經濟部

行政院所屬各機關因公出國人員出國報告書

（出國類別：進修、研習）

赴美國 USPTO 研習「生物科技專利保護計劃」及「e 網通系統建置規劃」

服 務 機 關：經濟部智慧財產局

出國人 職稱：副局長

出國人 姓名：蔡惠言（等七人）

派 赴 國 家：美國－Washington DC

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報告名稱:

赴美國USPTO研習「生物技術專利」及「e網通系統」(變更92年度科專培訓計畫)

主辦機關:

經濟部智慧財產局

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出國人員:

蔡惠言　經濟部智慧財產局　副局長室　副局長
康世申　經濟部智慧財產局　國際事務及綜合企劃組　組長
王美花　經濟部智慧財產局　商標權組　組長
童沈源　經濟部智慧財產局　專利一組　專利審查委員
鍾士偉　經濟部智慧財產局　TFT小組　科長
林聰仁　經濟部智慧財產局　TFT小組　分析師
陳文章　經濟部智慧財產局　TFT小組　國防訓儲專利助理

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關鍵詞: USPTO,生物技術,專利保護,專利審查,業務電子化,TFT-LCD,審查官訓練

內容摘要: 有鑑於美國之生技產業快速成長，近來歐洲專利局也開始針對生物科技專利審查重新檢視審查標準，期望能藉由鼓勵發明來達到提昇產業發展的效果，因此，爲符合國際之潮流且配合政府扶植生技產業之政策，本局自當本諸開放態度，積極投入生物科技專利審查之標準修訂，藉由此次美國之研習觀摩，能夠將生物科技專利之審查明確化及國際化，以鼓勵國內外生技業者在台灣投注更多的研發技術與人才培養，進而讓台灣的生物科技產業生根發展，提昇台灣生技產業之國際競爭力。此外，WIPO會員國將於2005年完成智慧財產權e化服務體系及基礎服務平台建置，而USPTO刻正進行紙本文件全面影像化之工作，前端之電子申請系統（EFS）也已推行兩年，藉由此次USPTO之研習，這些寶貴的經驗可以提供給本局作爲現正推行之「e網通計畫」參考，使本局所規劃之整體業務流程及電子資料交換能夠合乎國際趨勢，且系統開發建置過程中能夠減少試誤學習而達事半功倍之效果。

本文電子檔已上傳至出國報告資訊網

出國人員名單：

姓名	所屬機關	所屬組室	職稱
蔡惠言	經濟部智慧財產局	副局長室	副局長
王美花	經濟部智慧財產局	商標權組	組長
康世申	經濟部智慧財產局	國際事務及綜合企劃組	組長
童沈源	經濟部智慧財產局	專利一組	副組長
鍾士偉	經濟部智慧財產局	業務電子化專案小組	科長
林聰仁	經濟部智慧財產局	業務電子化專案小組	分析師
陳文章	經濟部智慧財產局	業務電子化專案小組	國防訓儲專利助理

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壹、目的

美國之生物科技產業執全球之牛耳，過去十年來，相關生物科技之公司數、人才數、營業收益以及研發費用皆呈現高度的成長，相較於全球其他國家，美國對於生物科技相關專利案件之審查，採取比較開放而寬鬆的限制，有鑑於美國之生技產業快速成長，近來歐洲專利局也開始針對生物科技專利審查重新檢視審查標準，期望能藉由鼓勵發明來達到提昇產業發展的效果，因此，為符合國際之潮流且配合政府扶植生技產業之政策，本局自當本諸開放態度，積極投入生物科技專利審查之標準修訂，冀望藉由此次美國之研習觀摩，能夠將生物科技專利之審查明確化及國際化，以鼓勵國內外生技業者在台灣投注更多的研發技術與人才培養，進而讓台灣的生物科技產業生根發展，提昇台灣生技產業之國際競爭力。

此外，WIPO 會員國將於 2005 年完成智慧財產權 e 化服務體系及基礎服務平台建置，而 USPTO 刻正進行紙本文件全面影像化之工作，前端之電子申請系統(EFS)也已推行兩年，冀望藉由此次 USPTO 之研習，這些寶貴的經驗可以提供給本局作為現正推行之「e 網通計畫」參考，使本局所規劃之整體業務流程及電子資料交換能夠合乎國際趨勢，且系統開發建置過程中能夠減少試誤學習而達事半功倍之效果。

貳、 過程

七月二十一日由蔡副局長帶領本局康組長世申、王組長美花、童副組長沈源、鍾科長士偉、林聰仁及陳文章等依既定行程，赴美國生物技術工業協會及美國第一大ＩＰ事務所（Finnegan, Henderson, Farabow, Garrett & Dunner, LLP）進行研習。而七月二十二日至七月二十五日期間，在美國專利商標局（USPTO）針對生物科技專利保護計劃及e網通系統建置規劃等議題進行研習。

一、七月二十一日上午先至美國生物技術工業協會，協會由公共關係部經理 Caroline Ruggiseri、科技政策及生物倫理處長 Sara Radcliffe、及智慧財產權 Lila Feisee 處長出席，並由 Feisee 處長致詞及主講，重點包括美國現有 1500 家生技公司（該協會之會員有 1000 家，分佈於 50 州及 33 個國家），該等公司一年收入約 342 億美金研發費用佔二分之一，且特別重視研發及專利之申請，美市場現有約 150 種生技產品，受惠人口三億二千五百餘萬人，未來三到五年，將另增加 370 種。

雙方針對生物技術產業發展之詢答重點如下：

- 美國生物技術申請專利主要係於歐洲、加拿大、日本、中國大陸及台灣。
- 美國生物技術申請專利的核准約需三至四年，申請至產品上市約

需十至十二年之間，其中包括臨床實驗之時間，所以實質專利權利期間約八年，惟其可提出專利期間之延長，一般醫藥品為二至五年，另為鼓勵罕見疾病用藥（Orphan Drug）之研發，特容許其延長二至七年。

- 美國對於可准予專利之標的的確較其他國家來得寬鬆，這也是促使美國生物產業蓬勃發展之主要誘因之一。
- 美國由於 1997 年通過食品藥物現代化法案讓學名藥的申請時程縮短，減少不必要或重複之臨床試驗。
- 美國生物技術工業協會未來可能在台北設立辦事處，屆時將依會員之需求，尋求在台專利授權之可行性。
- 美國生物技術工業協會及會員對 IP 政策皆會提出建議，例如對生物多樣性公約（CBD）及 TRIPS 關係一事，即曾就發明單一性提出具體見解，提及其會員皆不持肯定態度，並提及美國對專利有些看法本來就不同於其他國家。
- 美國生物技術工業協會在良好的工作環境及優渥待遇下，人才從 USTPO、製藥廠、國家衛生署（NIH）轉入。
- 美國生物技術近五年來專利申請從 1997 年約一萬七千件後逐年成長，至 2001 年已有三萬七千件。
- 美國生物技術工業協會同意將期刊、研討會、研發之資訊適時提

供本局專利審查參考。

二、七月二十一日下午至美國 FINNEGAN　IP 事務所研習，該所業務重點及雙方討論意見如下：

- 該事務所是美國專業之智慧財產權事務所，並未經營其他法律事務之代理工作，上年度在美國專利的申請量排行第一，達 2505 件。
- 該事務所的管理，採取專業分工的管理及訓練制度，定期進行人員的考核與培訓工作。
- 該事務所業於台北籌設分所，預計本年度十月份成立，蔡副局長藉此機會邀請 Henderson 氏創辦人能於蒞台期間就專利申請訴訟實務經驗赴局對專利審查人員發表演說，也獲得 Henderson 氏欣表同意。
- 美方近年來就商業方法申請似有趨緩情勢，其降低的主要原因在於受到網路經濟的泡沫化及申請人就此一新型態之專利搶先申請的心態趨緩所致，同時因 USPTO 就此一專利的審查需經較長的覆核程序（為一般申請案的兩倍）也導致申請意願的降低。
- 美國代理人登記達五萬餘人次，每年 USPTO 均會就申請人及業界的意見反映對代理人進行相關的評鑑。
- 該所為 USPTO 辦理電子化申請之先期試行的合作對象之一，但

在試行兩年期間使用電子方式進行申請的案件數量並不多，主要的原因在於 USPTO 所提供的電子申請程式在使用上仍存在一定的困難，且一般申請人較不習慣以電子方式申請，而經濟規模較小之中小企業、申請人仍在觀望系統發展的情形，故導致 USPTO 線上申請率有偏低之現象。

- 為了更進一步瞭解其電子申請作業的處理情形，E, Robert Yoches 帶領本團觀摩該所電子申請作業部門，該部門主辦人 Carnetta N. Benjamin 表示現行 PASAT 的操作介面仍不夠親和，且操作上仍不夠穩定，在編輯專利說明書貼入大量影像檔時會有當機的情形，部分文件（先前技術說明、優先權證明文件）受限於法律規定目前仍無法以網路方式遞送，所以電子申請仍無法普及，但電子申請最大的優點在於可以線上送件幾分鐘內即時取得申請案號，遠較人工親自送件快速便利。
- Carnetta N. Benjamin 亦表示 USPTO 並不接受以 MS-Word 的.doc 檔案格式進行電子申請，USPTO 所提供之 PASAT 僅為奠基於 MS-Word 元件所開發之專屬專利說明書編輯軟體，雖有類似 Word 的操作介面，但使用自定之檔案格式，代理人進行電子申請必須將申請人的電子檔文件依段落逐一轉貼至 PASAT 的指定位置後送出。其電子申請方式與本局 TFT 小組分析結果完全相同，我代

理人認為美國電子申請得直接以 Word 檔案格式進行送件與實際情況實有出入。

三、七月二十二日至七月二十五日期間赴美國專利商標局（USPTO）進行研習，共有七大議題，分別列敘於下。

（一） 專利訓練計畫研習（專利學院主任 David Lacey）

- 美國專利商標局(USPTO)現有人員 6500 人，專利審查官共 3500 人（40%之審查官年資低於五年），今年新進人員有 300 人，明年預計 750 人，未來三年平均每年增加 700 人，因此對新進人員的訓練非常重視。
- 專利學院工作人員共 7 人，除了安排訓練課程之外，最重要及最辛苦的工作是修改訓練教材，例如要將最新的案例以及新的技術分門別類納入教材中，所以專利學院之工作人員都是由資深審查官擔任。部分講師則會邀請退休審查官擔任，但若執行代理人業務者，則不在邀請的範圍內，另外，資深審查官欲擔任講師必須接受教學訓練。
- 新進人員第一年必須經過 180 至 200 個小時的訓練之後，由資深審查官採一對一方式實際監督助理審案，新進人員第一至第二年之間，所有的審查案件必須經過資深審查官的複核，俟其逐漸熟悉審查要領，復核工作逐步放寬，平均約四至六年始能完全獨立

審查。另外每年開辦中級及資深審查官持續訓練計畫，就各技術領域之特殊議題給予訓練，此課程亦開放給各界參與，另外審查官也可以至法學院上課，但 USPTO 不補助經費。

（二） 雙邊人才交流計劃研習（本議題由次長兼任局長 James Rogan 先生親自主持）

- Rogan 次長提到在擔任國會議員期間，對台灣非常支持（還留有當時與先總統蔣公往來的書信），其提到 USPTO 目前面臨電子化的轉換過程，也同樣產生困擾，希望能夠互相作經驗交流。
- 我國申請人向美國提出之申請及核准去年為第四位（含美國在內），而美國申請人向我國之申請案件量一年高達八千多件（其中 90 %是發明案），因此提升我國品質對雙方均能互蒙其利，就如何人才交流部分，建議：
  - 我國審查官一年能夠派三到四人參加 USPTO 中級審查官以上的訓練二週。
  - 美國審查官一年派二至三人到我國來講授約一週之審查實務課程。
  - 各階段專利商標審查官訓練課程及教材能提供給我們做為參考，日後有更新的部分也能隨時提供給我們。
  - 美國專利局有透過視訊的方式代訓其他國家的審查官，希望

我國亦能比照辦理。

- 負責國際關係的 Elaine Wu 小姐表示，美國專利局一年舉辦兩次訪問學者的計劃，我國也有多人參與，至於外國審查官參與其內部審查官訓練則未曾有之，由於 USPTO 經費亦相當有限，因此是否可行希望我國能正式備函請求，並排出訓練項目之優先順序，以便該局做決定之依據。

（三） 商標審查官訓練計劃研習

- 商標訓練約為十二週，第一、二週作基本的實質及程序訓練，第三週在資深審查團隊的監督下，以實際案件作測試；第四、五週為進階實體及程序訓練；第六、七、八週為實際案件測試；第九、十、十一週為在 supervisor 的監督下，在法律辦公室進行實際案件審查，第十六週之後可取得 supervisor 的認可後，得到完全的授權，在一年內必須針對新進商標審查官是否適任做出決定（因為聯邦法令之規定緣故，一年後再解僱不適任人員將發生困難）。
- 目前共有 253 位商標審查官，商標審查官必須具有律師資格者，去年(2002 年)申請案件有 26 萬件；商標審查共分成 12 個部門，每個部門約 20 人，商標審查官之薪水從 7 級開始（較專利審查官高一級），資深可達 15 級。
- 若為爭議案由三位資深審查官共同審查（此點與我國相同）。

- 關於立體商標，如何與新式樣作區別？USPTO 認為功能是一個可參考的依據，審查立體商標時，需同時檢索新式樣之資料庫。
- 造型包裝商標可申請註冊，有可能是以平面或立體的形式申請。
- USPTO 對於著名商標並無定義，亦無著名商標之專屬資料庫（無特別區分是否為著名商標）。
- 單一之顏色商標而獲准註冊的案例很少，如果商標包含顏色及形狀或文字之組合，則應看做一個整體之設計，不再是所謂的顏色商標。
- 商標授權不用向 USPTO 辦理登記，如果雙方對授權有爭議，由當事人之間自行協調。商標延展註冊必須填具申請書辦理申請。

（四） IPR 之執行研習

- USPTO 之 IPR 執行處處長 Robert Stoll 提到，對我國今年一到三月的執行報告，表示做得非常好，值得肯定；但是整體的盜版查禁執行情形，仍有改善的空間。因此，考慮在今（92）年十至十一月間到國內辦理台美智慧財產權培訓班或研討會。
- USPTO 表示，我國在執行上不能僅重視數據，應努力去查禁真正的不法集團，澳門就是辦了一兩個大案子而改變大家對其之形象。另外委任狀的問題又一再發生，而且不僅問題發生在法官及檢察官，甚至海關及警察，亦要求提出不適當之委任狀，使人對

各執法單位喪失信心。至於法律部分，我國有必要儘速針對立法不足的部分（如取消海關依職權查扣），應儘速作成解釋。

- 光碟管理條例部分，是快速有效的行政措施，我國不可降低其執行力。
- 康組長及駐美經濟組賴秘書銘賢均強烈表達，我國已相當盡力執行 IPR，績效亦有目共睹，美方應給予我國較多之掌聲，而非一味地加以責難，尤其美方對於較我國執行不力之國家，均未給予如此嚴厲之責備，此對我國相當不公平。
- USPTO 表示，其亦有向其他國家提出改善執行之要求，甚至在美國國內最近權利人亦向八位民眾提出侵權訴訟，以強調其保護智慧財產權之決心。
- 我方最後回應下列三點：
  - 有關立即著手修正著作權法以回應美方立場一節，本局曾再三評估，未來於立法院審議法案，恐無法保證比現況更佳。
  - 有關加強執行查禁仿冒部分，據悉我駐美程代表已有所指示，並已將訊息傳達國內相關單位參辦。
  - 兩國經貿人員應加強溝通互訪，始為最佳處理方式。
- 以上三點亦獲在場之 Robert Stoll 處長認同。

（五） USPTO 數位化過程研習

- RTIS 公司為一長期與美國 USPTO 合作之廠商，其合作關係可溯及自 1970 年迄今已達 33 年，主要負責將專利案件紙本資料轉換為 XML 格式電子檔案，提供發行電子公報、公告出版服務及檢索資料庫之應用。
- 研習過程中並赴現場實際了解線上作業流程：
  - Patent Editing：人工檢核 USPTO 送抵之專利紙本文件是否齊備或缺漏，若有缺漏及錯誤發現後填寫檢核單送回 USPTO 更正補齊。
  - Document Scanning：使用商用掃瞄套裝軟體，每週掃瞄 300,000 頁紙本文件。
  - OCR：使用商用套裝 OCR 軟體對掃瞄所得電子文件檔自動化轉換為文字檔（Text File），每週 300000 頁，正確率 99.3%。
  - Text Clean-up：為符合 USPTO 正確率須達 99.975%之驗收標準，使用人工進行文字複驗。
  - Drawing Clean-up：使用自行開發之圖片擷取軟體，每週掃瞄 5000 筆圖片資料。
  - Chemistry Capture：使用商用軟體（Chemical Draw），每週重新製作 10000 筆化學結構式資料。
  - Tables Capture：使用商用軟體製作符合 XML 之資料。

- Equations Capture：使用商用軟體（Mathematical），每週製作4000 筆之數學方程式資料。
- Bio-Sequence Capture：依 USPTO 給予之 ST.25 格式，使用軟體自動轉換為生物序列式顯示。
- Quality Inspection：在前敘各階段進行品質控管服務。

➢ RTIS 交付 USPTO 之產品包括：

- 以 XML 格式儲存之早期公開專利申請書資料檔
- 以影像檔格式儲存之早期公開專利申請書資料檔
- 電子公報
- 已核准公開之專利案件印刷紙本製作
- 以 XML 格式儲存之已核准專利申請書資料檔
- 以影像檔格式儲存之已核准專利申請書資料檔

➢ 以上均透過其精確之分文、標示、檢核與流程品質之管理措施，其產品之質量皆能達到 USPTO 嚴格的要求標準。

➢ 於座談討論相關文件數位化及 e-Filing 議題時，與會之 IBM 公司代表 Stephen K Boyer 先生曾以申請人的觀點表示，USPTO 推行 e-Filing 必須先克服下列問題，方可提升申請人與代理人之使用意願：

- USPTO 應調整現行規費收費標準，降低電子申請案件之規

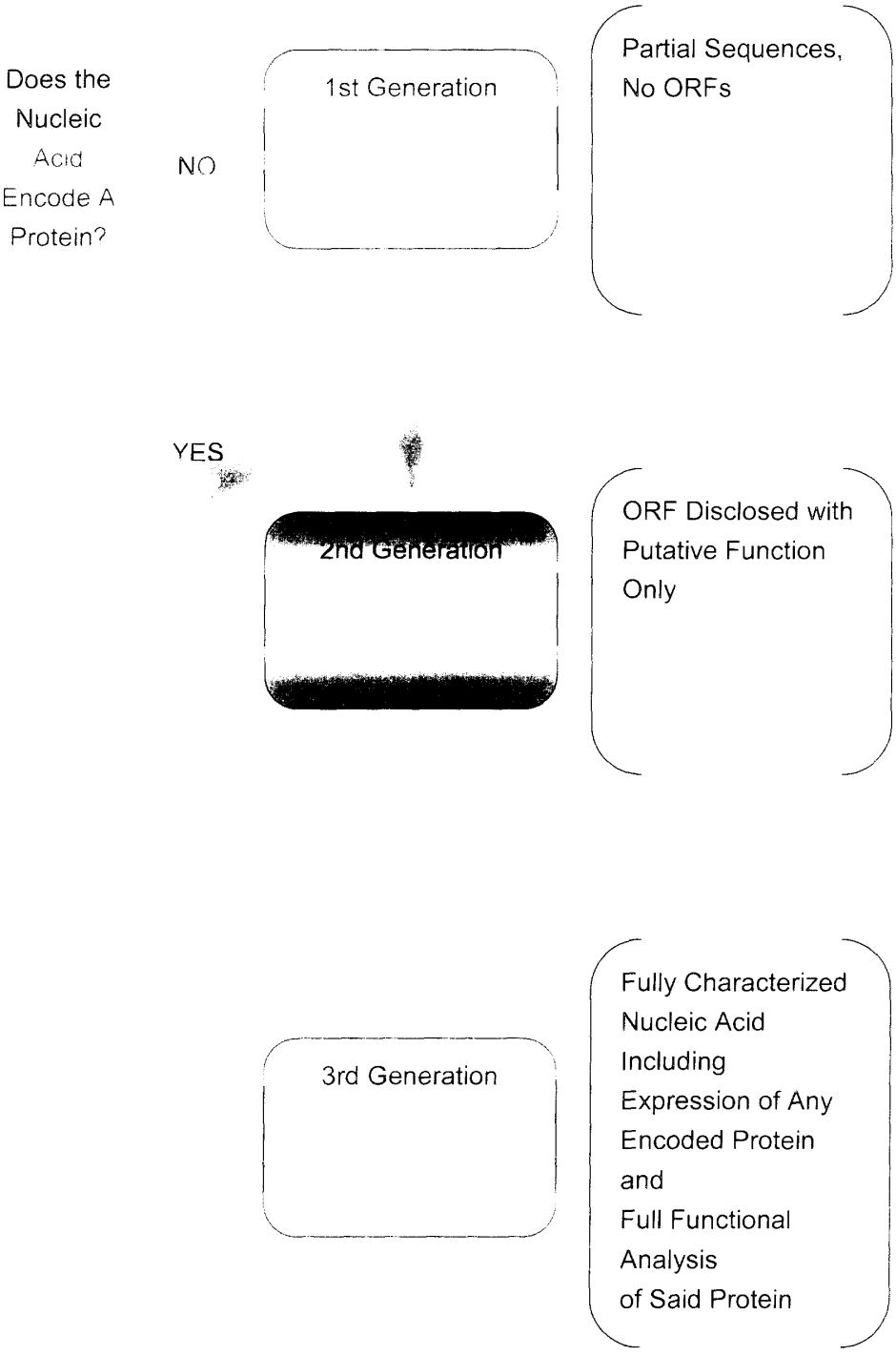
費，以提高民眾使用電子申請之誘因。

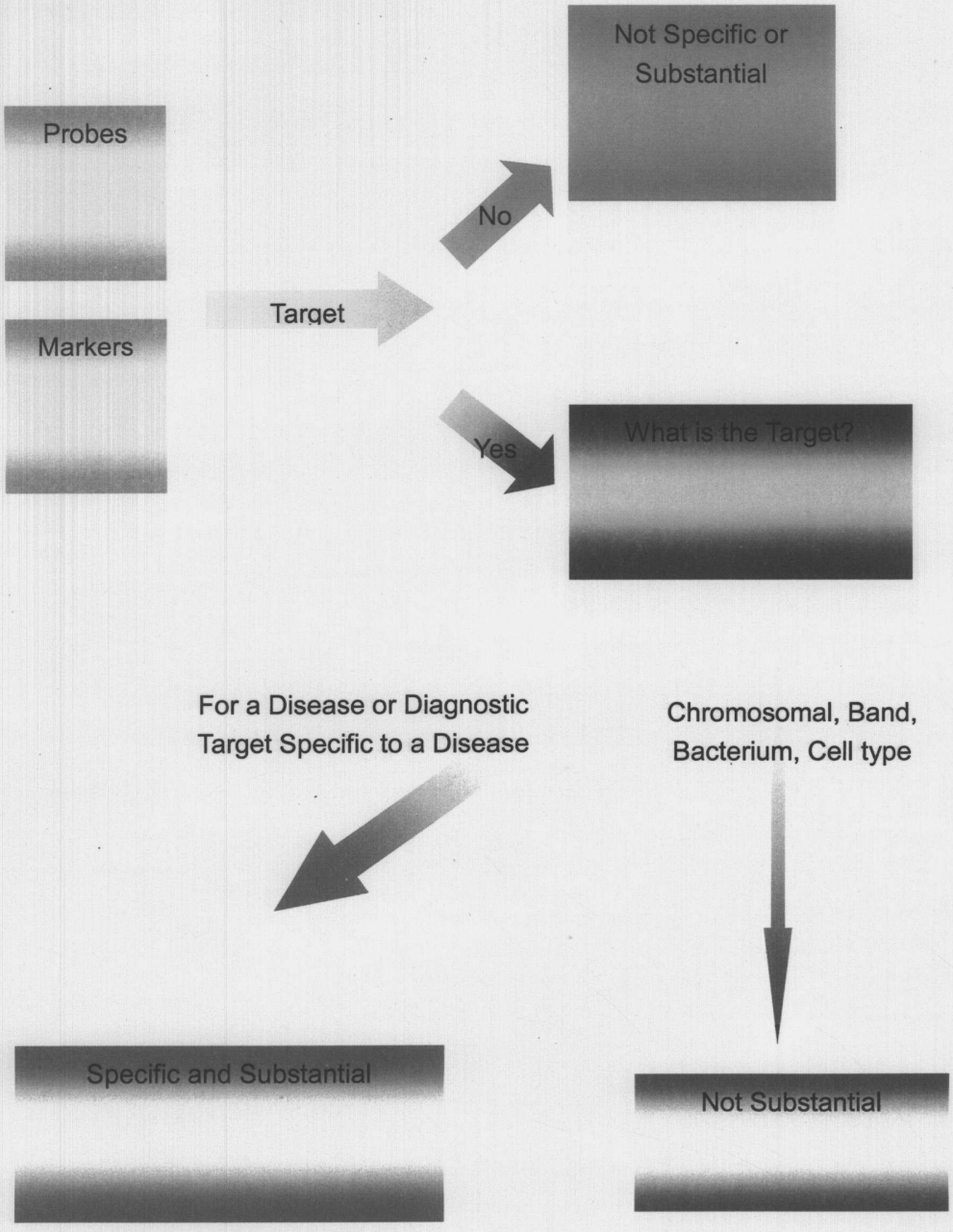
- 代理人往往有自己特殊的需求，USPTO 需要更進一步瞭解方可提供適切之服務，如 IBM 需要的不單是前端申請書與送件作業的電子化，更希望 USPTO 對申請人之通知、處分與聯絡能同樣以電子化方式進行，方能提升使用之意願。
- 要促成 USPTO 與申請人、代理人間的溝通聯絡全面電子化，必須先就電子書信往來制訂標準（XML）格式，以利資料交換。

（六） 生物技術專利審查研習（講師：Christina Chan）

➢ 生物技術審查部門代碼為 1600 技術中心，目前共有 400 位審查人員，分為六個工作組（Working Groups），下設 40 個技術小組（Art Unit，約相等於我國的「科」），每一個技術小組約 12 至 14 人，本技術領域得以技術小組或個人作為考核的依據，資深審查官必須實質覆核助理審查官之案件，此外還設有資深技術審查官部門， 負責個案品質控管之工作，以及品質確保部門，負責基準與訓練相關教材之編撰；審查官之績效除了量以外，品質應列入考量，一般高級審查官每 10 個小時需完成一個審定，薪資愈高，單一審定時間愈短，每月完成之審定數目視其薪資高低而定，差距頗大。

- 生物技術案件近年來大幅攀升，2003 年度即超過四萬件申請案，預計至 2005 年將超過五萬七千件，因此審查人力嚴重不足，由於預算尚未經國會通過，因此今年僅能晉用 15 人，明年以後每年預計晉用 170 人。
- 本技術領域之審查官素質相當高，多數具有博士或助理教授資歷（如免疫學技術小組，所有審查官均為博士）。
- 1999 年美國發明人保護法案規定 14–4–4–4–36 原則，亦即：申請案於提出申請後 14 個月內，USPTO 必須要作出核駁通知（First Action）；針對申請人提出之修正本，審查官必須在 4 個月內回覆；核准通知後必須要在 4 個月內決定是否給予專利權或放棄該專利；收到上訴決定後，必須要在 4 個月內作出審定；從申請到審結要在 36 個月內完成。倘逾越以上審理期限，於核准專利後，均應給予期間補償。惟生物技術部門因積案過多，事實上皆無法達到該項法令規定的期限。
- 生物技術專利的審查特別重視實用性、可據以實施性及書面描述之規定，思考之邏輯如流程圖所示。
- 生物技術專利申請案依技術內容揭露程度可區分為三個階段：1st generation、2nd generation、3rd generation。
- 能否給予專利，重點在於申請案是否針對特定明確之目標。

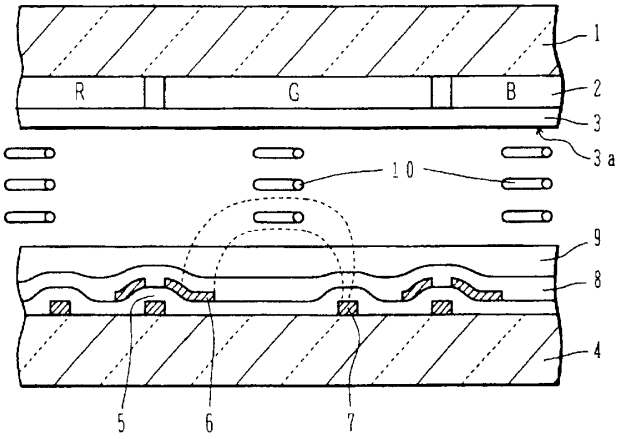

Does the Nucleic Acid Encode A Protein?
NO
1st Generation
Partial Sequences, No ORFs
YES
2nd Generation
ORF Disclosed with Putative Function Only
3rd Generation
Fully Characterized Nucleic Acid Including Expression of Any Encoded Protein and Full Functional Analysis of Said Protein


Not Specific or Substantial
Probes
No
Target
Markers
Yes
What is the Target?
For a Disease or Diagnostic Target Specific to a Disease
Chromosomal, Band, Bacterium, Cell type
Specific and Substantial
Not Substantial

（七） TFT-LCD 專利審查研習

- 今日顯像技術由於市場需求甚大，近年專利申請皆為上昇趨勢。自 1967 年普林斯頓大學 RCA 顯像技術專利問市後，1989 年韓國 Samsung、日本 Sharp 皆相繼投入，1994 年我工研院取得數件專利，如今技術發展重點在於液晶薄膜顯示器（TFT-LCD）及彈性可扭曲顯示器（electrophoretic）。
- 由於 TFT-LCD 為新興快速發展之技術領域，其審查重點在於申請專利範圍之分析、專有名詞之界定、欲解決之技術問題以及檢索的策略擬定。針對不斷推陳出新的專有名詞，每日由專人更新，放置局內網頁供審查官查詢使用。另外也會邀請相關之業界專家來局演講，近兩年已邀請 30 家業者至該部門作技術概況介紹，審查官已定期參加資訊展示協會（SID，Society of Information Display）。
- 美國現有 3 個技術小組（AU2673、2674、2675），共有 38 個審查委員，負責 LCD 之化學成分、LCD 及晶體結構、LCD 之電機驅動裝置。
- 目前較熱門的技術，如共平面控制技術（IPS，In-plane Switching）至 1995 年問世，到現在已經有 330 件結構專利（IPS Structure）；然而，在 IPS 驅動器的專利則至 1998 年才開始，目前共有 35 件

專利。



- IPS 專有名詞在結構組以及驅動組之間差距長達三年，在兩技術小組（AU）間，審查官對同一個專有名詞的認知因此產生差距，所以 LCD 審查專有名詞之及早瞭解極為重要。
- 此技術領域之檢索工具主要包括 EAST（Examiner Automated Search Tools）、WEST（Web-based Examiner Search Tools）、商業用檢索系統（CBD，Commercial Data Base）、非專利文獻檢索系統（NPL，Non-Patent Literature）、外國專利線上系統、網際網路等，除此之外，該技術領域還建置若干最新即時技術資料供委員檢索，畫面如附圖所示。

EAST - [Moyer_virtual.wsp:1]

File View Edit Tools Window Help

- Drafts
- Pending
- Active
  - L1: (371) 345/92.ccls.
  - L2: (349) in-plane adj switch$3
  - L3: (3459) ips or L2
  - L4: (13) L1 and L3
- Failed
- Saved
- Favorites
- Tagged (0)
- UDC
- Queue
- Trash

List | Browse | Queue | Clear

DBs USPAT | Plurals

Default operator: OR | Highlight all hit terms initially

L1 and L3

BRS form | IS&R form | Image | Text | HTML

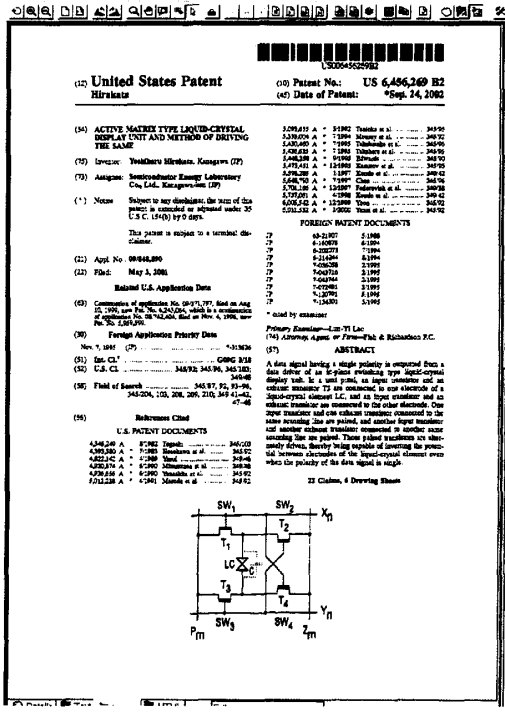
	Search Terms	Total	USPAT	US-PGPUB	EPO
1	"SWITCH$2"	1			
2	"SWITCH&GT"	29			
3	"SWITCH&LT"	3			
4	"SWITCH.O"	1			
5	"SWITCH.1"	2			

Hits | Details | HTML

Ready NUM

EAST Browser - L4: (13) 1 and 3 | US 6456269 : Tag: S : Doc: 8 13 | "Full" 1:14 (Total images 14)

File Edit View Tools Window Help



(12) **United States Patent**
Hirakata

(10) Patent No.: US 6,456,269 B2
(45) Date of Patent: *Sep. 24, 2002

(54) ACTIVE MATRIX TYPE LIQUID-CRYSTAL DISPLAY UNIT AND METHOD OF DRIVING THE SAME

(75) Inventor: Yoshiharu Hirakata, Kanagawa (JP)

(73) Assignee: Semiconductor Energy Laboratory Co., Ltd., Kanagawa-ken (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 09/848,890

(22) Filed: May 3, 2001

Related U.S. Application Data

(63) Continuation of application No. 09/371,797, filed on Aug. 10, 1999, now Pat. No. 6,243,064, which is a continuation of application No. 08/742,601, filed on Nov. 4, 1996, now Pat. No. 5,949,390.

(30) Foreign Application Priority Data

Nov. 7, 1995 (JP) 7-313626

(51) Int. Cl.[7] G09G 3/18

(52) U.S. Cl. 345/98; 345/96, 345/100; 349/48

(58) Field of Search 345/87, 92, 93-96, 345/204, 100, 208, 209, 210; 349 41-42, 47-48

(56) References Cited

U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

* cited by examiner

Primary Examiner—Lun-Yi Lao
(74) Attorney, Agent, or Firm—Fish & Richardson P.C.

(57) ABSTRACT

A data signal having a single polarity is outputted from a data driver of an in-plane switching type liquid-crystal display unit. In a unit pixel, an input transistor and an exhaust transistor T3 are connected to one electrode of a liquid-crystal element LC, and an input transistor and an exhaust transistor are connected to the other electrode. One input transistor and one exhaust transistor connected to the same scanning line are paired, and another input transistor and another exhaust transistor connected to another same scanning line are paired. These paired transistors are alternately driven, thereby being capable of inverting the potential between electrodes of the liquid-crystal element even when the polarity of the data signal is single.

23 Claims, 6 Drawing Sheets

US-PAT-NO: 6456269

DOCUMENT-IDENTIFIER: US 6456269 B2

TITLE: Active matrix type liquid-crystal display unit and method of driving the same

---------- KWIC ---------

Abstract Text - ABTX (1):
A data signal having a single polarity is outputted from a data driver of an in-plane switching type liquid-crystal display unit. In a unit pixel, an input transistor and an exhaust transistor T2 are connected to one electrode of a liquid-crystal element LC, and an input transistor and an exhaust transistor are connected to the other electrode. One input transistor and one exhaust

Details | Text | Image | HTML | KWIC

	Document ID	Current O	Current XR	Pages	Source	Is
1	US 6590553	345/92	345/204;	98	USPAT	2C
2	US 6577295	345/92		19	USPAT	2C
3	US 6567062	345/92	345/89	25	USPAT	2C
4	US 6545658	345/98	345/87;	59	USPAT	2C
5	US 6525705	345/87	345/89;	19	USPAT	2C
6	US 6480179	345/92	257/72;	12	USPAT	2C
7	US 6476788	345/92	345/100;	12	USPAT	2C
9	US 6429841	345/89	345/208;	22	USPAT	2C
10	US 6407728	345/90	345/92	42	USPAT	2C
11	US 6292183	345/211	257/E27.11	31	USPAT	2C
12	US 6243064	345/96	345/209;	14	USPAT	2C
13	US 5959599	345/92	345/96;	14	USPAT	19

TC2600: EIC Resources and Services

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These resources and services provide examiners with access to critical prior art. Most of the electronic resources listed on these Web pages are accessed via the Internet. You must be authenticated for data to be accessed. ▶ Firewall Authentication

✒ indicates tools featured in TC's NPL training.

Information Resources

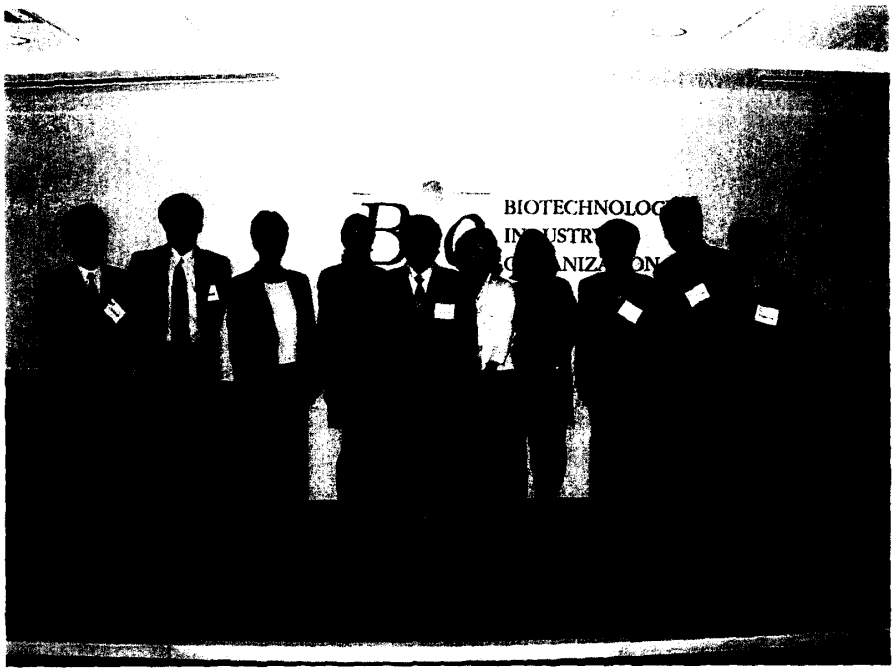
Information Resources by Class and Subclass

Databases

✒ ACM Digital Library
Business Source Corporate (Corporate Resource Net)
(multidisciplinary subject coverage)
Dialog Classic on the Web (training and password required)
DTIC STINET
(citations of Defense Technical Information Center scientific and technical documents)

✒ IEEEXplore
(Full page images of over 800,000 Electrical & Electronic Engineering articles, papers and standards, 1988 - present. Select content is available from 1952-1987.)

參、活動集錦（照片）



智慧局同仁與生物技術工業協會人員合影 2003.07.21

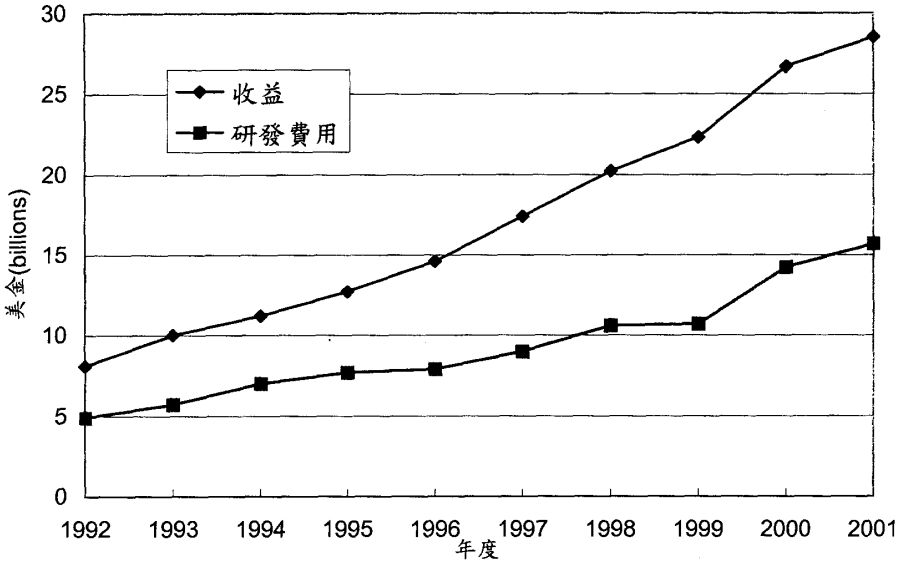
USPTO 局長 James Rogan 與智慧局同仁合影 2003.07.22

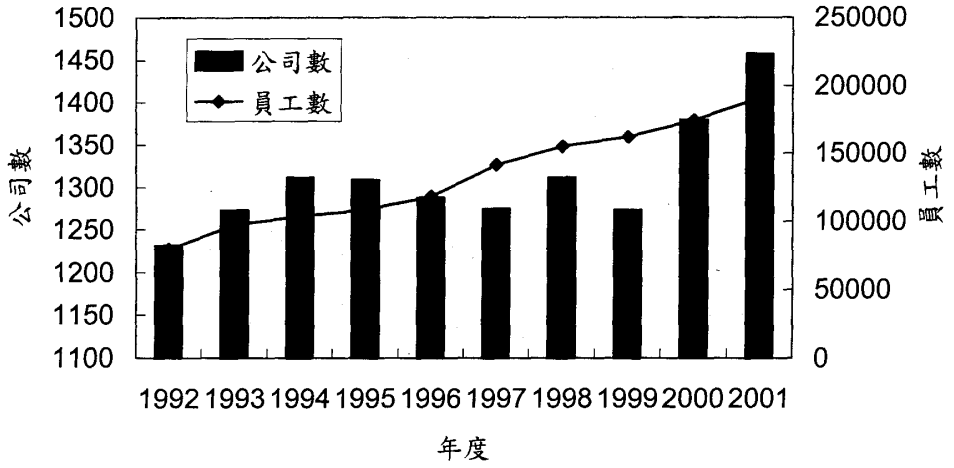
紙本數位化工程負責人 Sam Hardman 與智慧局同仁合影 2003.07.23

USPTO 副局長 Robert Stoll 與智慧局同仁合影 2003.07.24

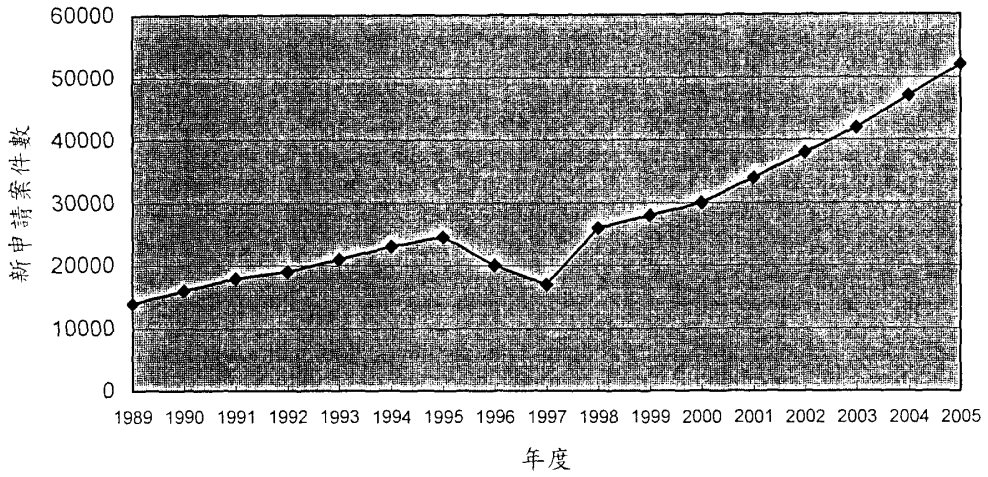
肆、心得

美國現有一千五百家生技公司，該等公司一年收入約三百四十二億美金，且特別重視研發及專利之申請（研發費用佔二分之一），因生技產業的蓬勃發展而帶動的相關生技產業人才也大幅度的增加。





美國生物技術申請專利主要係於歐洲、加拿大、日本、中國大陸及台灣，美國生技公司在決定全球佈局的區域時，由於台灣關於生技之法律面及生技專利保護政策仍然不夠明確，故生技專利之申請，通常不會將台灣列入優先考量，因此本局近年來之生技專利申請案並不似美國生技申請案呈高度之成長（美國生物技術近五年來專利申請從1997年約一萬七千件後逐年成長，至2001年已有三萬七千件）。



在審查官的訓練方面，USPTO 新進人員由資深審查官採一對一方式實際監督助理審案，俟其逐漸熟悉審查要領，資深審查官之復核工作逐步放寬，新進人員平均約四至六年始能完全獨立審查。另外USPTO 每年開辦中級及資深審查官持續訓練計畫，就各技術領域之特殊議題給予訓練，此課程亦開放給各界參與，以提供審查官與外界申請人及民眾有技術觀念溝通及切磋之機會。

關於美國專利申請案之線上申請，USPTO 在試行 EFS 兩年期間，申請人使用電子方式進行申請的案件數量並不多，而經濟規模較小之中小企業、申請人仍在觀望系統發展的情形，故導致 USPTO 線上申請率有偏低之現象。

USPTO 現階段在業務電子化方面之策略是由後端往前端發展，由於目前 USPTO 所開發之編輯程式 PASAT 為符合 XML 之格式，導致申請人使用端使用起來並不友善、便利，為因應 USPTO 搬遷之需求，故 USPTO 目前優先考量的是先將所有的紙本文件影像化，以減輕搬遷之負荷以及提供影像檔來支應審查系統（e-phoenix），以利於審查官之審查。

至於前端之申請編輯程式（EFS）的部分，USPTO 仍然持保留的態度，未來兩年世界各國將陸續推出專利申請專用之編輯程式，如 JPO、WIPO、EPO 等，但 USPTO 認為在申請人普遍使用商業軟體進行文書處理的情形下，此部份在高度自由的國家可行性並不高，因此 USPTO 傾向於在 2005~2006 年時，視當時文書處理之商業軟體 XML 格式化之程度，再來考量前端編輯器開發之可行性。

伍、建議

有鑑於美國生物科技產業正值蓬勃發展之成長期，但我國相對於美國卻仍然停留在萌芽期，探究其原因，除了生技人才之缺乏外，相關的生物技術是否給予專利之政策也是產業興衰之關鍵，特別是在生物技術可專利性的部分，目前我國採取較保守的態度，而美國對於生物技術可專利性之限制較為寬鬆，USPTO 採取開放性的態度來獎勵發明人，因此許多生技公司前仆後繼地投入大筆資金進行研發，也成就許多高附加價值的生物技術專利。因此當務之急，現階段須針對生物技術可專利性之政策進行評估，以配合國際趨勢，適度開放生物技術可專利性之限制，以達到鼓勵發明、促進產業發展之效果。

USPTO 之專利審查官必須經過四至六年嚴謹的訓練後，才能夠開始獨立審案，故美國的代理人及申請人對於 USPTO 之審查品質深感認同，但我國由於審查人力之不足，審查官往往背負著案件數量之壓力而難以兼顧審案之品質，此外，外審制度更長期為民眾所詬病，因此如何爭取更多的審查人力並加以嚴謹的審查訓練，以及檢討外審委員制度之存續，實為提昇我國審查品質以及專利保護的不二法門。

關於 e 網通系統建置，友善而便利的申請編輯程式（EFS）是前端作業成功的關鍵，因此了解申請端民眾的需求以及作業模式，並將其納入申請編輯程式的開發之中，並在開發期間與申請端密切配合修

正，以期能提高申請人使用之意願。而後端之紙本資料數位化以及公報產出的部分，USPTO 的合作夥伴 RTIS 有十分成熟的技術及豐富的經驗，如化學結構式之整備，RTIS 會將申請案件之化學式由專人繪製整備，表格方面也會請專人重新鍵入整備等經驗，可以提供給本局將來在系統開發建置、電子檔案之管理與儲存等作為參考。

陸、相關資料

附件一、 The United States Patent Office Biotechnology Patent Examination

附件二、 Patents e-Commerce at the U.S. Patent & Trademark Office

附件一

Taiwan Patent Office Training Program 2003

The United States Patent Office Biotechnology Patent Examination

Christina Chan
Supervisory Patent Examiner,
Art Unit 1644
Technology Center 1600
Biotechnology, Organic Chemistry and Pharmaceuticals

UNITED STATES PATENT AND TRADEMARK OFFICE

Topics of the Day

- USPTO - Background Information
- Patent Statutes
  - 35 USC 101, Utility
    - Guidelines
  - 35 USC 102, Anticipation
  - 35 USC 103, Obviousness
  - 35 USC 112, 1st Paragraph
    - Enablement - Training Materials
    - Written Description - Guidelines

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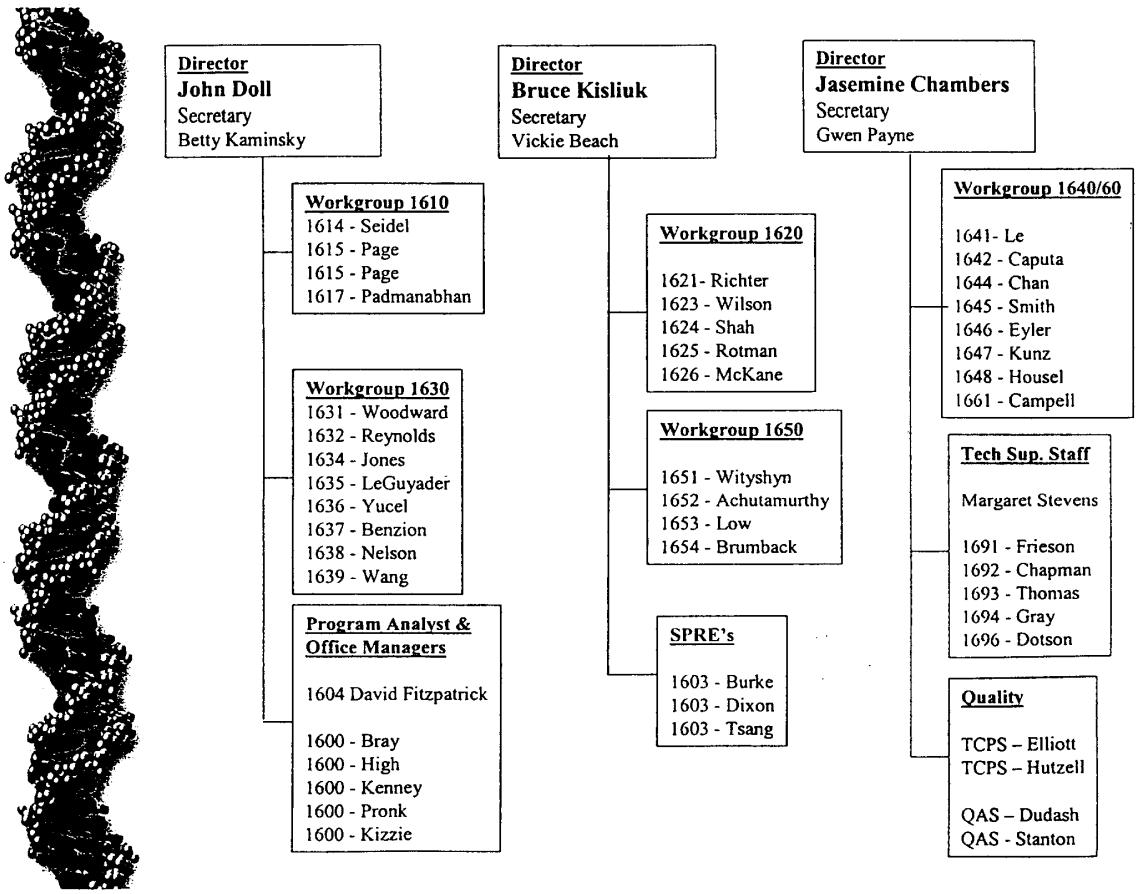
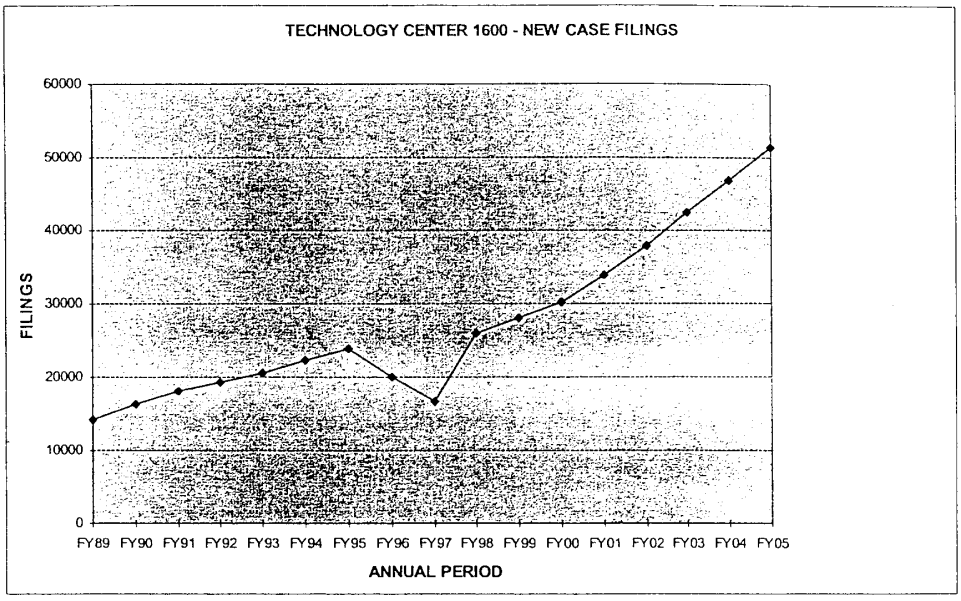


TC 1600 New Case Filings



American Inventor's Protection Act

- 14 - 4 - 4 - 4 - 36
  - 14 Months to First Action
  - 4 Months for Amendment Response
  - 4 Months to Issue after Notice of Allowance
  - 4 Months to Act after Decision by BPAI
  - 36 Months Total Pendency

Title 35
United States Code

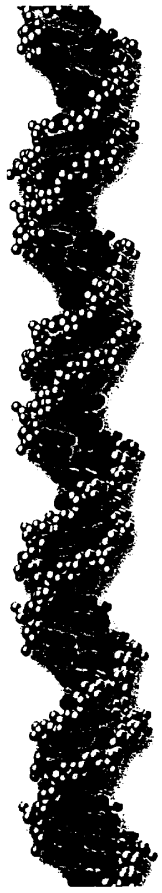
Defines Patentability

35 USC §101
Patentable Inventions

Whoever invents or discovers **any new and useful** process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Utility Guidelines

- Federal Register
  - (http://www.access.gpo.gov/su_docs/aces/aces140.html)
  - Utility Guidelines
    - 66 FR 1092 (January 5, 2001)
- Applies to all pending applications



Utility

- Three-pronged
  - Specific
  - Substantial
  - Credible

And Well Established Utilities that are Specific, Substantial and Credible

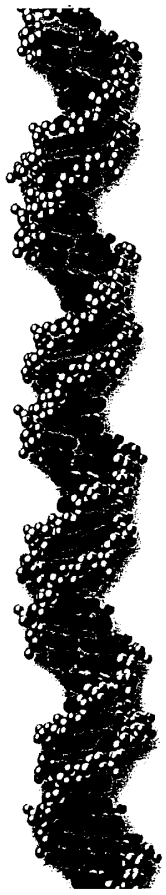
Specific and Substantial Utility

- **Brenner v. Manson, 383 U.S. 519 (1966)**
  - **The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility**. Unless and until a process is refined and developed to this point -- **where specific benefit exists in currently available form** -- there is insufficient justification for permitting an applicant to engross what may prove to be a broad field.

Specific and Substantial Utility

- The famous quote from Brenner v. Manson:
  - "But a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion."

- Hunting license or reward for successful conclusion of the search?



Specific Utility - Definition

A utility that is *specific* to the subject matter claimed

This contrasts with a *general* utility that would be applicable to the broad class of the invention

Substantial Utility - Definition

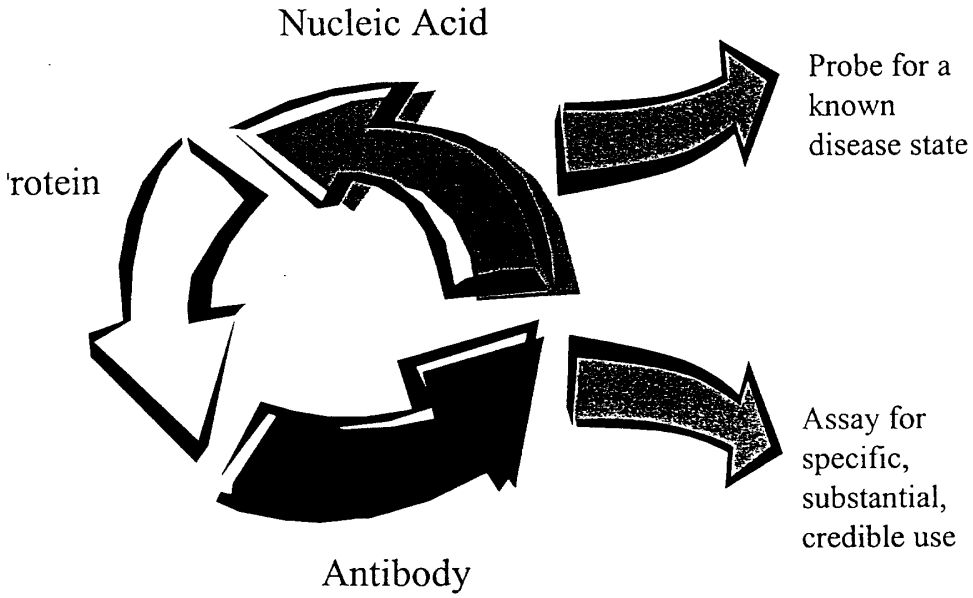
A utility that defines "real world" use

- Utilities that require or constitute carrying out further research to identify or reasonably confirm a "real world" context of use are not substantial utilities

Substantial Utility

- Both a therapeutic method of treating a known or newly discovered disease and an assay method for identifying compounds that themselves have a "substantial utility" define a "real world" context of use
- An assay that measures the presence of a material which has a stated correlation to a predisposition to the onset of a particular disease condition would also define a "real world" context of use in identifying potential candidates for preventive measures or further monitoring

Substantial Utility "Wheel"



"Throw Away" Utility

Note that "throw away" utilities do not meet the tests for a *specific* or *substantial* utility.

For example, using transgenic mice as snake food is a utility that is **neither specific** (all mice could function as snake food) **nor substantial** (using a mouse costing tens of thousands of dollars to produce as snake food is not a "real world" context of use). Similarly, use of any protein as an animal food supplement or a shampoo ingredient are "throw away" utilities that would not pass muster as specific or substantial utilities under 35 U.S.C. §101

This analysis is tempered by consideration of the context and nature of the invention.

If a transgenic mouse was generated with the specific provision of an enhanced nutrient profile, and disclosed for use as an animal food, then the test for specific and substantial *asserted* utility would be considered to be met

Credible Utility - Definition

- An assertion is credible unless
  - (A) the logic underlying the assertion is seriously flawed, **or**
  - (B) the facts upon which the assertion is based are inconsistent with the logic underlying the assertion

- Credibility as used in this context refers to the reliability of the statement based on the logic and facts that are offered by the applicant to support the assertion of utility.

- A *credible* utility is assessed from the standpoint of whether a person of ordinary skill in the art would accept that the recited or disclosed invention is currently available for such use.
  - For example, no perpetual motion machines would be considered to be currently available. However, nucleic acids could be used as probes, chromosome markers, or forensic or diagnostic markers

Well Established Utilities - Definition

- A specific, substantial, and credible utility which is well known, immediately apparent, or implied by the specification's disclosure of the properties of a material, alone or taken with the knowledge of one skilled in the art

35 U.S.C. §102

Conditions for Patentability; Novelty and Loss of Right to Patent

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(e) the invention was described in - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35 U.S.C. §103

Conditions for Patentability; Non - obvious Subject Matter

Section (a)

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

35 USC §112, 1st Paragraph Enablement

The specification shall … enable any person skilled in the art to which it [the invention] pertains, or with which it is most nearly connected, to make and use the same, . . .

"Wands Factors"

- Breadth of claims
- Nature of the invention
- State of the prior art
- Level of Skill in the art
- Level of predictability
- Amount of direction/guidance
- Presence/absence of working examples
- Quantity of Experimentation

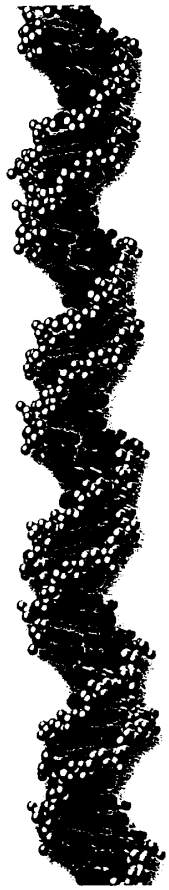
In re Wands, 858 F .2d 731, 737, 8 USPQ 2d 1400, 1404 (Fed. Cir. 1988)

35 USC §112, 1st Paragraph Written Description

The 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 terms . . . any person skilled in the art to which it pertains . . . to make and use the same . . .

Written Description Guidelines

- Federal Register
  - (http://www.access.gpo.gov/su_docs/aces/aces140.html)
  - Utility Guidelines
    - 66 FR 1092 (January 5, 2001)
- Applies to all pending applications



Technology and Claim Coverage

- Written in technology neutral manner since recent decisions of the Federal Circuit have written description implications in a broad range of technologies
  - *Eli Lilly & Co.; Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 47 USPQ2d 1829 (Fed. Cir. 1998); *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998); *Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 99-1066 (Fed. Cir., March 29, 2000)
- Products, Processes, and Products by process

General Principles

- Basic inquiry: Can one skilled in the art reasonably conclude that the inventor was in possession of the claimed invention at the time the application was filed?

- Written description requirement is separate and distinct from the enablement requirement

General Principles

- Strong presumption that an adequate written description is present in the application as filed

- Initial burden is on examiner to establish prima facie case of unpatentability

- Applicant should show support for new or amended claims (MPEP 714.02 and 2163.06)

Analysis

- If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, *even if every nuance of the claim is not explicitly described in the specification*, then the requirement for an adequate written description is met.

Evidence of Possession

- Actual reduction to practice
  - Reduction to practice normally not required
    - cf: *Amgen Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991)
  - Deposit of biological materials
    - Not a substitute for written description
    - Per 37 CFR 1.809(d), the specification must include a description of the deposit sufficient to specifically identify it and to permit examination

Evidence of Possession

- Clear depiction of the claimed invention in detailed drawings
  - *Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55, 48 USPQ2d 1641 (1998)
  - *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 19 USPQ2d 1111
  - (Fed. Cir. 1991)
- What is conventional or well known to one skilled in the art need not be disclosed in detail
  - *In re Hayes Microcomputer Products, Inc. Patent Litigation*, 982 F.2d 1527, 1534-35, 25 USPQ2d 1241, 1246 (Fed. Cir. 1992) ("Disclosing a microprocessor capable of performing certain functions is sufficient to satisfy the requirement of section 112, first paragraph, when one skilled in the relevant art would understand what is intended and know how to carry it out.").

Evidence of Possession

- Written description describing sufficient relevant identifying characteristics
  - Weigh factual considerations in view of level of skill and knowledge in the art
    - See, e.g., *Union Oil Co. of Cal. v. Atlantic Richfield* ("In sum, the record shows that the inventors possessed the claimed invention at the time of filing in the assessment of those of ordinary skill in the petroleum refining art.")
  - <u>The less mature the technology, the more evidence is required to show possession</u>
  - Level of skill and knowledge in the art increases over time

Evidence of Possession

- **Sufficient distinguishing identifying characteristics**
  - **Weigh factual considerations in view of level of skill and knowledge in the art**
    - **Complete or partial structure**
    - **Physical and/or chemical properties**
    - **Functional characteristics**
    - **Correlation between structure / function**
    - **Method of making**
    - **Combinations of the above**

Generations of Genomic Discovery

- 1st Generation
  - partial sequences, no ORFs
- 2nd Generation
  - ORF disclosed with putative function only
- 3rd Generation
  - Fully characterized nucleic acid including expression of any encoded protein and full functional analysis of said protein.

Claim Analysis

Consider the following claim:

A nucleic acid comprising SEQ ID NO 1.

Question ???

Does the nucleic acid encode a protein?

Yes

2nd Generation (plus/minus)

No

1st Generation

1st Generation - Utility

What is the asserted utility?

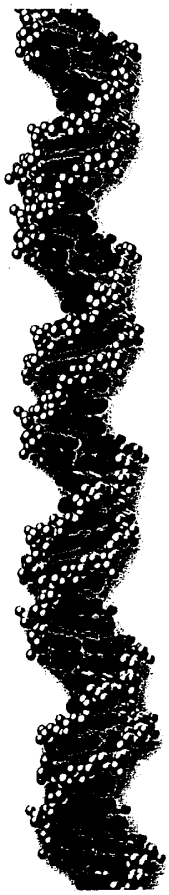
- Probe?
- Marker?
- Discovery Tool?

Is the target of the probe/marker identified?

1st Generation - Utility

Probes/Markers

- Target Identified?
  - No:
    - The utility may not be considered specific or substantial
  - Yes: What is the target?
    - A chromosomal, bacterium, band, cell type, etc. may *NOT* be considered to be substantial.
    - A probe/marker for a disease or diagnostic target specific to a disease state would be considered to be specific and substantial.



1st Generation - Utility

Examples of acceptable probe targets

Bacterium that is associated with a disease

N. gonorrhea is an etiologic agent for venereal disease

M. pneumonia is an etiologic agent of pneumonia

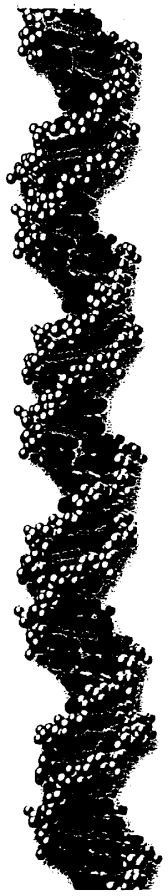
Chromosomal Target

a chromosomal breakpoint marker associated with a particular disease

Bcl-2 (breakpoint cluster 2) is associated with cancer. A probe to this particular chromosomal rearrangement would be clinically important in determining an appropriate treatment modality

1st Generation - Utility

If no particular target of diagnostic relevance is disclosed, the claims may be rejected under 35 U.S.C. §101 and § 112, first paragraph, as failing to be supported by a specific, substantial, and credible utility or a well-established utility.



1st Generation - Written Description

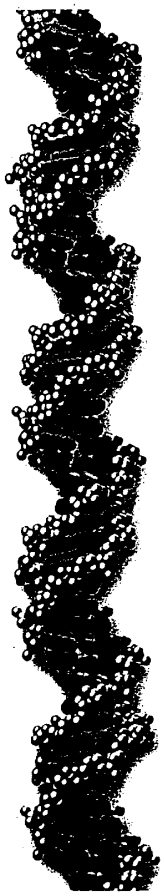
A claim drawn to a nucleic acid "comprising" would be considered to read on a gene

Since the art does not provide a generally accepted definition of "gene" and elaboration of its characteristics (i.e. sequence) would require both a definition and a sequence disclosure, the claim under consideration would read on the gene and such would generally lack an adequate written description in the absence of specific and particular disclosure of the "gene's" characteristics.

1st Generation - Scope of Enablement

A claim that is supported by an acceptable specific, substantial, and credible utility will generally be limited to closed claim language.

A nucleic acid consisting of SEQ ID NO 1.



1st Generation - Scope of Enablement

The basis of this limitation will generally be a lack of teachings regarding what additional sequences may be added to those specifically disclosed such that the asserted utility would be present

Also, the claim will read on a number of non-enabled embodiments such as:

- protein coding regions
- genes
- alleles

2nd Generation

An ORF is disclosed

- regardless of source
  - human, animal, bacterial, viral

A deduced amino acid sequence is disclosed

A function is ascribed following database comparison or identification of consensus sequence

2nd Generation

Look at the protein

Search the protein

Question:

Would the skilled artisan accept that the protein is what is asserted ???

2nd Generation

"The" Protein

Two possibilities:

The identification of the protein is acceptable.

The identification of the protein is rebuttable

2nd Generation

Example:

Applicant asserts that the protein is an interleukin receptor because it is 85% identical at the amino acid level with other IL-receptors

A search confirms the asserted identity and that the next closest match is a 50% identity to beta-actin.

No reason to doubt assertion that the protein is an IL-receptor.

2nd Generation

Utility

Is there a well-established utility for IL-receptors?

No. Different receptors would have different functions and the skilled artisan would have to determine such.

2nd Generation

Is the utility specific?

Maybe. The use would be particular to a general class of receptors, but the limited amount of information present would apply equally to all IL-receptors

2nd Generation

Is the utility substantial?

No. The skilled artisan would need to prepare, isolate, and analyze the protein in order to determine its function and use. Therefore, the invention is not in readily available form. Instead, further experimentation of the protein itself would be required before it could be used.

2nd Generation

The claim may be rejected under both 35 U.S.C. §101 and §112, first paragraph, as failing to be supported by a specific, substantial, and credible utility or a well-established utility.

2nd Generation

Is there an alternative utility?

Probe?

Return to considerations under 1st Generation type applications including limitations of scope of claims.

For most eukaryotic situations, 2nd Generation claims will not generally read on genes (at least in EST situations) because cDNAs do not include introns.

2nd Generation

Now change fact pattern.

Asserted protein function is as a DNA ligase and the search and analysis indicates that this is a reasonable assertion.

Utility

DNA ligases have well-established uses in the art based upon their enzymatic activity.

Written Description

No problem

2nd Generation

Scope of enablement

Since the claimed nucleic acid is relying upon its encoding a protein with a well-established utility, this claim would be treated as any other nucleic acid encoding a protein and open claim language is appropriate assuming no other examination considerations are present.

2nd Generation

Now change the results from our search.

A search of the prior art confirms the asserted identity, however, the next closest match is a 85% identity to beta-actin.

In this case, there is reasonable support for the conclusion that the protein would not be an IL-receptor.

2nd Generation

Therefore, reject the claim under 35 U.S.C. §101 and 112, first paragraph, as failing to be supported by specific, substantial, and credible utility or a well-established utility.

However, again, If there is an alternative utility disclosed such as use as a probe, return to considerations under 1st Generation type applications including limitations of scope of claims.

3rd Generation

•This is a fully disclosed invention including isolation of the protein encoded by the claimed nucleic acid and the determination of biological activity and function of said protein. Therefore, there will generally *not* be any issues raised under 35 U.S.C. §101 or §112, first paragraph (enablement or written description).

Transgenic Plant BioReactors

Goodman et al. (U.S. Patent 4,956,282; U.S. Patent 5,550,038; U.S. Patent 5,629,175), Issue Date 08/27/96 -- production of murine interferon in tobacco.

Loike et al. (U.S. Patent 5,855,881), Issue Date 01/05/99, Assignee Gel Tech Group -- production of human ADH (alcohol dehydrogenase) and ADLH (aldehyde dehydrogenase), to reduce absorption of alcohol in the blood, in corn.

Fortin et al. (U.S. Patent 5,723,755), Issue Date 03/03/98, Assignee McGill University -- production of human protein C, key element of anticoagulation cascade, in tobacco.

Hiatt et al. (U.S. Patent 5,202,422; U.S. Patent 5,639,947), Issue Date 04/13/93, Assignee Scripps Institute -- production of multimeric proteins/antibodies (abzymes) in tobacco.

Maliyakal et al. (U.S. Patent 5,474,925), Issue Date 12/12/95, Assignee Research Corp / Monsanto -- production of immobilized enzymatic proteins (bacterial beta-glucuronidase) in cotton fiber.

Hein et al. (U.S. Patent 5,959,177), Issue Date09/28/99, Assignee NIH / Scripps -- production of multimeric proteins/ antibodies (Shigella toxin antibody) in tobacco.

Russell et al. (U.S. Patent 6,080,560; U.S. Patent 6,140,075), Issue Date 06/27/00, Assignee Agracetus / Monsanto -- production of multimeric proteins/ antibodies (L6 anti-tumor antibody) in tobacco.

Radin et al. (U.S. Patent 5,929,304), Issue Date 07/27/99, Assignee VPI / Crop Technologies -- production of lysosomal enzymes (human glucocerebosidase and human gamma-L-iduronidase), for enzyme replacement therapy in treatment of lysosomal storage diseases, in tobacco.

Commercial Agricultural Products Overview

PRODUCT	GENETIC MODIFICATION	PURPOSE
tomatoes, peas, peppers, tropical fruit, broccoli, raspberries, melons	controlled ripening	Allow shipping of vine-ripened tomatoes; improve shelf life, quality.
tomatoes, potatoes, corn, lettuce, coffee, cabbage family, apples	insect resistance	Reduce insecticide use.
peppers, tomatoes, cucumbers	fungal resistance	Reduce fungicide use.
potatoes, tomatoes, cantaloupe, squash, cucumbers, corn, oilseed rape (canola), soybeans, grapes	viral resistance	Reduce diseases caused by plant viruses and – since insects carry viruses – reduce insecticide use.
soybeans, tomatoes, corn, oilseed rape (canola), wheat	herbicide tolerance	Improve weed control.
corn, sunflowers, soybeans, and other plants	improved nutrition	Increase the amount of essential amino acids, vitamins or other nutrients in the host plant.
oilseed rape (canola), peanuts	heat stability	Improve processing quality; permit new food uses for healthier oils.

Sources: The Hale Group/Decision Resources, Inc., *Food Processing* and *BIO/technology* magazines

Transgenic Animal BioReactors

Patent No. 5,880,327, Applicant: LUBON,HENRY K et al., Assignee: VPI AND STATE UNIVERSITY
Issue Date: 03/09/1999
Transgenic mammal, specifically a mouse, rat, rabbit, pig, sheep, goat or cow, which produces recombinant human Factor VIII in its milk. Factor VIII is a clotting factor which is missing in certain types of hemophilia.

Patent No. 5,895,833, Applicant: BERG,RICHARD A., Assignee: COHESION TECHNOLOGIES, INC.
Issue Date: 04/20/1999
Transgenic mammal which produces human collagen in its milk. Collagen is used in reconstructive therapeutic procedures.

Patent No. 6,025,540, Applicant: HANSSON,LENNART, Assignee: None
Issue Date: 02/15/2000
Transgenic mammal, rabbits, mice, rats, goats, sheep, pigs, lama, camels and bovine species, which produce superoxide dismutase in its milk. Superoxide dismutase is a protective factor against superoxide radicals and is found in most mammalian cells.

Patent No. 5,741,957, Applicant: DEBOER,HERMAN A. et al., Assignee: GENE PHARMING EUROPE BV
Issue Date: 04/21/1998
Transgenic cow which produces a heterologous protein in its milk. In this patent, the novelty of the invention was the development of the combination of factors which allowed production of proteins in the milk of cattle.

Patent No. 5,700,671, Applicant: PRIETO,PEDRO A. et al., Assignee: ABBOTT LABORATORIES
Issue Date: 12/23/1997
Transgenic mammal, mouse, rat, rabbit, pig, goat, sheep and cow, which produce an enzyme in its milk.

Patent No. 5,476,995, Applicant: CLARK,ANTHONY J. et al., Assignee: PPL THERAPEUTICS LIMITED
Issue Date: 12/19/1995
Transgenic sheep which produce Factor IX or alpha1-antitrypsin in its milk. Factor IX and alpha1- antitrypsin are blood coagulation factors.

附件二

UNITED STATES PATENT AND TRADEMARK OFFICE

Patents e-Commerce at the U.S.Patent & Trademark Office

Taiwanese Patent Office

(July 2003)

Created: July 2003

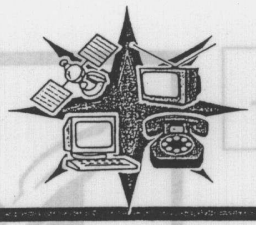
Today's Topics

Patent Electronic Business Center (EBC)

Electronic Filing System (EFS) Overview

Patent Application Information Retrieval (PAIR) System

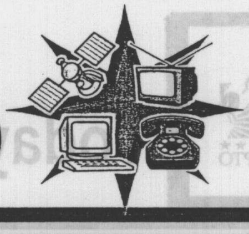
Patent Electronic Business Center (EBC)



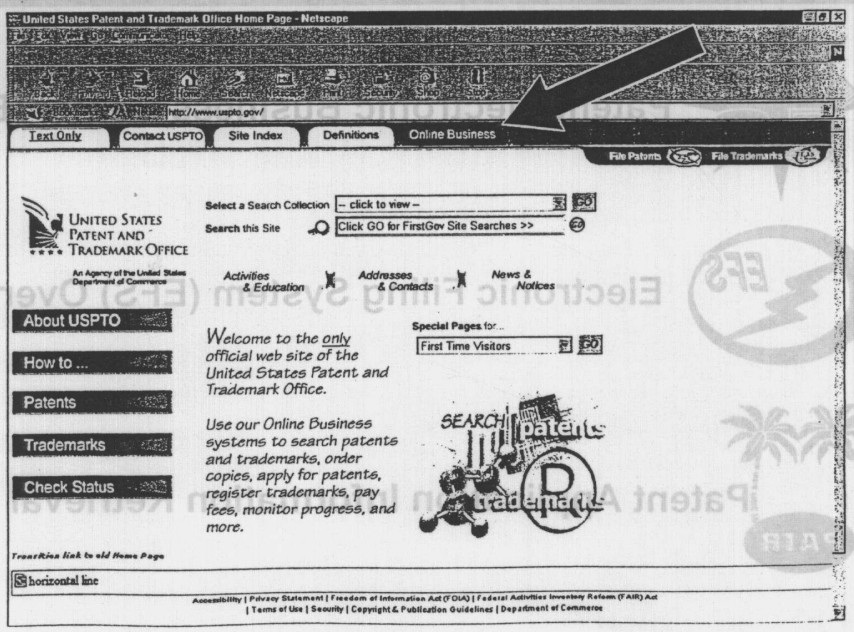
Provides access to electronic business applications for patent customers

- Customer Number Registration Forms
  - Required for PAIR and EFS
- Public Key Infrastructure (PKI) Registration Forms
  - Security software to support electronic commerce
  - Required for PAIR and EFS
- Patent Application Information Retrieval (PAIR)
  - Access to application status and history via the internet
- Electronic Filing System (EFS)
  - Filing of patent applications via the internet

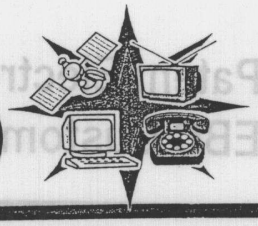
Patent Electronic Business Center (EBC)



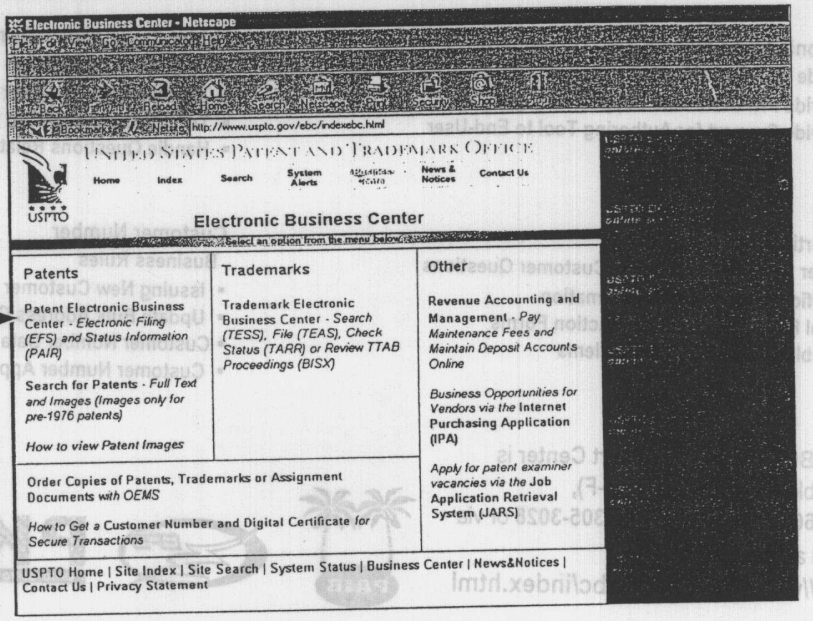
Visit the USPTO Website, www.uspto.gov & click on Online Business.



Patent Electronic Business Center (EBC)

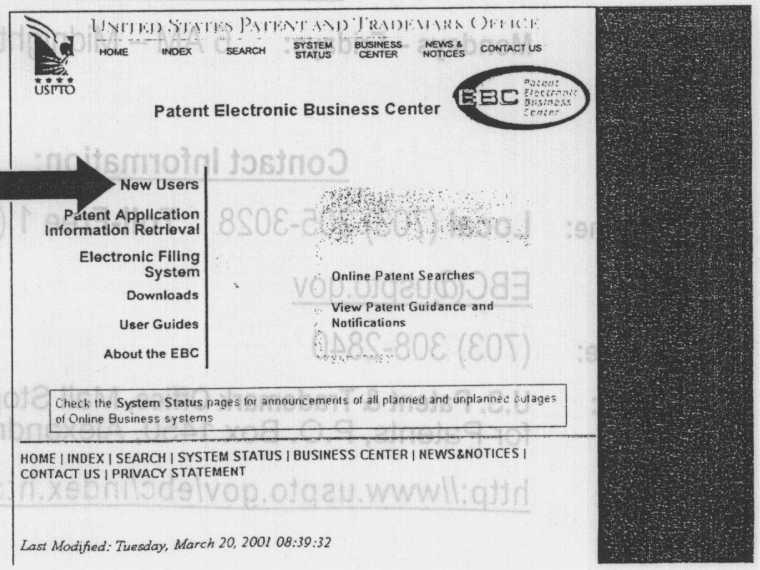


Click on:
Patent Electronic Business Center

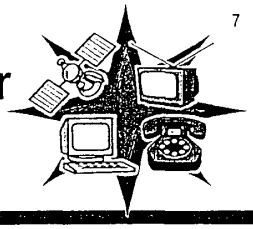


Patent Electronic Business Center (EBC)

Click on New Users



Patent Electronic Business Center
EBC Customer Support Center



Electronic Filing System
Provide Customer Number
- Provide PKI Certificate Support
- Provide Support for Authoring Tool to End-User

Patent Application Information Retrieval
Registration Information
- Troubleshoot End-User Problems
- Troubleshoot Software Problems
- Handle Questions Related to Data

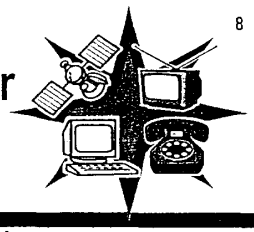
PKI Certificates
Answer Business Aspects of Customer Questions
- Certificate Action Form Information
- Initial Review of Certificate Action Forms
- Troubleshoot End-User Problems

Customer Number
Business Rules
- Issuing New Customer Numbers
- Update Bulk Address Changes
- Customer Number Data Change Information
- Customer Number Application Information

The EBC Customer Support Center is available 18 hours daily (M–F), at 1(866) 217-9197 or (703) 305-3028 or via e-mail at ebc@uspto.gov
http://www.uspto.gov/ebc/index.html

PAIR EPS PKI USPTO • USPTO • USPTO Patent's Customer Number

Patent Electronic Business Center
EBC Customer Support Center



Available To Our Customers 18 Hours Daily Monday - Friday

Hours of Operation:

Mondays – Fridays: 6 AM – Midnight (Eastern Time)

Contact Information:

Telephone: **Local** (703) 305-3028 **Toll-Free** 1 (866) 217-9197

E-Mail: EBC@uspto.gov

Facsimile: (703) 308-2840

Address: **U.S. Patent & Trademark Office,** Mail Stop EBC, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

Website: http://www.uspto.gov/ebc/index.html

Electronic Filing System (EFS)

EFS Overview

EFS Overview

- EFS General Overview
- EFS Software Components

EFS Concepts

EFS facilitates *electronic* authoring and *secure* submission of patent application documents to the USPTO *via the Internet.*

EFS Concepts

EFS applies Internet and e-commerce technologies to the existing patent practice

Patent Business Rules/Practices	+	Internet Technologies
• Author Submission (paper output)	→	• Tagged Data (electronic output)
• Check for Compliance with Rules	→	• Software Validates, Bundles, Compresses
• Compile and Package for Mailing		
• Mail Package to USPTO	→	• Internet Provider, Browser, Security Software, Electronic Signature
• USPTO Postcard Receipt	→	• Electronic Mailroom/Receipt

EFS – Customer Benefits

- Reduces mailing fees and inconvenience.
- Flexibility and convenience when filing:
  - ✓ 24 hours a day, 7 days a week
  - ✓ From almost anywhere, over the Internet
- Facilitate e-filing and accuracy for Pre-Grant Publication.
- Automatic validation of EFS submissions for completeness and USPTO business rules.
- Immediate Electronic Acknowledgement Receipt:
  - ✓ No delay while waiting for Postcard.
  - ✓ Use Application Number for same day paper filings.
- Rapid assignment recordation and notification.
- Automatic paragraph and claim numbering facilitates future amendments.

EFS – Software Release

Several EFS releases phase-in electronic filing of various types of patent application submissions.

- EFS phases allow USPTO to gather feedback, test, and improve each successive release.
- October 2000 EFS release, which incorporated EFS Pilot release feedback, was the first EFS production release of software that supports:
  - New Utility
  - Pre-Grant Publication
  - CRF Biosequence Submissions

EFS – Software Release

- December 2001 added the following:
  - Ability to file Provisionals.
  - Ability to file Multiple Assignments.
    - With New Utility, Provisional, or as a separate filing).
  - Improved network compatibility.
  - Ability to attach Appendix Data (e.g. computer program listings, large tables) as described in the Specification.
- Spring 2002
  - Ability to file electronic Information Disclosure Statements (eIDS).
- October 2002
  - Lengthen the fee code field – transparent to users.

EFS – Software Release

- April 2003 Complete Redesign of ePAVE to do the following:
  - Comply with the international e-filing standards outlined in the Annex F of the Patent Cooperation Treaty (PCT). For additional information regarding these international e-filing standards, please refer to World Intellectual Property Organization (WIPO) Legal framework and technical standard – DTD online documentation (December 20, 2001) website: http://pcteasy.wipo.int/efiling_standards/[illegible]
  - XPORT XML Specification Translation Tool.
  - Look & feel of GUI now more user-friendly.
  - Low-Level PKI Certificate can now be used to submit New Utility & Provisional applications. Only the e-mail address is required.
  - Automated Debit Account processing.

EFS – Software & Manuals

EFS Software & Technical Documentation

- Download Off of EFS Website (www.uspto.gov, Click on File Patents)
- If Download not possible, contact EBC for CD.

Note: Check EFS website for periodic software and documentation updates.

EFS – 4 Steps

1. **Preparation**
   - Gather the application documents.
2. **Authoring**
   - Create electronic application components for submission to the USPTO.
3. **Viewing**
   - Display the application in standard Web browser for attorney or applicant review
4. **Submission**
   - Package and encrypt the application components for transmission to the USPTO over the Internet

EFS – Preparation Step

Convert Image Files To TIFF Format

- Drawings, inline graphics, documents
- 300 dpi
- Black & white (no color or grayscale)
- Group 4 compression
- Maximum Page Size of 8.5" x 11"

Note: Image File include drawings, tables, complex work units (mathematical/chemical), official signed documents.

EFS – Authoring Step

Customers use USPTO-provided software to:

- Create structured, eXtensible Mark-up Language (XML) tagged documents using USPTO-customized tool for use with the MS Word commercial product.
- Create transmittal, fee, and application data sheet information as structured, XML tagged documents using USPTO-provided submission software.

Requires no user knowledge of XML, as software formats automatically!

EFS – Viewing Step

Electronic files are viewed in standard Web browser.

USPTO standard stylesheet controls display format.

- Attorney or applicant certifies that this is the version which was reviewed and submitted
- User display and printout are identical to USPTO display and printout with same stylesheet.
- Electronic format, as displayed and printed at USPTO, becomes legal record of filing.

EFS – Submission Step

electronic Packaging And Validation Engine (ePAVE):

- User-friendly Graphic User Interface (GUI).
- Collects transmittal, fee, bibliographic, and publication information.
- Allows easy attachment of previously created electronic documents such as XML and TIFF files.
- Automatically bundles, compresses,digitally signs, and securely transmits the submission to the USPTO via the Internet (using PKI technology).
- *Immediate* return of electronic Acknowledgement Receipt with Application Number and Confirmation Number (New Utility & Provisional Applications).

EFS – Software Components

PASAT

EFS – PASAT Component

PASAT

Patent Application Specification Authoring Tool

PASAT – Initial Creation Step

Create specification content text using a

Microsoft word-processing tool, for example:

- Microsoft WORD
- Microsoft WORDPAD

Key concepts in creating specification content text:

- Document should be created with one of these three fonts: Arial, CG Times, or Times New Roman
- Document should NOT contain any BOLD characters.
- Document should NOT contain any control characters.
- Document should NOT be created using any macros.

Specific "patenting" related questions about specification content text should be directed to the Inventors Assistance Center (IAC)

Telephone Numbers:	800-PTO-9199 (800-786-9199) or 703-308-HELP (703-308-4357)
Hours of Operation:	Monday - Friday 8:30 AM - 5:00 PM (Eastern Time Zone)

PASAT – Basic Steps

Basic steps to create a new specification with PASAT:

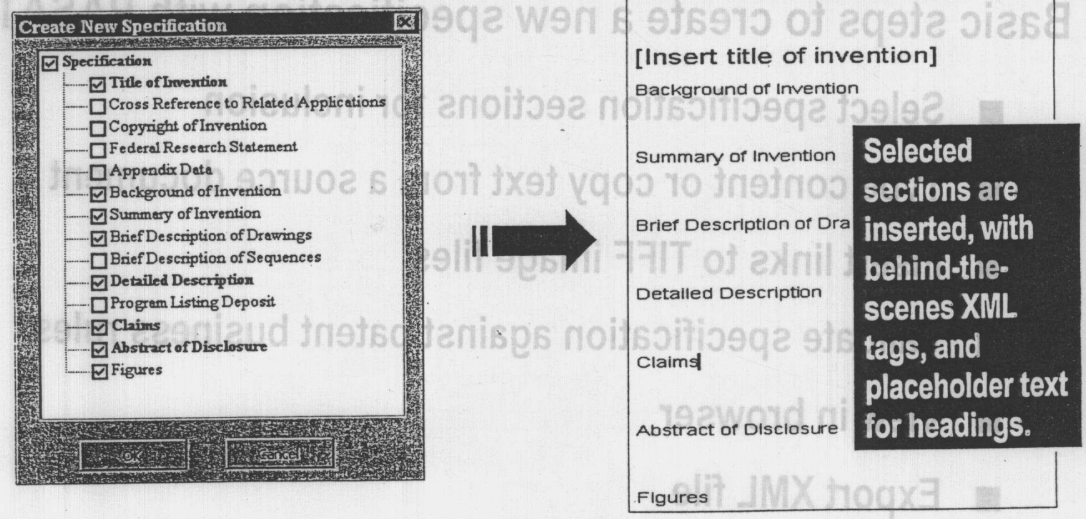
- Select specification sections for inclusion
- Type content or copy text from a source document
- Insert links to TIFF image files
- Validate specification against patent business rules
- View in browser
- Export XML file

PASAT – Primary Functions

The primary functions available in PASAT are:

- Create New Specification
- Customized Office Assistant
- Paste Paragraphs
- Paste Claims
- Figure Manager
- Validate Document
- Preview Specification in Browser
- Export XML file

PASAT – Creating A New Specification



PASAT – Customized Office Assistant

[] According to the present inve
surrounding a break in plate g
molded resin casting, filling th

[] The mold comprises a hollow
glass. The hollow body is ad
break in liquid tight engagem
course, may be otherwise app
most expeditious w of using
that air replaced resin can

r cracks, such
the usability of th
, substantially restoring the visibility through the glass, obviating very expensive and
suming replacement of the entire glass panel which includes the break or crack.

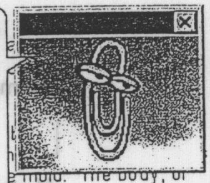
ve seems to be the
he top of the mold so
nd to do the repair.

e glass, but oftentimes
cracks themselves can

User options while in a plain paragraph

Standard Paragraph Section

- Append Paragraph
- Insert Symbol
- Insert a Chemistry Complex Work Unit
- Insert a Math Complex Work Unit
- Insert a Table Complex Work Unit



Customized Office Assistant suggests common tags based on cursor position

PASAT – Paste Paragraph Function

Plate glass repair

Detailed Description

|

Claims

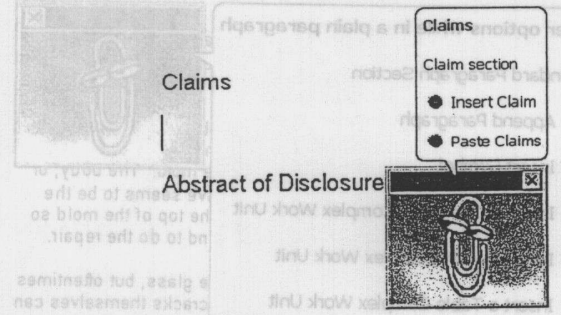
Detailed Description

Detailed Description

- Insert New Paragraph
- Paste Paragraphs
- Insert Section
- Insert Biological Deposit Data

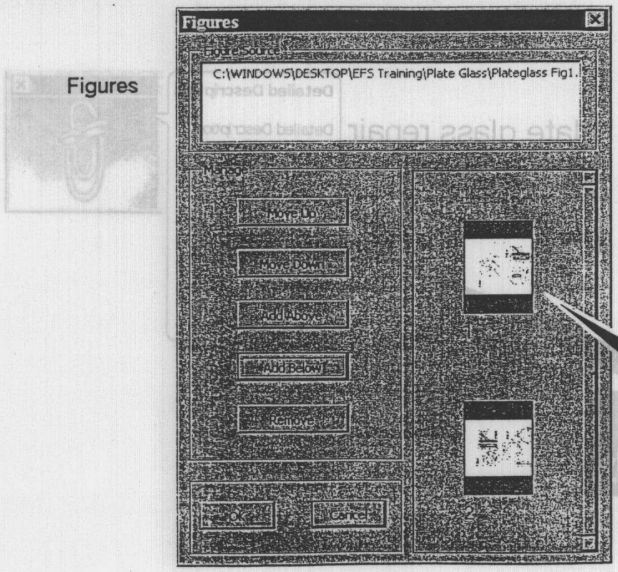
Insert and tag multiple paragraphs automatically

PASAT – Paste Claim Function



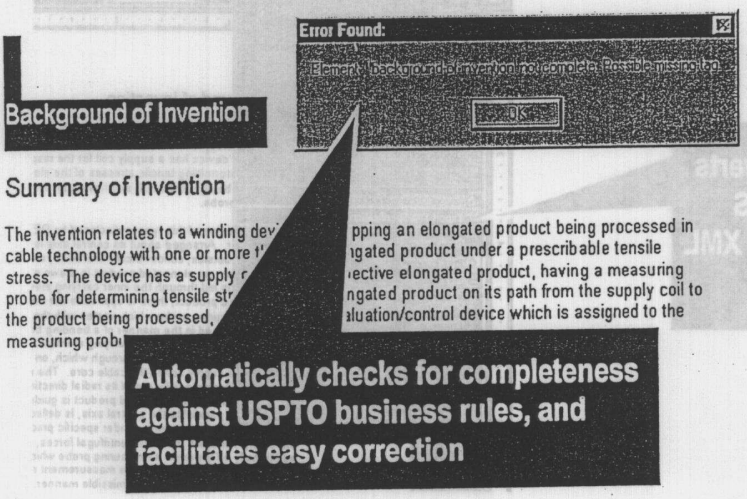
Insert and tag multiple claims automatically

PASAT – Figure Manager Function

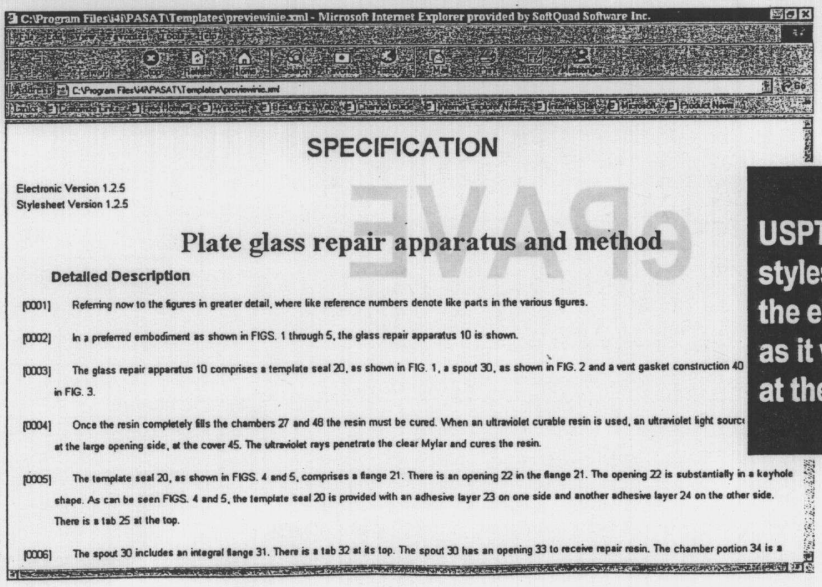


Insert, preview, and arrange drawing images

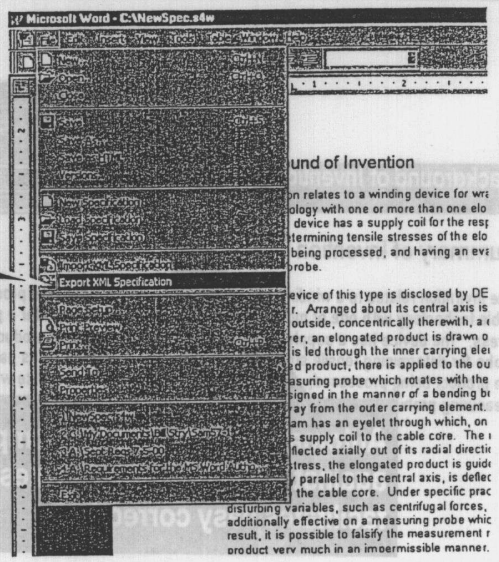
PASAT – Validate Function



PASAT – Preview Specification in Browser



PASAT – Export To XML Function

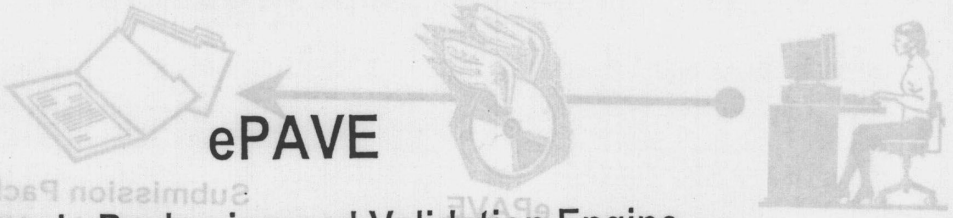


Automatically converts specification to EFS required electronic XML format.

EFS – Software Components

ePAVE

EFS – PASAT Component



ePAVE

Electronic Packaging and Validation Engine

ePAVE

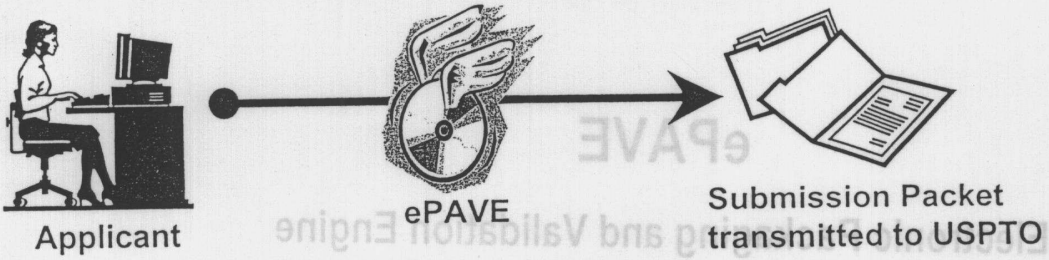
electronic Packaging and Validation Engine

ePAVE Redesign To Comply With ANNEX F

ePAVE 5.1 is the latest version which is a result of a complete "redesign" of all previous versions of ePAVE; beyond the interface redesign, the "backend" processor was redesigned to comply with the international e-filing standards outlined in the Annex F of the Patent Cooperation Treaty (PCT).

For specific standards Please refer to the Annex F Document: http://pcteasy.wipo.int/efiling_standards/schemaDocs/schemaDocs.htm

ePAVE
electronic Packaging and Validation Engine



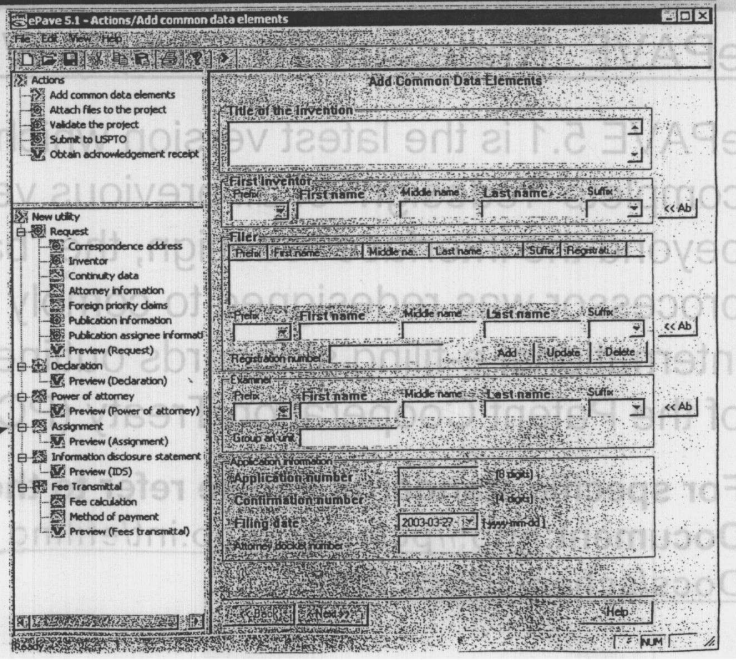
Users will navigate through topic and document specific lists to create application submission documents to be packaged into a Submission Packet for transmission to the USPTO.

ePAVE
electronic Packaging and Validation Engine

ePAVE 5.1 has a new "Look & Feel" GUI is different.

"MS-Windows-Like"

Topics may be selected from a pick-list

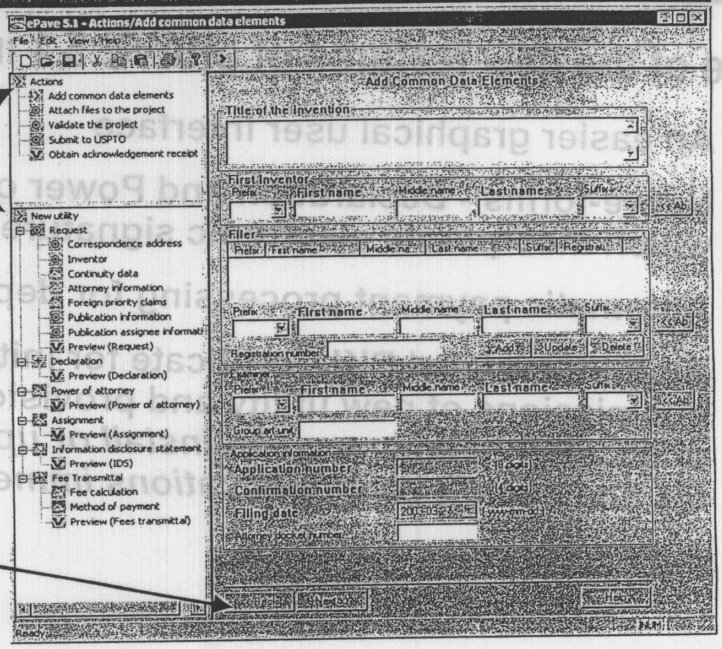


ePAVE
electronic Packaging and Validation Engine

Blue Arrow Icon (on pick-list): >

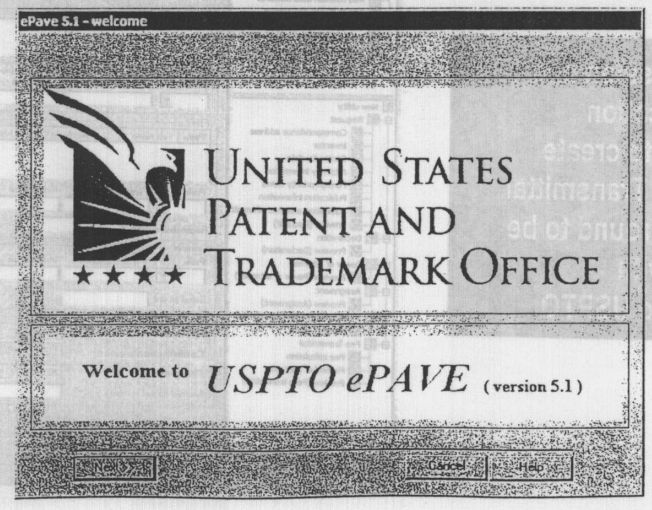
This icon on the pick-list assists users with location 3 types of navigation

- Actions Tree
- Forms Tree
- ePAVE Wizard



EFS – ePAVE Component

ePAVE
electronic Packaging and Validation Engine



ePAVE
electronic Packaging and Validation Engine

Some of the new features of ePAVE 5.1 include:

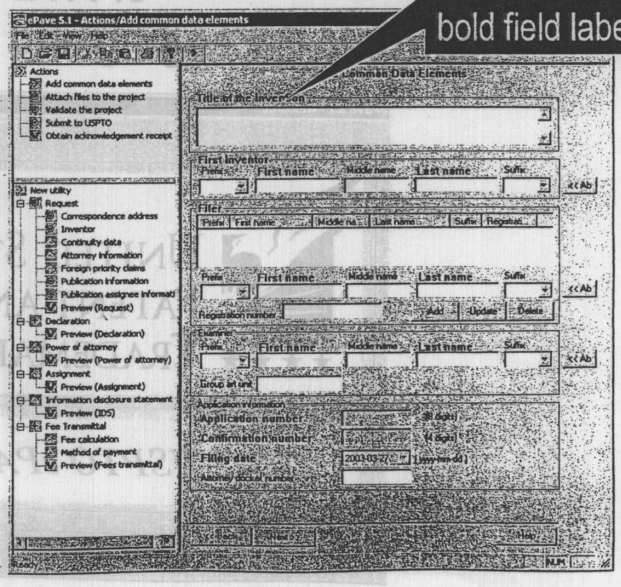
- ✓ An easier graphical user interface
- ✓ New e-forms - Declaration and Power of Attorney which incorporate electronic signatures
- ✓ Automatic payment processing for deposit accounts
- ✓ Built-in low level PKI Certificate for initial submissions of new utility and provisional applications *(now you can install or upgrade ePAVE 5.1 and submit your applications immediately)*

ePAVE
electronic Packaging and Validation Engine

Add Common Data Elements Screen

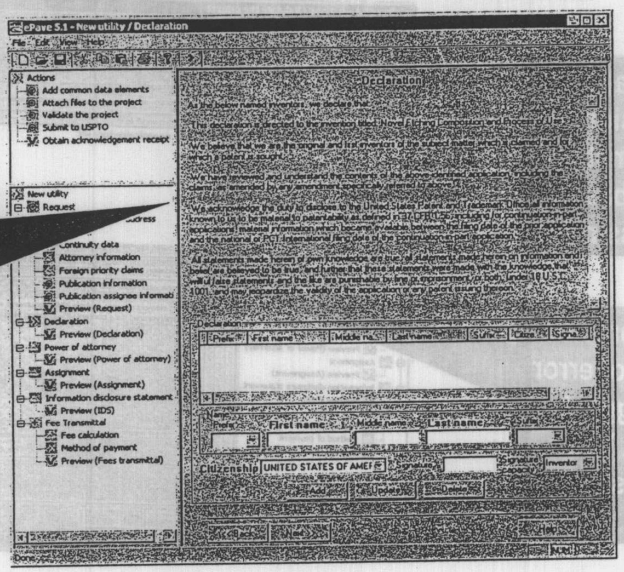
Required information has bold field labels

Enter submission and filer identification information to create XML tagged Transmittal file in background to be submitted with "package" to USPTO



ePAVE
electronic Packaging and Validation Engine

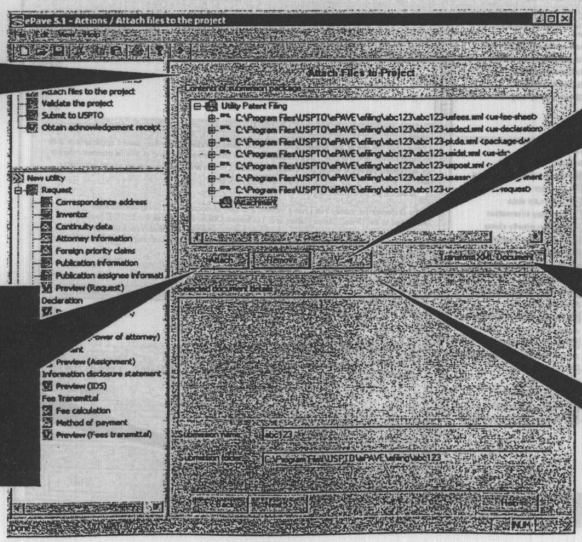
Declaration Screen



The newest version of ePAVE allows customers to create their declaration.

ePAVE
electronic Packaging and Validation Engine

Attach Files to Project Screen



Contents of Submission Box lists all files included in submission package

ATTACH document and image files authored off-line including XML authored application specification and TIFF images

REMOVE button allows electronic filer to remove previously attached file from package

CONVERT PASAT document using XPORT into an "application body".

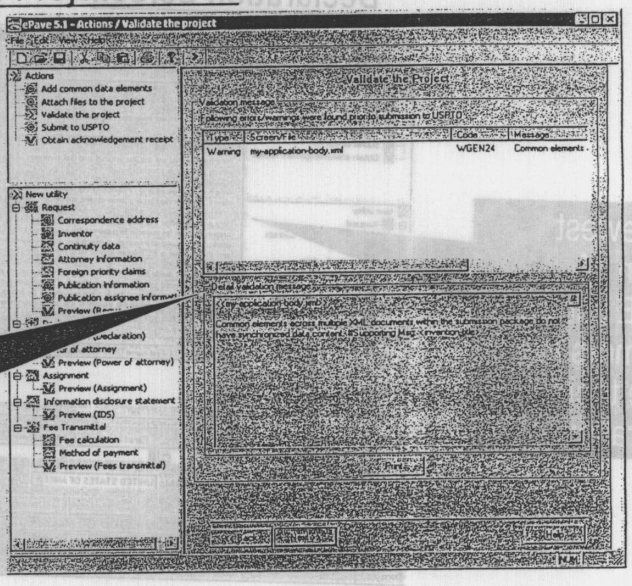
VIEW button allows electronic filer to review submission content

ePAVE
electronic Packaging and Validation Engine

Validate the Project Screen

ePAVE automatically validates submission for presence of information and attachments based on patent business rules

Error messages provide detail about type of error identified and suggest corrective action. You can also print a list of current errors.

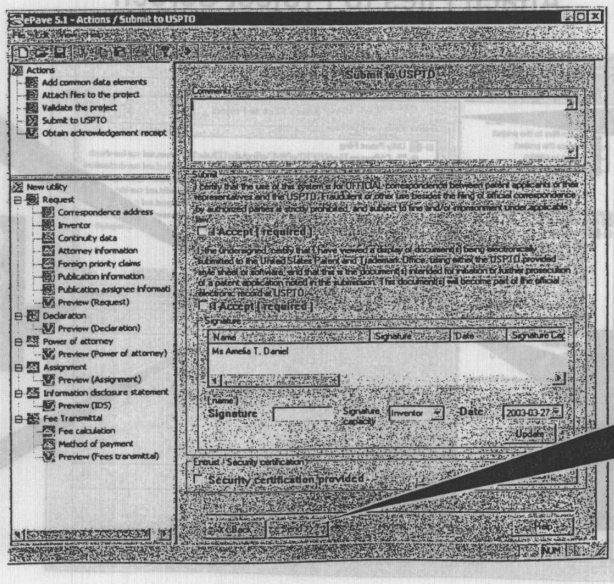


ePAVE
electronic Packaging and Validation Engine

Submit to USPTO Screen

Displays two legal statements with check boxes to certify official use of the system and prior review of electronic documents to be submitted to the USPTO

Initiates upload of submission package to USPTO

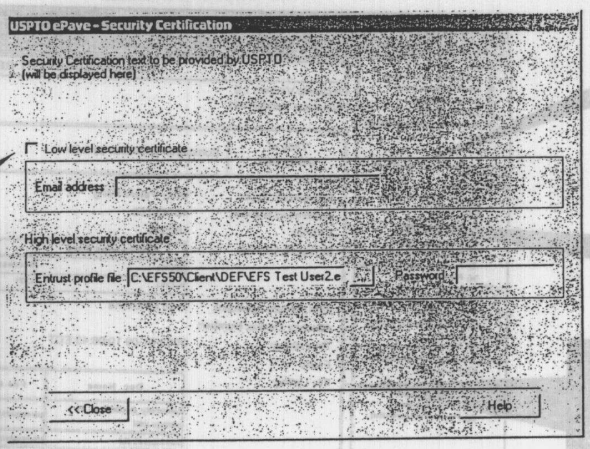


ePAVE
electronic Packaging and Validation Engine

PKI Security

PKI Certificate ensures security of transmission

Built-in low level PKI Certificate - for initial submissions of new utility & provisional applications.



ePAVE
electronic Packaging and Validation Engine

- ePAVE will *automatically* bundle, compress, wrap and securely transmit to the USPTO via the Internet.
- After successful receipt and verification at USPTO, an Acknowledgement Receipt is returned to the electronic filer.

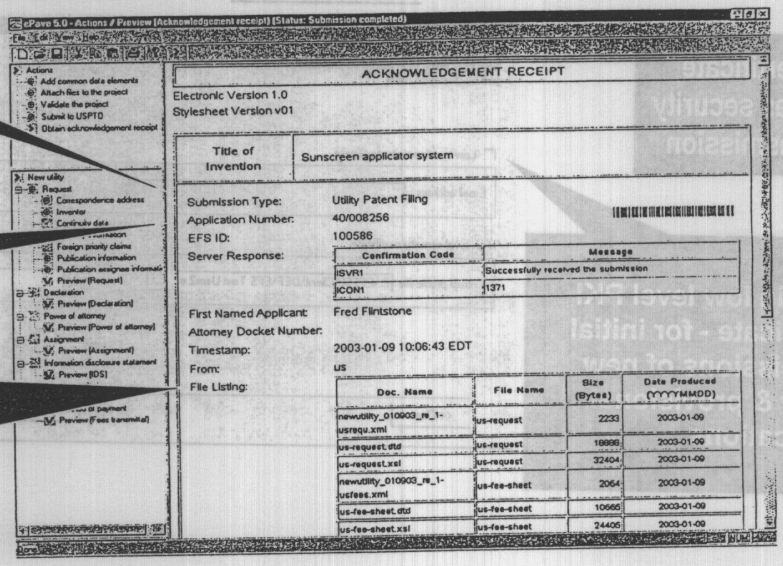
ePAVE
electronic Packaging and Validation Engine

Electronic Acknowledgement Receipt

Identifies the Submission Type

Includes Application Number

EFS Server verifies the contents of the package upon receipt and gives a listing of all files included in the submission



United States Patent and Trademark Office

PAIR

Patent Application Information Retrieval

Patent Application Information Retrieval (PAIR)

- Increased customer access to Patent and Patent Application information
  - Provides direct on-line access to application status and prosecution history
  - Available 24 hours a day, 7 days a week
  - Saves time for customers and allows USPTO to focus on processing patent applications

Patent Application Information Retrieval (PAIR)

Public

- Requires NO PKI software
- Review Patented & Published Application Information
  - Prosecution History
  - Status and Location

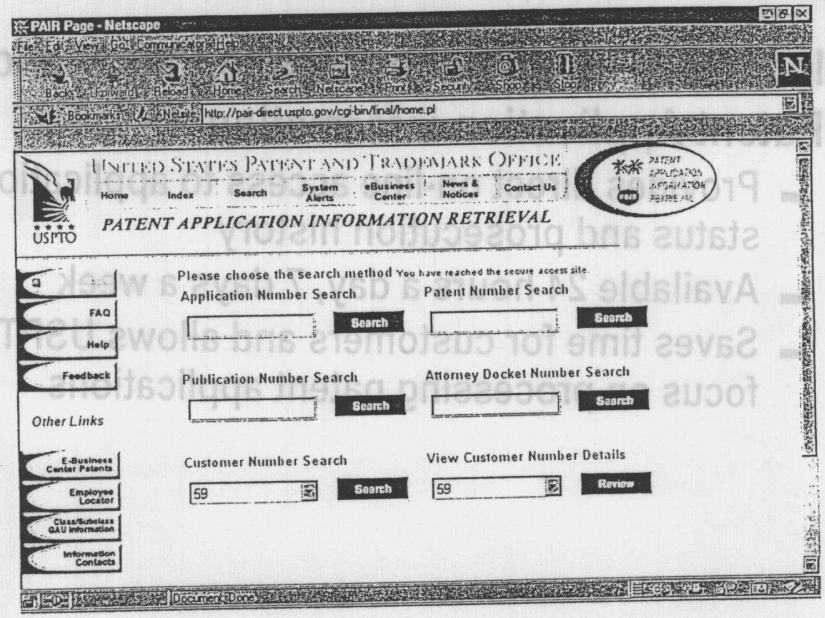
Private

- Requires PKI software
- Requires Customer Number
- Review Pending & Patented Application Information
  - Prosecution History
  - Status and Location
  - Limited Bibliographic Data
  - Application Document Images (June 2003)

Patent Application Information Retrieval (PAIR)

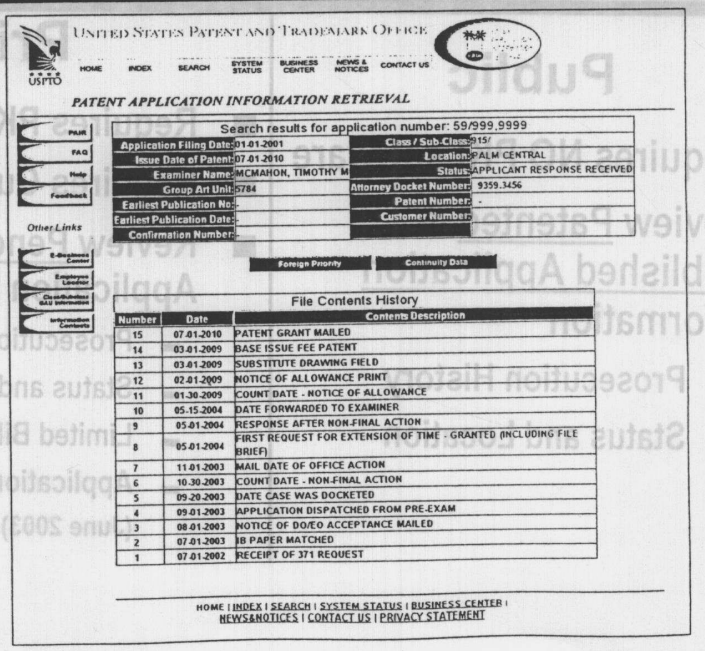
Private PAIR

Requires Customer Number and PKI Certificate



Patent Application Information Retrieval (PAIR)

Application Number Search



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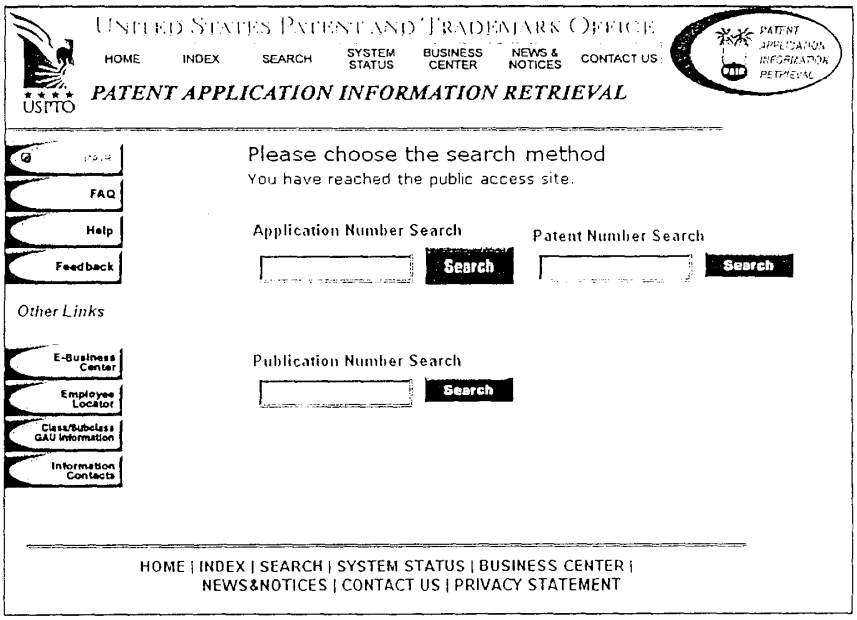

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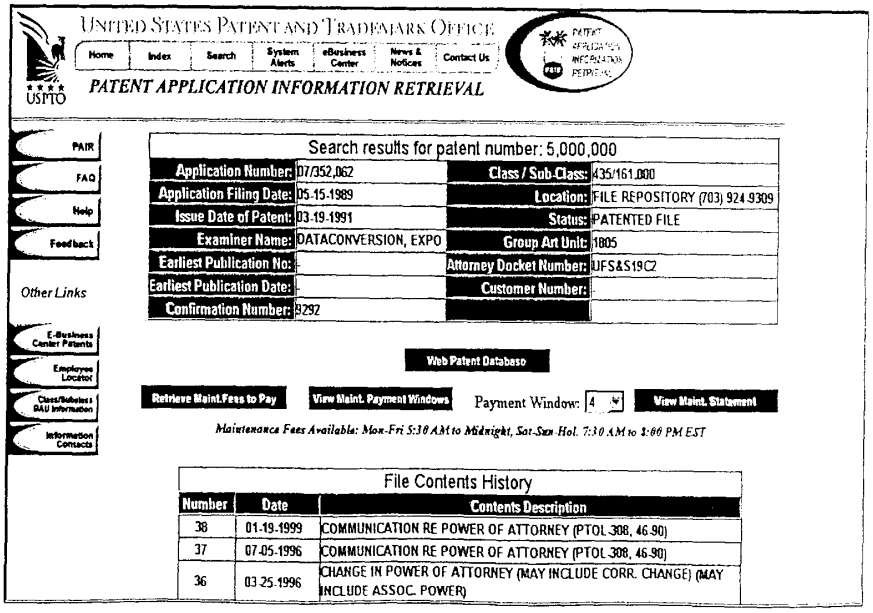
Maintenance Fees

Public/Private PAIR



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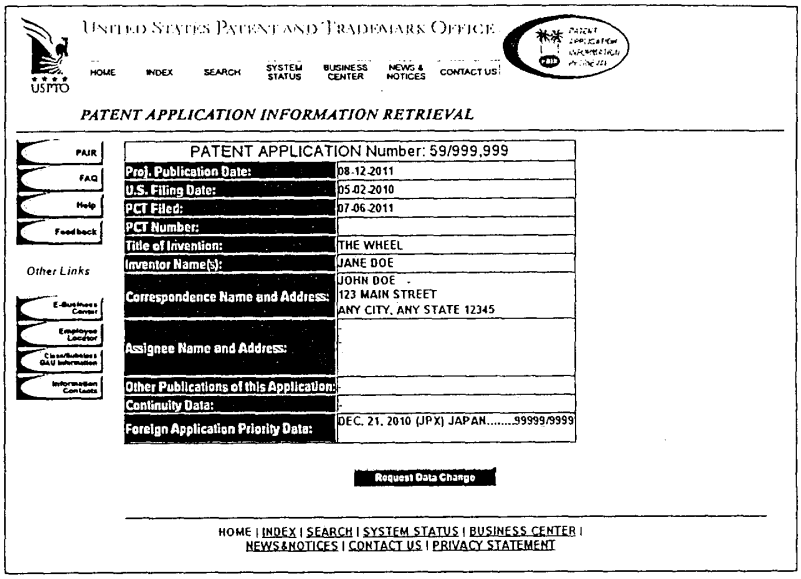
Bibliographic Data Review Screen



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PATENT APPLICATION Number: 59/999,999

Proj. Publication Date:	08-12-2011
U.S. Filing Date:	05-02-2010
PCT Filed:	07-06-2011
PCT Number:	
Title of Invention:	THE WHEEL
Inventor Name(s):	JANE DOE
Correspondence Name and Address:	JOHN DOE 123 MAIN STREET ANY CITY, ANY STATE 12345
Assignee Name and Address:	
Other Publications of this Application:	
Continuity Data:	
Foreign Application Priority Data:	DEC. 21, 2010 (JPX) JAPAN.....99999/9999

Request Data Change

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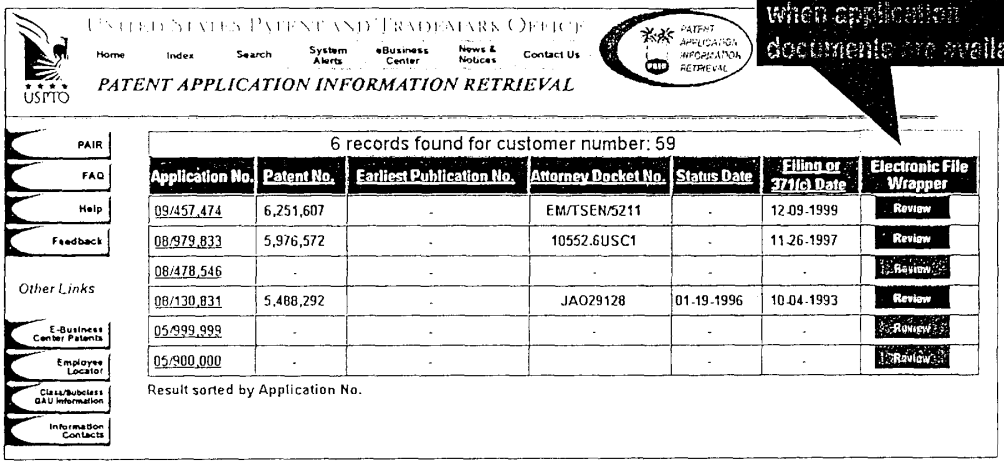

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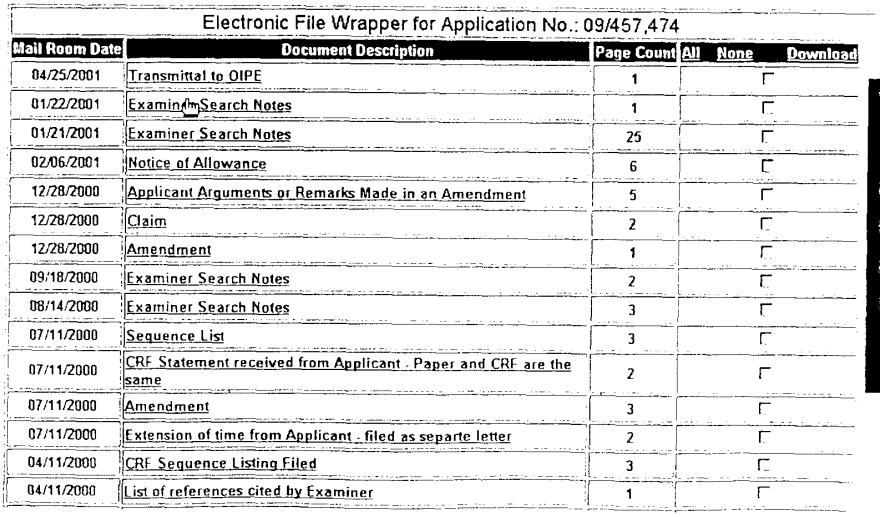

Electronic File Wrapper for Application No.: 09/457,474

Mail Room Date	Document Description	Page Count	All	None	Download
04/25/2001	Transmittal to OIPE	1			☐
01/22/2001	Examiner Search Notes	1			☐
01/21/2001	Examiner Search Notes	25			☐
02/06/2001	Notice of Allowance	6			☐
12/28/2000	Applicant Arguments or Remarks Made in an Amendment	5			☐
12/28/2000	Claim	2			☐
12/28/2000	Amendment	1			☐
09/18/2000	Examiner Search Notes	2			☐
08/14/2000	Examiner Search Notes	3			☐
07/11/2000	Sequence List	3			☐
07/11/2000	CRF Statement received from Applicant - Paper and CRF are the same	2			☐
07/11/2000	Amendment	3			☐
07/11/2000	Extension of time from Applicant - filed as separte letter	2			☐
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04/11/2000	List of references cited by Examiner	1			☐

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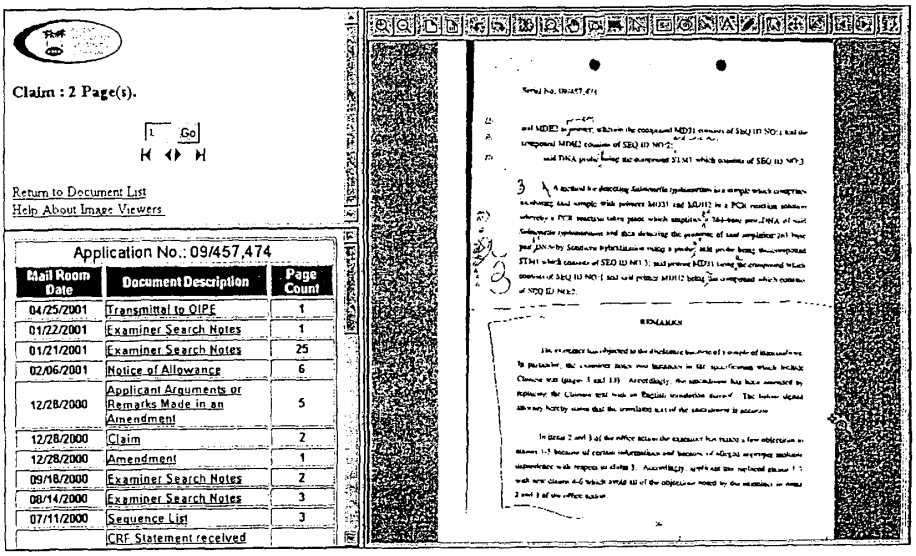

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