No Data	12,494	12,493
SUB	Substitute Application	130	108
SER	Supplemental Examination	53	53
RIC	Unknown	1	1
	Total	6,094,918	5,171,302

Figure C-1: The Continuity Data Tab for Application 10/000,240



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10/000,240 CONVEYOR FOR CONTINUOUS PROOFING AND BAKING APPARATUS 79123-1125

Select New Case | Application Data | Transaction History | Patent Term Adjustments | Continuity Data | Fees | Published Documents | Address & Attorney/Agent | Assignments

Parent Continuity Data

Description	Parent Number	Parent Filing or 371(c) Date	AIA(First Inventor to File)	Parent Status	Patent Number
This application is a Continuation of	09/837,917	04-19-2001	No	Patented	6,321,895
is a continuation of	09/405,294	09-23-1999	No	Patented	6,257,397

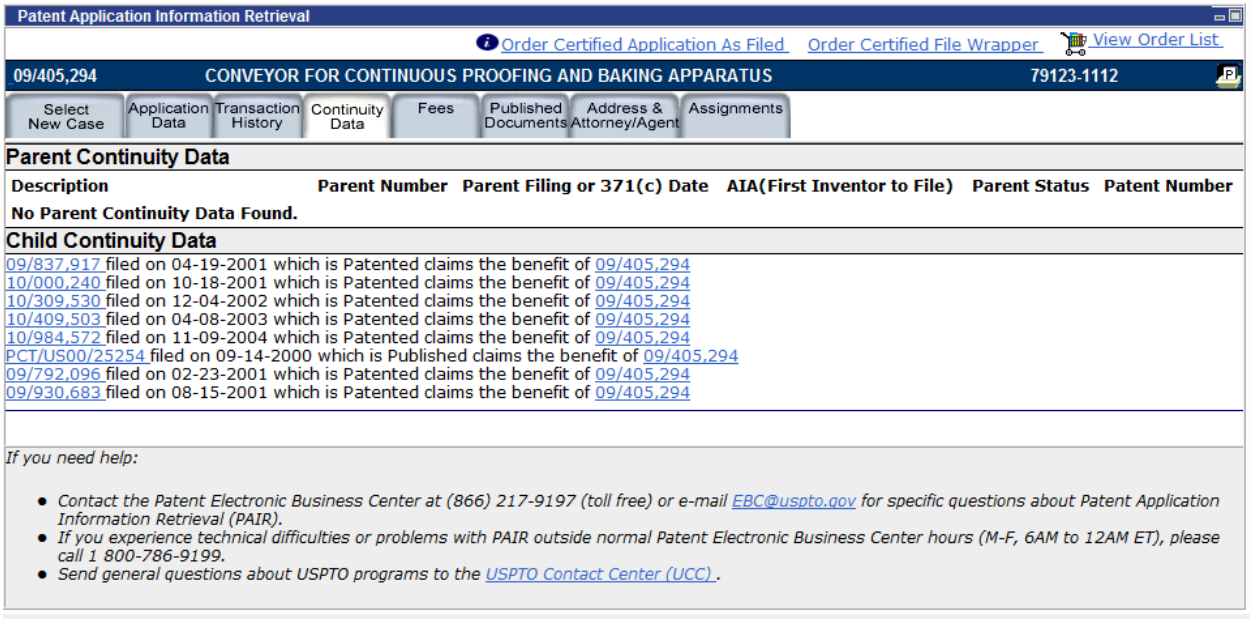
Child Continuity Data

10/309,530 filed on 12-04-2002 which is Patented claims the benefit of 10/000,240
10/409,503 filed on 04-08-2003 which is Patented claims the benefit of 10/000,240
10/984,572 filed on 11-09-2004 which is Patented claims the benefit of 10/000,240

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- *Send general questions about USPTO programs to the USPTO Contact Center (UCC) .*

Figure C-2: The Continuity Data Tab for Application 09/405,294



Patent Application Information Retrieval

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09/405,294 CONVEYOR FOR CONTINUOUS PROOFING AND BAKING APPARATUS 79123-1112

Select New Case | Application Data | Transaction History | Continuity Data | Fees | Published Documents | Address & Attorney/Agent | Assignments

Parent Continuity Data

Description	Parent Number	Parent Filing or 371(c) Date	AIA(First Inventor to File)	Parent Status	Patent Number
No Parent Continuity Data Found.					

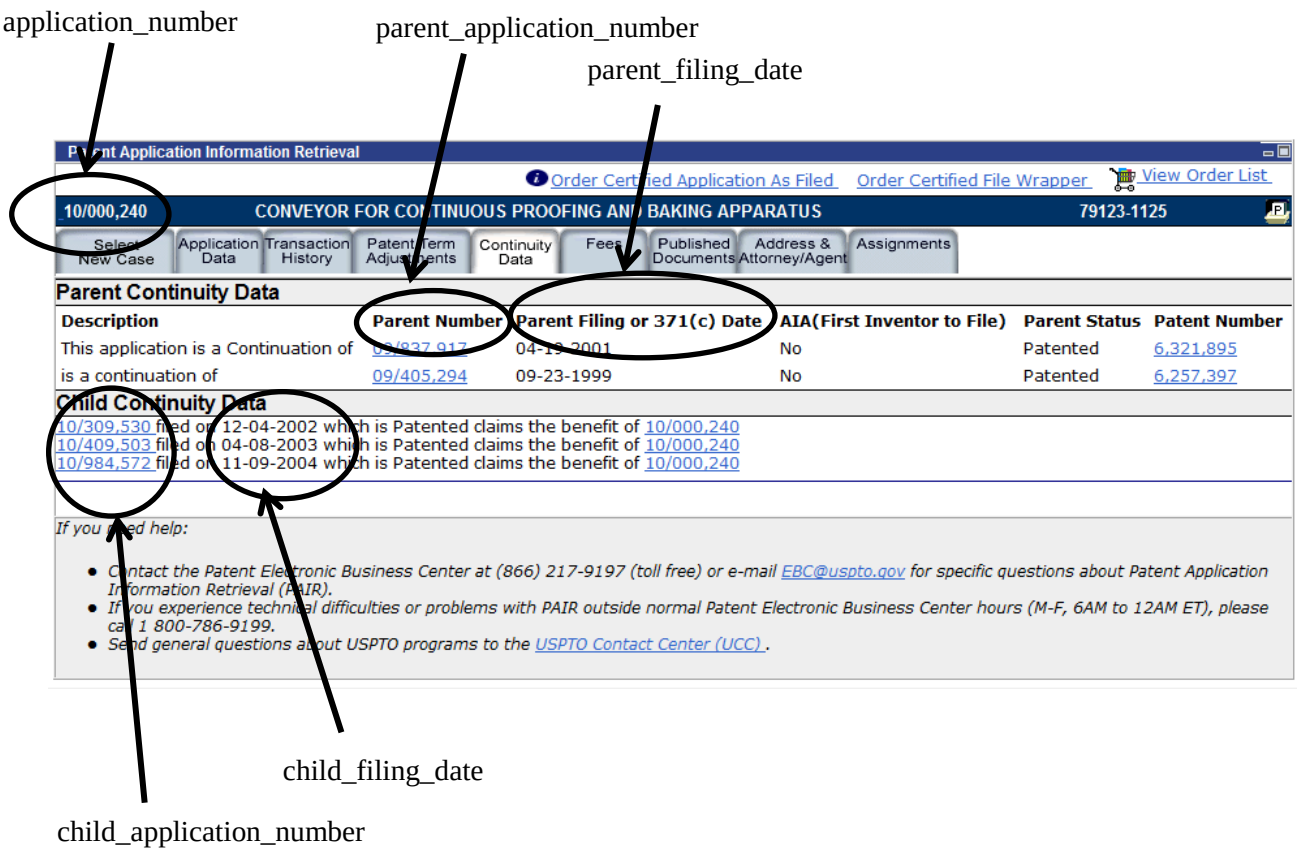
Child Continuity Data

09/837,917 filed on 04-19-2001 which is Patented claims the benefit of 09/405,294
10/000,240 filed on 10-18-2001 which is Patented claims the benefit of 09/405,294
10/309,530 filed on 12-04-2002 which is Patented claims the benefit of 09/405,294
10/409,503 filed on 04-08-2003 which is Patented claims the benefit of 09/405,294
10/984,572 filed on 11-09-2004 which is Patented claims the benefit of 09/405,294
PCT/US00/25254 filed on 09-14-2000 which is Published claims the benefit of 09/405,294
09/792,096 filed on 02-23-2001 which is Patented claims the benefit of 09/405,294
09/930,683 filed on 08-15-2001 which is Patented claims the benefit of 09/405,294

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Figure C-3: Mapping the variables to the Continuity Data Tab



Appendix D: Description of the Foreign Priority Data Release

D.1 Dataset Included in this Release

This data release consists of one dataset called FOREIGN_PRIORITY that provides all of the information that a user would be able to glean from the "Foreign Priority" tab on PTO's Public PAIR website. The information includes the application number of the subject application, an identifier for the non-US application from which the subject application is claiming priority, the filing date of the non-US application, and the country in which the non-US application was filed. There are 3,788,935 observations on 2,943,998 unique subject applications. An example of the "Foreign Priority" tab is presented in Figure D-1. It shows the "Foreign Priority" tab for application number 10/530,456 which was filed with the PTO in April of 2005. The application, which was never issued as a patent, claims priority from a previous filing with the Japanese Patent Office (JPO) from October of 2002. See Table D-1 for a list of the variables included in the FOREIGN_PRIORITY dataset.

D.2 Variables Included in the Dataset

The FOREIGN_PRIORITY dataset includes five variables. The variable *application_number* identifies the subject application which is claiming priority from a foreign application and can be used to link information contained in either of these two datasets back to the various other datasets that are included in the greater Public PAIR Research Files release.

The variable *foreign_parent_id* identifies the non-US application from which the subject application is claiming priority. The variable *foreign_parent_date* gives the date on which the non-US, parent application was originally filed in the foreign jurisdiction. It is formatted as a numeric variable which is set equal to the difference between the filing date and the first day of January 1960. For instance, if an application was received on 10 January 1960, then the date variable would be equal to 9. For dates prior to 1 January 1960, the date variable takes on negative values. In the Stata version of the data set, the %td display format is embedded, so that the dates display with the following format: ddmmmyyyy. For example, when *foreign_parent_date* is equal to 12,500, it displays in Stata as "23mar1994."

The variables *parent_country_code* and *parent_country* identify the jurisdiction in which the non-US, parent application was filed. The *parent_country_code* variable is coded using the ISO 3166 format.[72]

In Table D-2, we present the most common jurisdictions of original parent filings for non-US, parent applications. Not surprisingly, we find that countries such as Japan, Germany, South Korea, and the United Kingdom are the most common jurisdictions.

Curiously, the United States ranks ninth. Patent Cooperation Treaty (PCT) applications make up roughly 86 percent of the foreign parents coded with the United States as the jurisdiction of original filing. Such applications that do not designate the United States for possible national stage entry are treated as foreign applications, but they should not be coded as being US applications. It is likely that most of these cases amount to either coding errors or errors made by applicants when filing their applications. We have found cases where applicants have claimed foreign priority to regular US applications and where this has been corrected in the published patent, but not in Public PAIR. We have also found the following pattern when examining the Public PAIR website. There are many cases where a PCT filing claims the benefit of a previous US application and this appears in the Continuity data for the PCT filing. Then a new regular application is filed as a national stage entry of the PCT filing. The PCT filing appears in the Continuity data for the new regular application while the original US application appears in the foreign priority data for this new regular application. Technically, the original US application should appear as one of the parents of the new application; it should appear in CONTINUITY_PARENTS, not in FOREIGN_PRIORITY. We suggest that users proceed with caution when considering applications claiming foreign priority to the United States and make adjustments as necessary.

[72] For more information on ISO 3166 country codes see http://www.iso.org/iso/country_codes.htm.

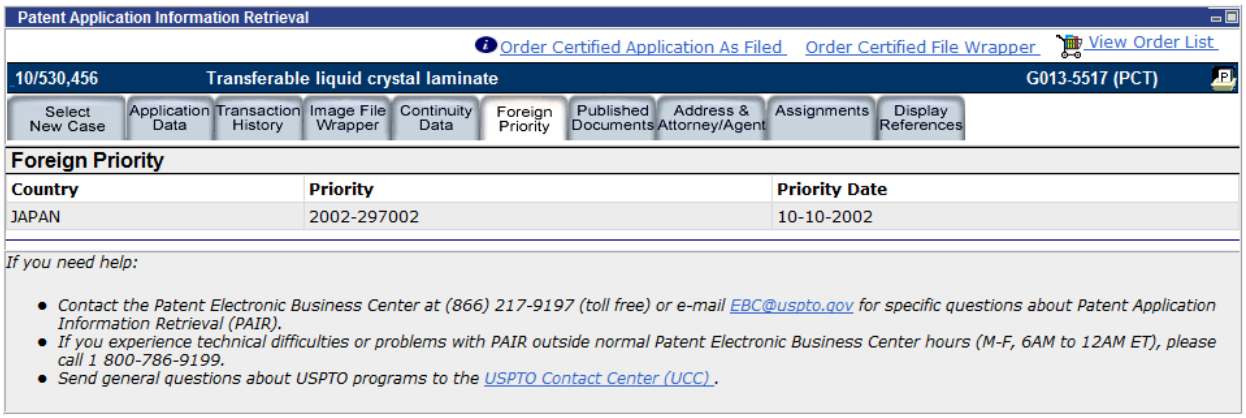
Table D-1: List of variables included in FOREIGN_PRIORITY

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
foreign_parent_id	Non-US parent identifier	str17	%-17s
foreign_parent_date	Original filing date of non-US parent	float	%td
parent_country_code	Country of non-US parent code (ISO 3166)	str4	%-2s
parent_country	Country of non-US parent	strL	%-20s

Table D-2: Most common jurisdictions of non-US parent applications

Code	Country/Jurisdiction	Number
JP	Japan	1,809,231
DE	Germany	437,755
KR	South Korea	280,413
GB	United Kingdom	217,684
EP	European Patent Office	171,104
FR	France	149,890
TW	Taiwan	96,928
CN	China	84,092
US	United States	67,545
IT	Italy	54,065
AU	Australia	50,597
SE	Sweden	43,608
CH	Switzerland	34,651
CA	Canada	27,787
NL	Netherlands	23,056

Figure D-1: The Foreign Priority Tab for Application 10/530,456



Appendix E: Description of the Patent Term Adjustment Data Release

E.1 Datasets Included in this Release

This data release consists of two datasets. The first, called PAT_TERM_ADJ, provides all of the information that a user would be able to glean from the "Patent Term Adjustment History" section of the "Patent Term Adjustments" tab. The information includes the application number of the subject application, the transaction history of the subject application complete with transaction dates, the length of any delays for which the PTO was responsible, and the lengths of any delays for which the applicant was responsible. The dataset includes 118,120,844 observations on 2,636,535 unique patent applications. See Table E-1 for a list of the variables included in the PAT_TERM_ADJ data set.

As an example, Figure E-1 shows the "Patent Term Adjustment" tab for application number **12/536,965** which was filed with the PTO in August of 2009. The top portion of the tab includes calculations for the total patent term adjustment. We mimic many of these calculations and release them in our second dataset, called PTA_SUMMARY. The bottom portion of the tab includes the history of delays in the prosecution of the application. These delays are used in the calculations in the top portion of the tab. Given the structure of the tab, there will usually be multiple entries in the data set for each application. One can interpret the data presented Figure E-1 as follows.

- It appears that the examiner was late in mailing out the restriction requirement on July 29, 2011, which caused 296 days of delay for which the PTO was responsible.
- Later in the prosecution there was a delay of 55 days on the part of the applicant regarding the completion of drawings.

To determine the patent term adjustment in the top portion of the tab, the delays for which the applicant is responsible are subtracted from the delays for which the PTO is responsible. Thus, the total patent term is adjusted (or extended) by 241 days (the 296 days of PTO delay minus the 55 days of applicant delay).

E.2 Variables Included in PAT_TERM_ADJ

The variables included in the PAT_TERM_ADJ dataset are meant to allow the user to mimic the "Patent Term Adjustment History" panel. The variable *application_number* identifies the subject application and can be used to link information from this dataset to the other datasets included in the Public PAIR Research Files data release.

The variable *pta_sequence_number* corresponds to the values in the "Number" column in the "Patent Term Adjustment History" panel. The variable *pta_event_date* provides the date on which each transaction occurred and corresponds to the values from the "Date" column in the "Patent Term Adjustment History" panel. This variable is formatted as a numeric variable which is set equal to the difference between the filing date and the first day of January 1960. For instance, if an application was received on 10 January 1960, then the date variable would be equal to 9. For dates prior to 1 January 1960, the date variable takes on negative values. In the Stata version of the data set, the %td display format is embedded, so that the dates display with the following format: ddmmmyyyy. For example, when *pta_event_date* is equal to 12,500, it displays in Stata as "23mar1994."

The variable *pta_event_code* corresponds to the "Contents Description" column. The descriptions of the event can be obtained by linking to the EVENT_CODES file, which provides a mapping of event codes to event descriptions.[73]

The next two variables describe any delays in the patent prosecution process related to each event. The first variable, *delay_duration*, indicates the length of any delay that occurred in getting to the event. A value of greater than zero indicates that there was a delay that was caused by either the PTO or the applicant. The next variable, *responsible_party*, indicates whether the PTO (*responsible_party*="PTO") or the applicant (*responsible_party*="APPL") was responsible for the delay. If the *delay_duration* variable has a positive value, but the *responsible_party* variable is blank, it typically signifies a portion of one type of a PTO delay that overlaps with another type of PTO delay. There are three basic types of PTO delays. [74]

- Type "A" Delays: These are the most common delays and typically include delays in the mailing of office actions. More technically they refer to PTO delays pursuant to 35 U.S.C. § 154(b)(1)(A)(i)-(iv) and the implementing regulations 37 CFR 1.702(a) & 37 CFR 1.703(a).
- Type "B" Delays: These delays are caused by the failure of a patent to issue within three years of the filing date of the application in the United States under section 111(a) or, in the case of an international application, the date of national stage entry under section 371.[75]
- Type "C" Delays: These delays are typically caused by interference proceedings, secrecy orders, and successful appeals before the PTAB (or BPAI). For instance,

[73] The EVENT_CODES file is described in more detail in Appendix B.
[74] See http://www.uspto.gov/patents-application-process/checking-application-status/pair-announcements/explanation-patent-term for more information. These types of delays are also described in more detail in Section 2.2.5 of the main report.
[75] Type "B" delays are typically captured under event code "PTA36M".

if an appeal before the PTAB takes two years and is successful, those two years of delay are awarded to the applicant as a patent term adjustment.

The portion of a Type-"A" delay that overlaps with either a Type-"B" or Type-"C" delay is not counted when calculating the patent term adjustment. That's why the *responsible_party* variable is left blank in this case. This assists in the calculation of the patent term adjustment for any application. The analyst simply needs to sum up the delays where *responsible_party* is equal to "PTO" and subtract the delays where *responsible_party* is equal to "APPL." In cases where this calculation yields a negative value, the patent term adjustment would be zero. The PTA_SUMMARY dataset includes the results of these calculations for each unique application in the PAT_TERM_ADJ dataset.

The final variable, *start_pta_sequence_number*, indicates which prior event generated a due date for the event that was eventually delayed. For instance, patent term adjustment will typically be triggered if a first action is not completed within 14 months of an application filing. Thus, if the first action is delayed, the *start_pta_sequence_number* variable will typically indicate that the prior event that generated the due date for the first action was the initial application filing. This is illustrated in Figure E-1, where the first action (the restriction requirement) was delayed. The sequence number in the "Start" column (0.5) is the original sequence number from the "Number" column for the application filing date.

E.3 Variables in PTA_SUMMARY

There are a total of 2,636,535 applications represented in the PTA_SUMMARY dataset. The variable *application_number* can be used to link the observations in this dataset to other datasets included in the Public PAIR data release. The other variables provide information that can be found in the right column of the top panel in Figure E-1. The information includes the total non-overlapping USPTO-caused delay and applicant-caused delay that occurred during the examination of the application in question. It also includes any final patent term adjustment that was added or subtracted by USPTO prior to patent issue.[76] Finally, the variable *patent_term_adjustment* provides the final adjustment to the term of the resulting patent.[77] It is calculated using the following formula:

[76] Sometimes these manual adjustments are made after patent issue in response to a petition from the patent holder.

[77] The user should note that in some extreme cases, very large patent term adjustments are calculated. In most of these cases, the mis-calculation is due to a data error. For examples, go to the online Public PAIR portal and search for the following application numbers: 11/324,864; 12/130,335; 12/720,816; or 12/593,880. In each case, a problem with the transaction date has triggered a very large negative value in the applicant delay

(F1) *patent_term_adjustment = nonoverlap_pto_delay + pto_manual_adjustment – applicant_delay*

The variable *patent_term_adjustment* is set equal to zero if either of the following is true.

- The result of equation (F1) is less than zero.
- The application in question was filed prior to June 8, 1995.[78]

column. The odd result can be found in the top panel of the "Patent Term Adjustments" tab in each case. One possible fix for this problem would be to re-calculate the *applicant_delay* variable using only positive values of *delay_duration* where *responsible_party* is equal to "APPL."

[78] Patent term adjustments are not applied to applications filed prior to June 8, 1995, as resulting patents have a term of 17 years from issue rather than of 20 years from filing.

Table E-1: List of Variables Included in PAT_TERM_ADJ

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
pta_sequence_number	The sequence number for the prosecution event	float	%9.0g
pta_event_date	The date of the prosecution event	float	%td
pta_event_code	Code identifying the type of prosecution event	str8	%-8s
delay_duration	Length (in days) of the delay in prosecution	int	%8.0f
responsible_party	The party (PTO or applicant) responsible for the delay in prosecution	str4	%-4s
start_pta_sequence_number	Identifier for the event that triggered the due date for delayed event	float	%9.0g

Table E-2: List of Variables Included in PTA_SUMMARY

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
nonoverlap_pto_delay	Total PTO caused delays of types A, B, or C that do not overlap	double	%9.0g
pto_manual_adjustment	Adjustments to patent term made prior to issue	double	%9.0g
applicant_delay	Total applicant caused delay	double	%9.0g
patent_term_adjustment	Total patent term adjustment	float	%9.0g

Figure E-1: "Patent Term Adjustments" Tab for Application Number 12/536,965

Patent Application Information Retrieval

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12/536,965 PROCESS FOR PRODUCING A RAIL AND POST FENCE SYSTEM BRI321-00/06255A

Select New Case | Application Data | Transaction History | Image File Wrapper | Patent Term Adjustments | Continuity Data | Fees | Published Documents | Address & Attorney/Agent | Supplemental Content | Assignments | Display References

Patent Term Adjustment

Filing or 371(c) Date:	08-06-2009	Overlapping Days Between {A and B} or {A and C}:	0
Issue Date of Patent:	11-15-2011	Non-Overlapping USPTO Delays:	296
A Delays:	296	PTO Manual Adjustments:	0
B Delays:	0	Applicant Delays:	55
C Delays:	0	Total PTA Adjustments:	241

Patent Term Adjustment History — Explanation Of Calculations

Number	Date	Contents Description	PTO(Days)	APPL(Days)	Start
49.5	11-15-2011	PTA 36 Months	0		0.5
49	11-15-2011	Patent Issue Date Used in PTA Calculation			0
48	10-17-2011	Export to Final Data Capture			0
47	10-14-2011	Dispatch to FDC			0
46	10-14-2011	Application Is Considered Ready for Issue			0
45	09-22-2011	Workflow - Drawings Finished		55	0
44	09-22-2011	Issue Fee Payment Verified			0
43	09-22-2011	Finished Initial Data Capture			0
42	09-22-2011	Issue Fee Payment Received			0
38	09-13-2011	Mail Notice of Allowance			0
37	09-09-2011	Office Action Review			0
36	09-09-2011	Office Action Review			0
35	09-09-2011	Issue Revision Completed			0
34	09-09-2011	Document Verification			0
33	09-09-2011	Notice of Allowance Data Verification Completed			0
32	09-09-2011	Case Docketed to Examiner in GAU			0
31	08-26-2011	Examiner's Amendment Communication			0
30	08-26-2011	Allowability Notice			0
25	03-22-2010	Information Disclosure Statement considered			0
24	01-04-2010	Information Disclosure Statement considered			0
23	08-23-2011	Case Docketed to Examiner in GAU			0
22	08-18-2011	Date Forwarded to Examiner			0
21	08-09-2011	Response to Election / Restriction Filed			0
20	07-29-2011	Electronic Review			0
19	07-29-2011	Email Notification			0
18	07-29-2011	Mail Restriction Requirement	296		0.5
17	07-27-2011	Office Action Review			0
16	07-25-2011	Restriction/Election Requirement			0
12	03-22-2010	Electronic Information Disclosure Statement			0
11	03-30-2010	Case Docketed to Examiner in GAU			0
10	03-22-2010	Information Disclosure Statement (IDS) Filed			0
9	01-04-2010	Electronic Information Disclosure Statement			0
8	01-04-2010	Information Disclosure Statement (IDS) Filed			0
7	09-01-2009	Application Dispatched from OIPE			0
6	08-21-2009	Sent to Classification Contractor			0
5	08-21-2009	Filing Receipt			0
4	08-07-2009	Cleared by OIPE CSR			0
3	08-06-2009	IFW Scan & PACR Auto Security Review			0
2	08-06-2009	PGPubs nonPub Request			0
1	08-06-2009	Initial Exam Team nn			0
0.5	08-06-2009	Filing date			0

Appendix F: Description of the Address and Attorney/Agent Data Release

F.1 Datasets Included in this Release

This data release consists of one dataset that provides the information that an analyst would be able to glean from the top panel of the "Address & Attorney/Agent" tab on PTO's Public PAIR website. An example of the "Address & Attorney/Agent" tab is presented in Figure F-1. Note that the tab is broken out into two panels. The top panel presents information on the latest correspondence address for the application along with the customer number. The bottom panel presents information on the attorneys and patent agents who have been granted power of attorney with regard to the subject application. The information includes each attorney's or agent's name and registration and telephone numbers. At this time we are unable to provide the data from the bottom panel, but will include these data in our 2016 release.

The data set that we have included is named CORRESPONDENCE_ADDRESS and it contains information from the top panel. It includes 8,719,698 observations covering 8,714,076 unique patent applications.

F.2 Variables Included in CORRESPONDENCE_ADDRESS

The CORRESPONDENCE_ADDRESS dataset contains 12 variables, as illustrated in Table F-1. The variable *application_number* can be used to link information from the CORRESPONDENCE_ADDRESS dataset to other datasets included in the Public PAIR data release. A handful of the applications included in this dataset have multiple observations, but these account for fewer than 5,500 of the 8,714,076 applications present. The rest of the variables are longer string variables and are fairly self-explanatory. The name of the entity with which USPTO is meant to correspond is given up to two lines of text. In most, but not all, cases the entity is a law firm or the legal department of a commercial enterprise. The next two variables – *correspondence_street_line_1* and *correspondence_street_line_2* – describe the street address of the correspondent. The *correspondence_city* and *correspondence_postal_code* variables are also self-explanatory.

Determining the location (country or U.S. state) of each correspondence address can be done using the *correspondence_country_code* and *correspondence_region_code* variables. The *correspondence_country_code* variable is coded using the ISO 3166

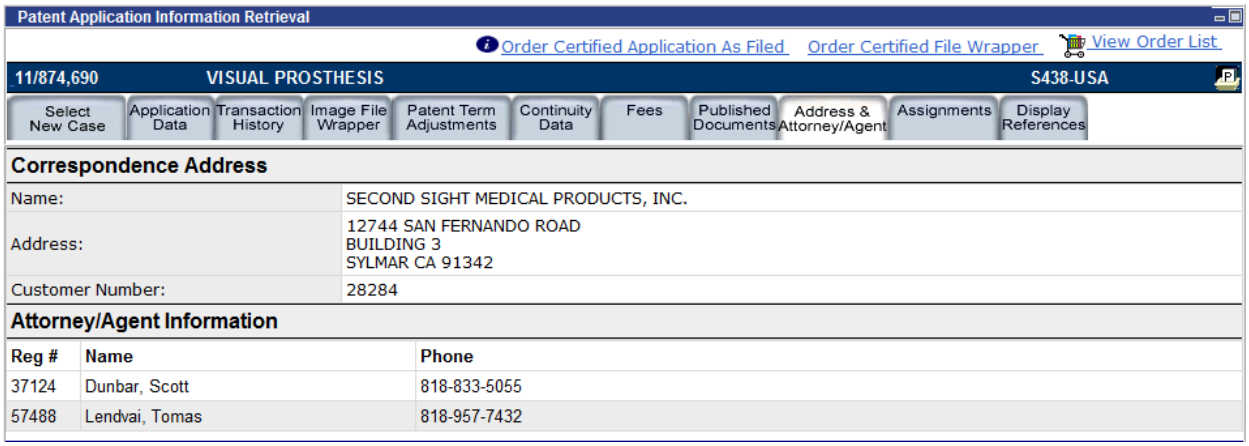
format.[79] We also include a variable *correspondence_country_name*, which can also be used to decipher the country codes. For US and Canadian addresses, the *correspondence_region_code* variable can be used to determine state or province. States and Canadian provinces are coded using standard US Postal Service 2-digit abbreviations. The final variable is *customer_number*, which can be used to uniquely identify the correspondent. This variable has a valid value for nearly 5.6 million of the 8.7 million observations in the CORRESPONDENCE_ADDRESS dataset.

[79] For more information on ISO 3166 country codes see http://www.iso.org/iso/country_codes.htm.

Table F-1: List of Variables Included in CORRESPONDENCE_ADDRESS

Variable Name	Description	Type	Formatting
application_number	Application Number	str14	%-14s
correspondence_name_line_1	Entity Name Part 1	strL	%-20s
correspondence_name_line_2	Entity Name Part 2	strL	%-20s
correspondence_street_line_1	Street address Part 1	strL	%-20s
correspondence_street_line_2	Street address Part 2	strL	%-20s
correspondence_city	Name of city	strL	%-20s
correspondence_postal_code	Postal code	str19	%-19s
correspondence_region_code	Region (State)	str4	%-3s
correspondence_country_code	Country code (ISO 3166)	str2	%-2s
correspondence_country_name	Country name	strL	%-20s
customer_number	Customer number	str6	%-6s

Figure F-1: The Address and Attorney/Agent Tab for Application 11/874,690



Patent Application Information Retrieval

Order Certified Application As Filed | Order Certified File Wrapper | View Order List

11/874,690 VISUAL PROSTHESIS S438-USA

Select New Case | Application Data | Transaction History | Image File Wrapper | Patent Term Adjustments | Continuity Data | Fees | Published Documents | Address & Attorney/Agent | Assignments | Display References

Correspondence Address

Name:	SECOND SIGHT MEDICAL PRODUCTS, INC.
Address:	12744 SAN FERNANDO ROAD BUILDING 3 SYLMAR CA 91342
Customer Number:	28284

Attorney/Agent Information

Reg #	Name	Phone
37124	Dunbar, Scott	818-833-5055
57488	Lendvai, Tomas	818-957-7432