

Introduction to the Patent Cooperation Treaty

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International Patent Legal Administration (IPLA)
United States Patent and Trademark Office

April 2015

UNITED STATES
PATENT AND TRADEMARK OFFICE



Objectives

- To understand the structure and function of the Patent Cooperation Treaty (PCT)
 - International and National Stages
- To understand duties and obligations under the Treaty
 - IB (International Bureau)
 - RO (receiving Office)
 - ISA (International Searching Authority)
 - SISA (Supplementary International Searching Authority)
 - IPEA (International Preliminary Examining Authority)
 - DO/EO (Designated Office/Elected Office)



The Patent Cooperation Treaty

- A United Nations Treaty
 - signed June 1970
 - became operational June 1978
 - administered by the International Bureau (IB)
 - of the World Intellectual Property Organization (WIPO) in Geneva, Switzerland



International Patent?

- An international application (IA) is filed under the PCT but...
 - there is no “international patent”
 - the PCT functions as a patent application filing system
 - the IA must still be prosecuted
 - in each national or regional office where patent protection is desired



PCT Benefits for Applicants

- Simplifies the process of filing foreign applications
 - one set of formality requirements
 - establishes a filing date in all PCT Contracting States
- Postpones costs
 - for filing in the national/regional offices
 - translation fees, filing fees, attorney fees
- Provides
 - an early indication of prior art and
 - a written opinion as to the novelty, inventive step and industrial applicability of the claimed invention
- Gives extra time for assessment of commercial viability in designated States



PCT Benefits for Offices

- Provides every regional and national patent Office, where protection is sought, the benefit of
 - an International Search Report (ISR) and
 - Written Opinion of the International Searching Authority (WOISA)
 - *optionally*, a Supplementary International Search Report (SISR)
 - by a Supplementary International Searching Authority
 - *optionally*, an International Preliminary Report on Patentability (Chapter II) – IPRP (CH II)
 - by an International Preliminary Examining Authority (IPEA)



PCT Contracting State

- A country which is a signatory to the PCT
- Eighteen (18) Contracting States in 1978
- Currently 148 Contracting States

PCT Contracting States

AE United Arab Emirates	CR Costa Rica	IN India	ML Mali (OA) ²	SI Slovenia (EP) ²
AG Antigua and Barbuda	CU Cuba	IR Islamic Republic of Iran	MN Mongolia	SK Slovakia (EP)
AL Albania (EP)	CY Cyprus (EP) ²	IS Iceland (EP)	MR Mauritania (OA) ²	SL Sierra Leone (AP)
AM Armenia (EA)	CZ Czech Republic (EP)	IT Italy (EP) ²	MT Malta (EP) ²	SM San Marino (EP)
AO Angola	DE Germany (EP)	JP Japan	MW Malawi (AP)	SN Senegal (OA) ²
AT Austria (EP)	DK Denmark (EP)	KE Kenya (AP)	MX Mexico	ST Sao Tome and Principe
AU Australia	DM Dominica	KG Kyrgyzstan (EA)	MY Malaysia	SV El Salvador
AZ Azerbaijan (EA)	DO Dominican Republic	KM Comoros (OA) ^{2,3}	MZ Mozambique (AP)	SY Syrian Arab Republic
BA Bosnia and Herzegovina ¹	DZ Algeria	KN Saint Kitts and Nevis	NA Namibia (AP)	SZ Swaziland (AP) ²
BB Barbados	EC Ecuador	KP Democratic People's Republic of Korea	NE Niger (OA) ²	TD Chad (OA) ²
BE Belgium (EP) ²	EE Estonia (EP)	KR Republic of Korea	NG Nigeria	TG Togo (OA) ²
BF Burkina Faso (OA) ²	EG Egypt	KZ Kazakhstan (EA)	NI Nicaragua	TH Thailand
BG Bulgaria (EP)	ES Spain (EP)	LA Lao People's Democratic Republic	NL Netherlands (EP) ²	TJ Tajikistan (EA)
BH Bahrain	FI Finland (EP)	LC Saint Lucia	NO Norway (EP)	TM Turkmenistan (EA)
BJ Benin (OA) ²	FR France (EP) ²	LI Liechtenstein (EP)	NZ New Zealand	TN Tunisia
BN Brunei Darussalam	GA Gabon (OA) ²	LK Sri Lanka	OM Oman	TR Turkey (EP)
BR Brazil	GB United Kingdom (EP)	LR Liberia (AP)	PA Panama	TT Trinidad and Tobago
BR Botswana (AP)	GD Grenada	LS Lesotho (AP)	PE Peru	TZ United Republic of Tanzania (AP)
BY Belarus (EA)	GE Georgia	LT Lithuania (EP)	PG Papua New Guinea	UA Ukraine
BZ Belize	GH Ghana (AP)	LU Luxembourg (EP)	PH Philippines	UG Uganda (AP)
CA Canada	GM Gambia (AP)	LV Latvia (EP) ²	PL Poland (EP)	US United States of America
CF Central African Republic (OA) ²	GN Guinea (OA) ²	LY Libya	PT Portugal (EP)	UZ Uzbekistan
CG Congo (OA) ²	GQ Equatorial Guinea (OA) ²	MA Morocco	QA Qatar	VC Saint Vincent and the Grenadines
CH Switzerland (EP)	GR Greece (EP) ²	MC Monaco (EP) ²	RO Romania (EP)	VN Viet Nam
CI Côte d'Ivoire (OA) ²	GT Guatemala	MD Republic of Moldova ⁴	RS Serbia (EP)	ZA South Africa
CL Chile	GW Guinea-Bissau (OA) ²	ME Montenegro ¹	RU Russian Federation (EA)	ZM Zambia (AP)
CM Cameroon (OA) ²	HN Honduras	MG Madagascar	RW Rwanda (AP) ⁵	ZW Zimbabwe (AP)
CN China	HR Croatia (EP)	MK The former Yugoslav Republic of Macedonia (EP)	SA Saudi Arabia	
CO Colombia	HU Hungary (EP)		SC Seychelles	
	ID Indonesia		SD Sudan (AP)	
	IE Ireland (EP) ²		SE Sweden (EP)	
	IL Israel		SG Singapore	

1 Extension of European patent possible.

2 May only be designated for a regional patent (the "national route" via the PCT has been closed).

3 Only international applications filed on or after 25 May 2013 include the designation of this State for an OAPI patent. For international applications filed before that date, extension of OAPI patent possible.

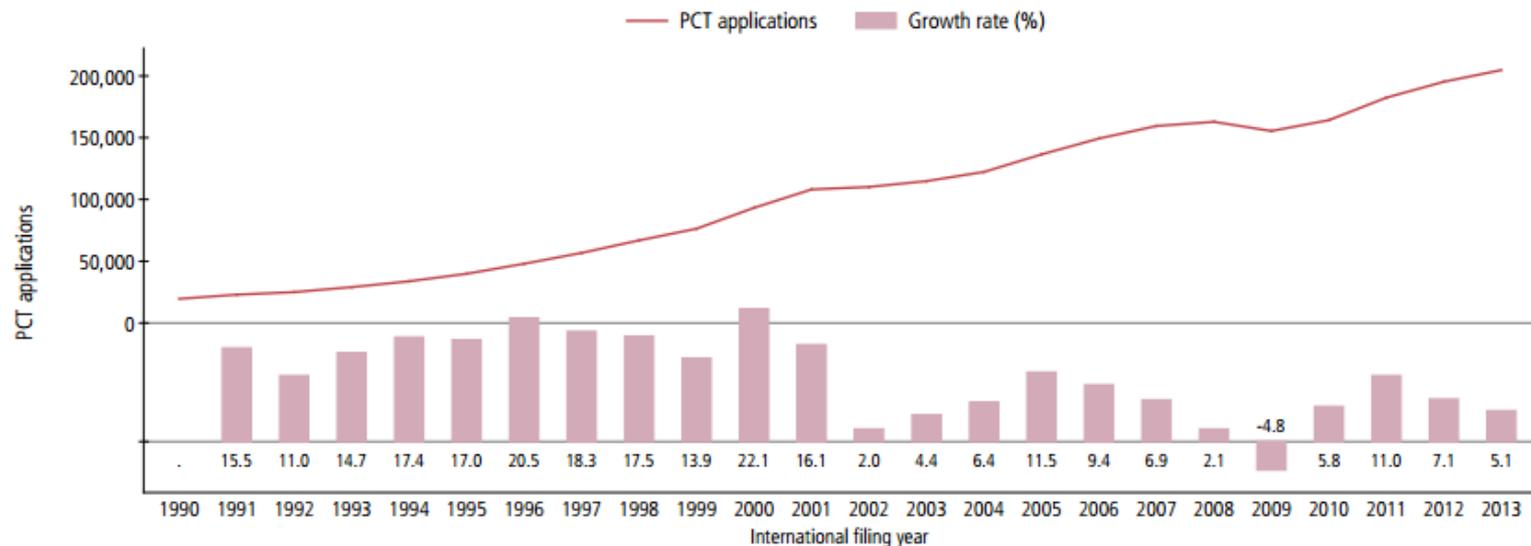
4 Only international applications filed before 26 April 2012 include the designation of this State for a Eurasian patent.

5 Only international applications filed on or after 24 September 2011 include the designation of this State for an ARIPO patent.

Where a State can be designated for a regional patent, the two-letter code for the regional patent concerned is indicated in parentheses (AP = ARIPO patent, EA = Eurasian patent, EP = European patent, OA = OAPI patent).

International Applications Filed

Figure A.1.1: Trend in PCT applications

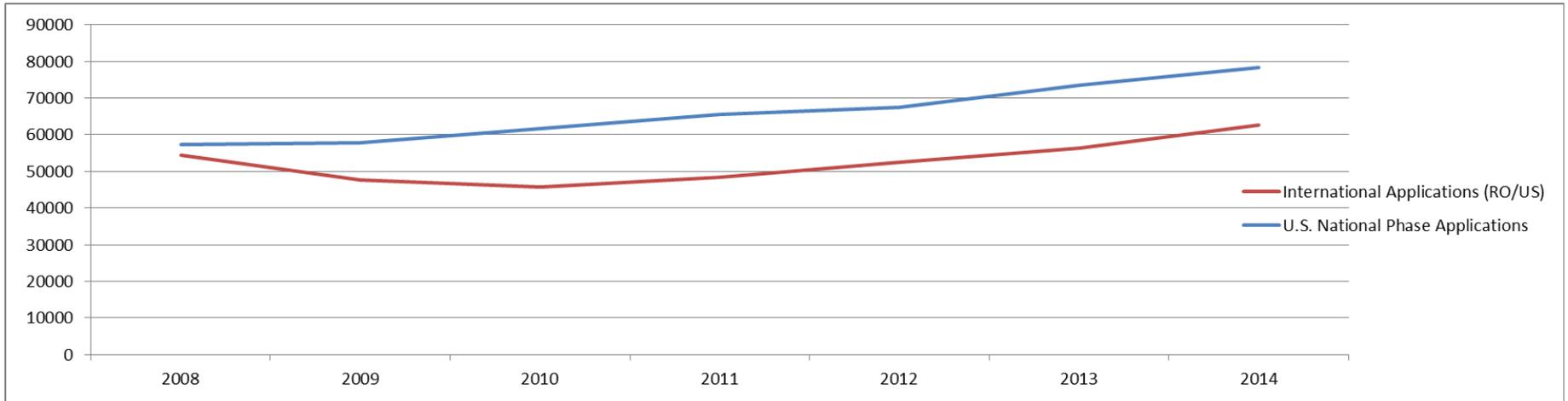


Note: Data for 2013 are WIPO estimates.

Source: WIPO statistics database, March 2014

- In 2013, estimated 205,300 PCT international applications were filed
 - 57,793 filed in US (28.1% of total PCT filings)
- Since the inception of the PCT system, over 2.5 million international applications have been filed worldwide

Applications Filed at USPTO



Fiscal Year	2008	2009	2010	2011	2012	2013	2014
International Applications (RO/US)	54488	47572	45701	48285	52417	56226	62697
U.S. National Phase Applications	57345	57879	61587	65463	67573	73488	78213

- In 2014, PCT Filings in RO/US increased 11.5% from 2013
- National phase application filing increased 6.4%

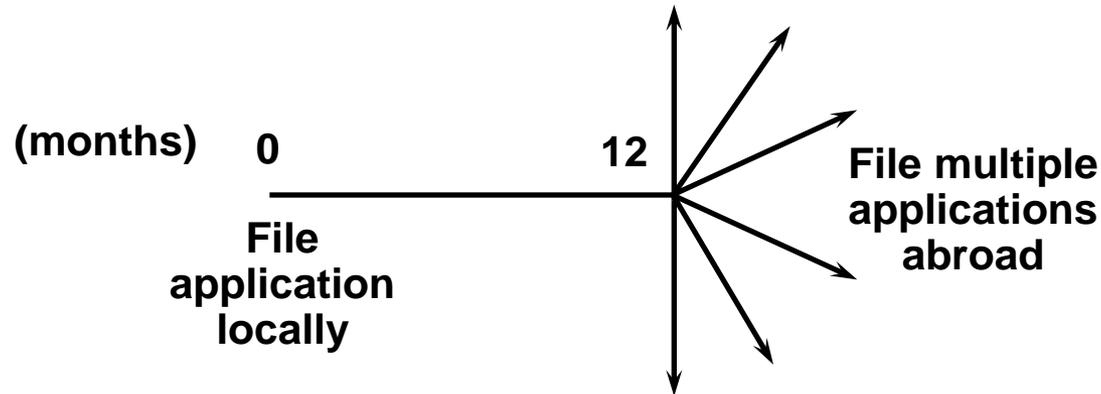


The International Application

- A single application
 - filed together with a Request
 - by a resident/national of a PCT Contracting State
 - filed in one language
 - filed in one patent Office
 - the receiving Office (RO)
 - usually the applicant's home patent Office
 - treated as a national application
 - in each designated State as of the international filing date
- Formalities in compliance with the PCT
 - must be accepted during national phase



Paris Convention Filing Timeline



- Local patent application filed first
 - multiple foreign applications filed at 12 months, claiming priority under the Paris Convention
 - multiple formality requirements
 - multiple prosecutions of applications
 - translations and national/regional fees required at 12 months

PCT Filing Timeline



- Local patent application filed first
 - single international application filed at 12 months, claiming priority under the Paris Convention
 - one set of formalities requirements
 - one international phase prosecution
 - translations and national/regional fees and prosecution not required until 30 months



Two Phases of the PCT

- International phase
 - Chapter I (mandatory)
 - Chapter II (optional)
- National phase (stage)

Chapter I

Chapter I - Filing and Searching

- International application is
 - filed in a receiving Office (RO)
 - searched by an International Searching Authority (ISA)
- Documents issued
 - International Search Report (Form PCT/ISA/210)
 - rarely, Declaration of Non-Establishment of ISR (Form PCT/ISA/203)
 - Written Opinion of the ISA (Form PCT/ISA/237)
 - reissued as IPRP (Chapter I) at 30 months (Form PCT/IB/373)
 - *optional* - Supplementary International Search Report (SISR - Form PCT/SISA/501)



Chapter I - Amendment and Publication

- *Optional* amendment to claims only, by applicant
 - filed directly with the IB under PCT Article 19
 - complete set of claims
 - within 2 months of ISR mailing date
- Publication of international application by the IB
 - with ISR and Article 19 amendments, if any
 - available on IB web site – PATENTSCOPE
- Written Opinion of the ISA
 - made available to public by the IB when publication occurs
 - along with any informal comments filed by the applicant

International Searching Authority (ISA)

- Each PCT Contracting State reaches agreement
 - with one/more ISA(s) to search international applications filed in its receiving Office
- Applicants who are U.S. residents or nationals
 - filing in the RO/US or RO/IB can select as ISA
 - USPTO
 - European Patent Office (EPO)
 - Korean Intellectual Property Office (KIPO)
 - Australian Patent Office (IPAU)
 - Russian Federation (Rospatent)
 - Israel Patent Office (ILPO)
- USPTO acts as ISA for international applications filed in certain other receiving Offices



International Searching and Preliminary Examining Authorities

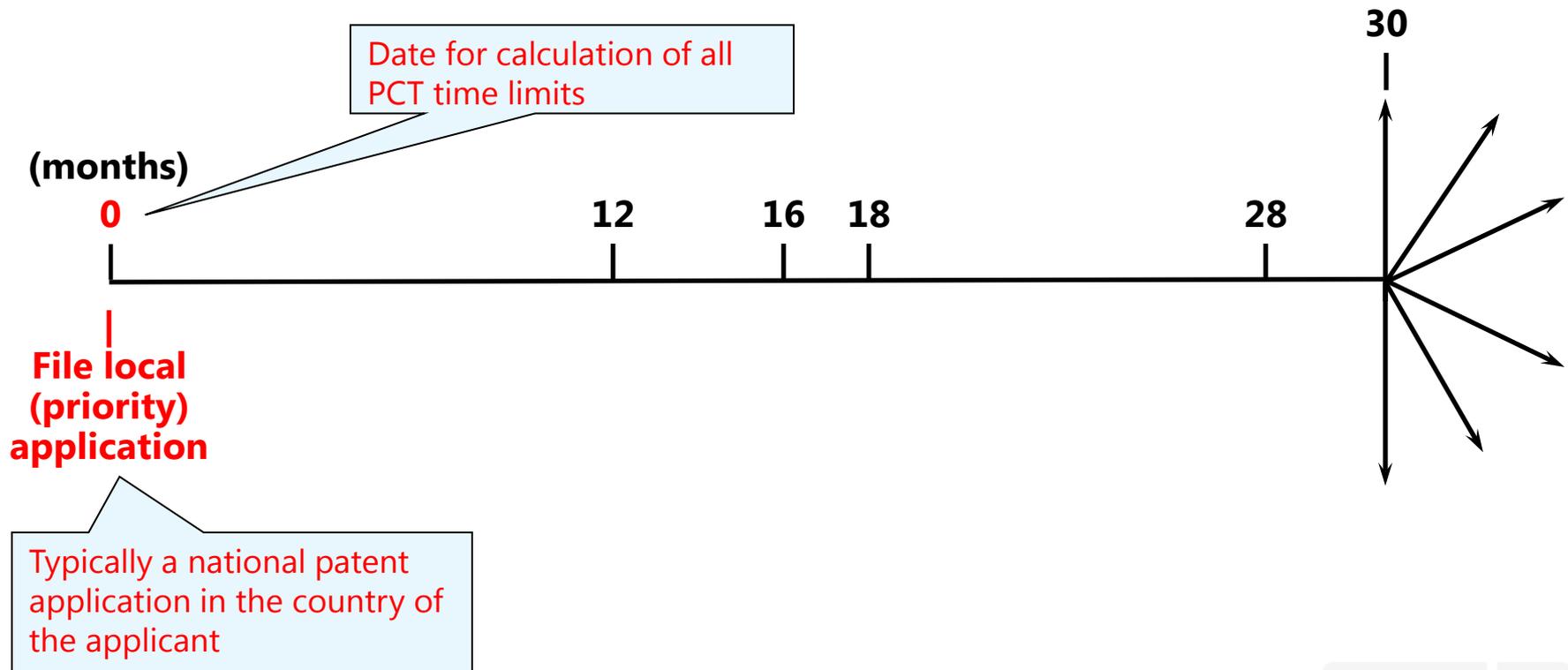
- AT Austria
- AU Australia
- BR Brazil
- CA Canada
- CL Chile
- CN China
- EG Egypt
- EP EPO
- ES Spain
- UK Ukraine*
- SG Singapore*
- FI Finland
- IL Israel
- IN India
- JP Japan
- KR Republic of Korea
- RU Russian Federation
- SE Sweden
- US United States
- XN Nordic Patent Institute
- CL Chile

*Has not yet commenced operations



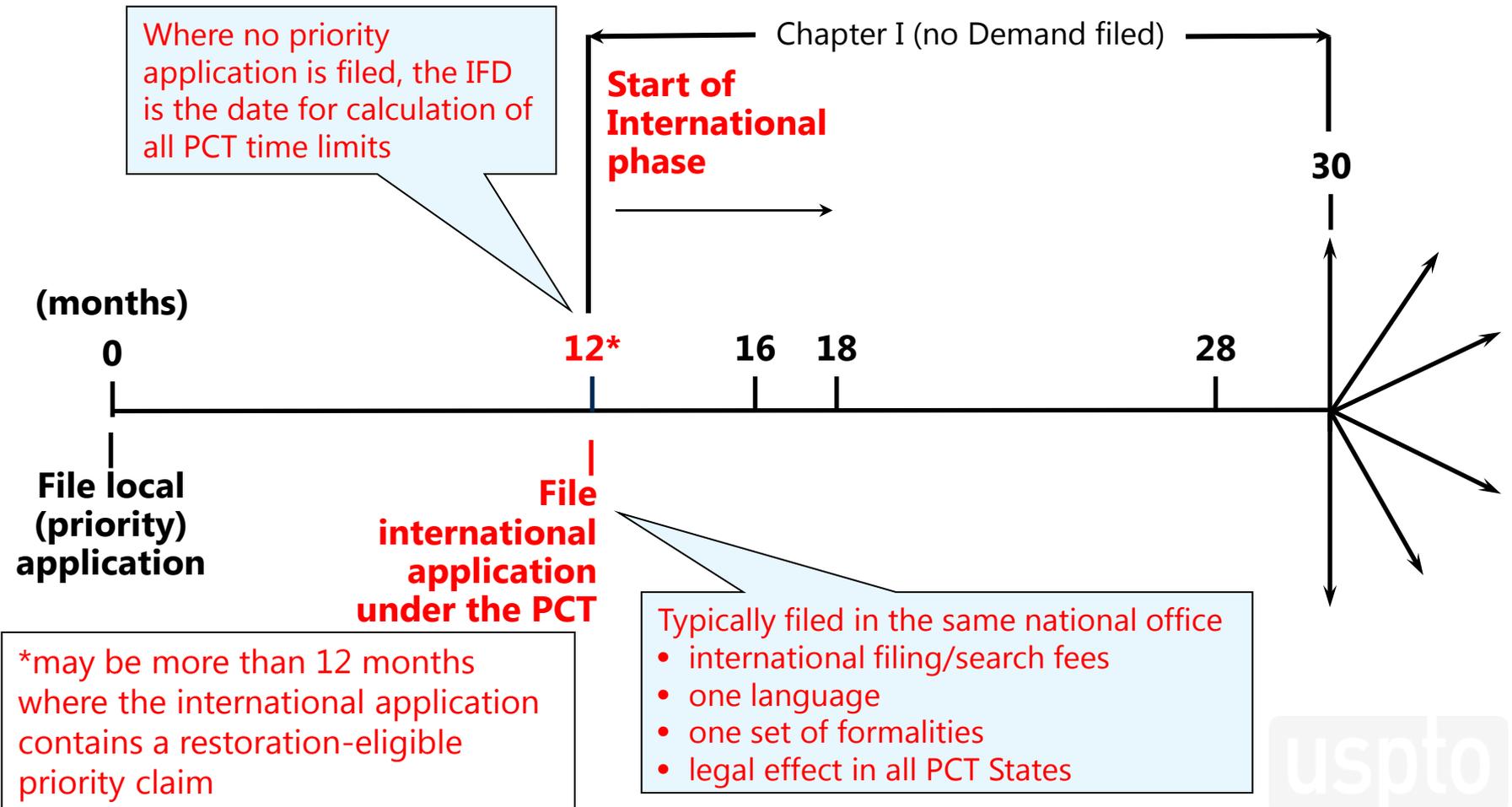
PCT System

Priority Application Filed



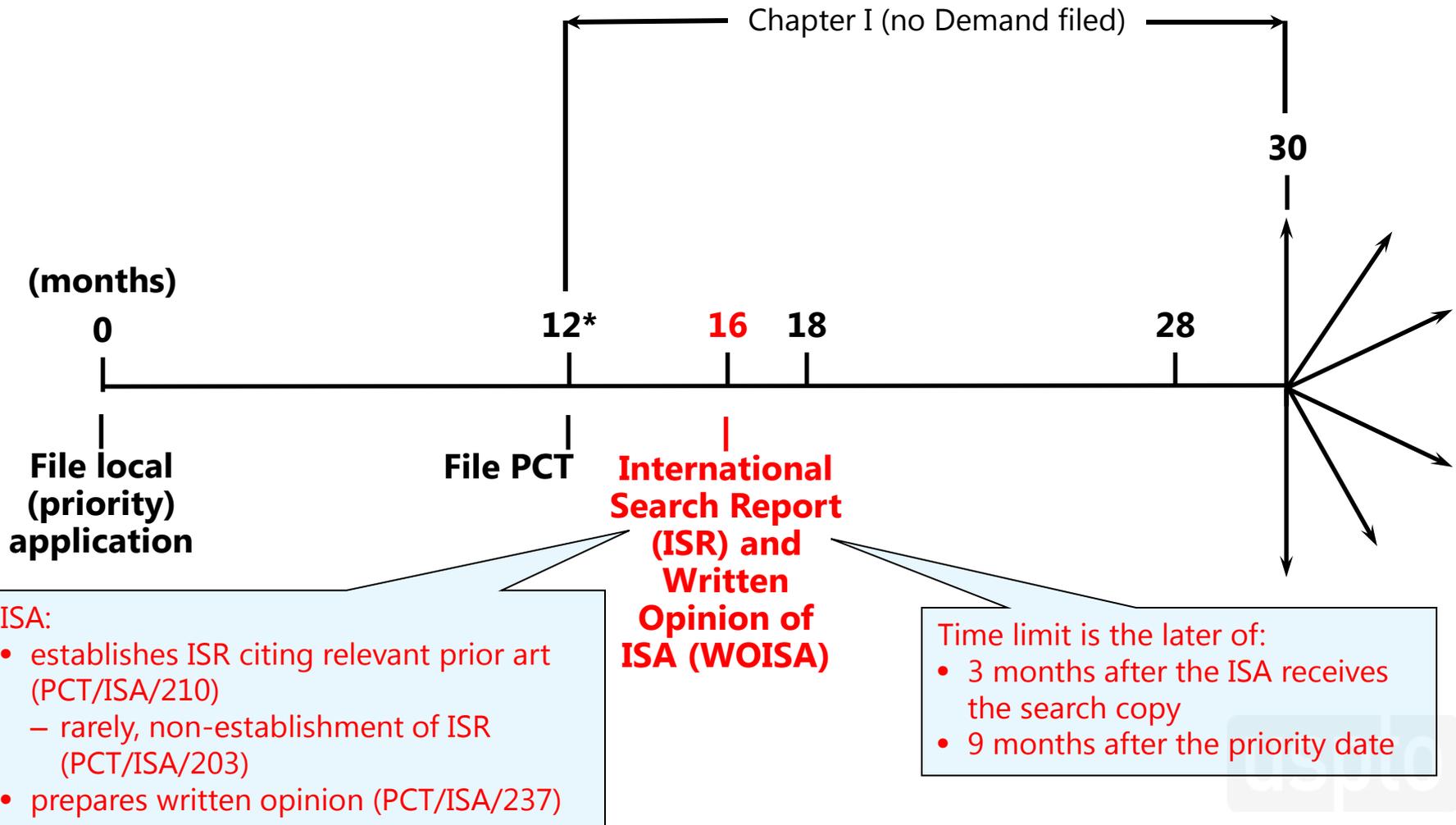
PCT System – Chapter I

International Application Filed



PCT System – Chapter I

ISR and WOISA Issued



International Search Report

Form PCT/ISA/210
(second sheet)

Documents
Considered to be
Relevant

uspto

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - G06Q 50/00 (2010.01) USPC - 705/3 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) USPC: 705/3 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched 705/ 1, 2; 700/1, 90 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) USPTO WEST (PGPB, USPT, EPAB, JPAB); Google Search Terms Used: patient, medical, record, identifier, information, allergy, reaction, graphic, visual, display, print, update, barcode, scanner, access, retrieve, procedure, locate, drug		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----	US 2007/0125844 A1 (LIBIN et al.) 07 June 2007 (07.06.2007), entire document, especially para [0002]-[0003], [0005], [0015]-[0017], [0021]-[0025], [0030], [0036] and abstract	1-2, 4-5, 7-15, 17-18, 20-22
Y		3, 6, 16, 19
Y	US 2005/0222873 A1 (NEPHIN et al.) 08 October 2005 (06.10.2005), entire document, especially para [0102], [0223]-[0227]	3, 6, 16, 19
A	US 2009/0043611 A1 (NADAS et al.) 12 February 2009 (12.02.2009)	1-22
A	US 2005/0086071 A1 (FOX et al.) 21 April 2005 (21.04.2005)	1-22
A	US 2008/0149701 A1 (LANE) 26 June 2008 (26.06.2008)	1-22
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p>		
Date of the actual completion of the international search 30 March 2010 (30.03.2010)	Date of mailing of the international search report 14 APR 2010	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774	

International Search Report

Cited Documents (References)

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---- Y	US 2007/0125844 A1 (LIBIN et al.) 07 June 2007 (07.06.2007), entire document, especially para [0002]-[0003], [0005], [0015]-[0017], [0021]-[0025], [0030], [0036] and abstract	1-2, 4-5, 7-15, 17-18, 20-22 ----- 3, 6, 16, 19
Y	US 2005/0222873 A1 (NEPHIN et al.) 06 October 2005 (06.10.2005), entire document, especially para [0102], [0223]-[0227]	3, 6, 16, 19
A	US 2009/0043611 A1 (NADAS et al.) 12 February 2009 (12.02.2009)	1-22
A	US 2005/0086071 A1 (FOX et al.) 21 April 2005 (21.04.2005)	1-22
A	US 2008/0149701 A1 (LANE) 26 June 2008 (26.06.2008)	1-22

Document Categories

Document Citations & Relevant Passages

Three Main Categories of Prior Art in an ISR

- “X” document
 - Claimed invention lacks
 - novelty or
 - inventive step when considered alone (lacks inventive step = obvious)
- “Y” documents
 - Claimed invention lacks inventive step
 - when two or more documents are used in combination
- “A” document
 - General state of the art reference



Three Additional Categories of Prior Art in an ISR

- "P" document
 - intervening reference
 - published on or after the priority date but before the IFD
 - listed as "X,P" or "Y,P" or "A,P"
- "O" document
 - non-written disclosure
 - published after the IFD
 - describes earlier oral disclosure
 - listed as "X,O" or "Y,O" or "A,O"
- "E" document
 - U.S. or foreign patent or patent application published on or after the IFD but having a filing or priority date prior to the IFD
 - listed as "X,E" or "Y,E" or "A,E"



From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: SCOTT M. MILLER
MCDONNELL BOEHNEN HULBERT &
BERGHOFF LLP
300 SOUTH WACKER DRIVE, SUITE 3100
CHICAGO, IL 60606

Date of mailing
(day/month/year) **1 4 SEP 2011**

Applicant's or agent's file reference
10-788-WO

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US 11/40256

International filing date (day/month/year)
14 June 2011 (14.06.2011)

Priority date (day/month/year)
14 July 2010 (14.07.2010)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06Q 40/00 (2011.01)
USPC - 705/37

Applicant **TRADING TECHNOLOGIES INTERNATIONAL, INC.**

Written Opinion of the ISA Cover Sheet

Form PCT/ISA/237
(cover sheet)

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Contents of the WOISA

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Date of completion of this opinion 05 September 2011 (05.09.2011)	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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Written Opinion of the ISA

Basis of this Opinion

Form PCT/ISA/237
Box No. I

- Basis of this opinion
 - application as filed
 - translated
 - rectified
 - no amendments
 - in contrast to CH II

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY		International application No. PCT/US 11/40256
Box No. I	Basis of this opinion	
1.	With regard to the language, this opinion has been established on the basis of: <input checked="" type="checkbox"/> the international application in the language in which it was filed. <input type="checkbox"/> a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).	
2.	<input type="checkbox"/> This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))	
3.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished: a. (means) <input type="checkbox"/> on paper <input type="checkbox"/> in electronic form b. (time) <input type="checkbox"/> in the international application as filed <input type="checkbox"/> together with the international application in electronic form <input type="checkbox"/> subsequently to this Authority for the purposes of search	
4.	<input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.	
5.	Additional comments:	

Form PCT/ISA/237 (Box No. I) (July 2011)

WOISA Reasoned Statement

Form PCT/ISA/237
Box No. V

Citations and explanations on novelty, inventive step and industrial applicability of the claimed invention



Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement	Novelty (N)	Claims	4-5, 11-12, 15-16, 18-19	YES
		Claims	1-3, 6-10, 13-14, 17, 20	NO
Inventive step (IS)		Claims	None	YES
		Claims	1-20	NO
Industrial applicability (IA)		Claims	1-20	YES
		Claims	None	NO

2. Citations and explanations:
Claims 1-3, 6-10, 13-14, 17, and 20 lack novelty under PCT Article 33(2) as being anticipated by US 2003/0004859 A1 to Shaw et al. (hereinafter 'Shaw').

Regarding claims 1 and 14, Shaw teaches a method, and computer readable medium, for smart matching electronic orders for a tradeable object, comprising: comparing a new working order to at least one pending order prior to submitting the new working order to an electronic exchange for trading, where the new working order is for a first quantity for a tradeable object and the pending order is for a second quantity for the tradeable object, the new working order and the at least one pending order derived from at least one common trading strategy of one or more traders (a system automatically pairs users who have similarly entered counter-side transactional interest indications in the same item, where a secure station stores user data and transaction data in the form of multiple prospective transaction entries received from the user terminals, each entry including a fungible item indication and a transaction side indication identifying one of two opposing transaction sides, and where a search component is operatively coupled to the memory and adapted to perform a comparison of the stored entries with respect to the fungible item indications and the transaction side indications, and, based on that comparison, the search component selects sets of two or more stored entries as matching entries having the same fungible item indication and together including transaction side indications identifying the opposing transaction sides, para [0018], [0027], [0029], [0143]); in response to comparing, determining that the new working order and the at least one pending order are contra orders and have a common price (counter, or contra, side transactions are identified, para [0018], [0027], [0029]); matching at least a portion of the first quantity of the new working order and at least a portion of the second quantity of the pending order (the contra-side orders are matched, para [0018], [0027], [0029]); and reporting a match of the working order and the pending order (the transaction is reported, para [0174]).

Regarding claim 2, Shaw teaches where matching comprises matching the first quantity of the new working order and at least a portion of the second quantity of the pending order via the computing device (a set of matching entries is realized if the members of the potential set include at least one entry on each side of the transaction, para [0027], [0029]).

Regarding claim 3, Shaw teaches reporting a match of the first quantity of the new working order (a particular transaction is reported, para [0174]).

Regarding claims 6 and 17, Shaw teaches submitting a message to the electronic exchange to delete the at least a portion of the second quantity (personalized user page allows users to enter, modify, monitor, and delete indications of transaction interest, para [0082], [0091], [0097], [0101]).

Regarding claim 7, Shaw teaches sending a cancel/replace message to the electronic exchange to cancel and replace the pending order with a new pending order (personalized user page allows users to enter, modify, monitor, and delete indications of transaction interest, para [0082], [0091], [0097], [0101]).

Regarding claim 8, Shaw teaches where the new pending order comprises a remainder of the second quantity not matched with the new working order (the remainder of shares not within a single transaction are apportioned among several parties, para [0161]).

Regarding claim 9, Shaw teaches where matching comprises matching at least a portion the first quantity of the new working order and the second quantity of the pending order (the proposed buy and sell orders are matched, para [0027], [0029], [0079], [0161], [0190]).

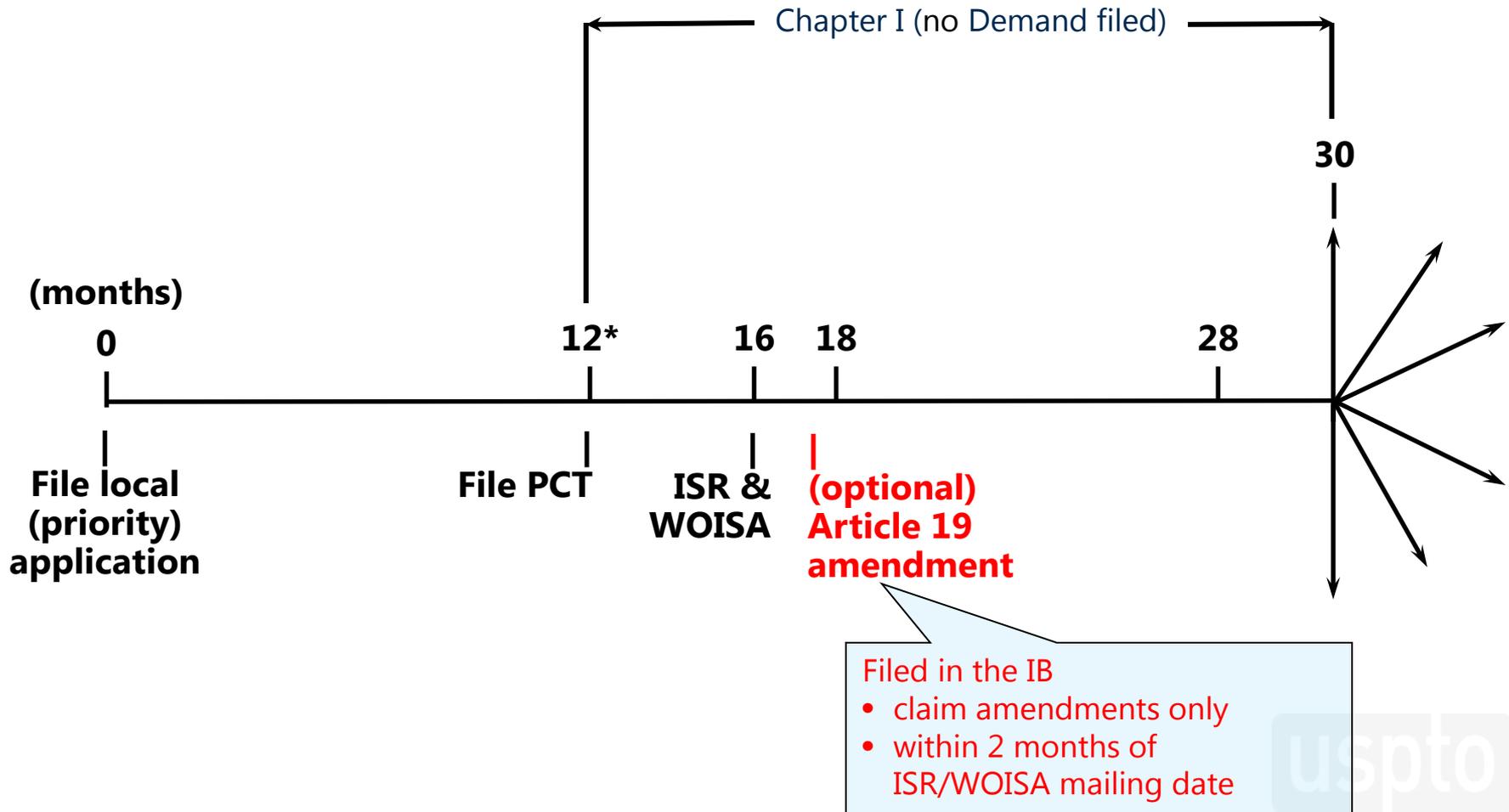
Regarding claim 10, Shaw teaches reporting a match of the second quantity of the pending order (the transaction is reported, para [0174]).

Regarding claim 13, Shaw teaches where the new working order comprises an outright order (buy and sell orders, para [0079], [0190]).

--CONTINUED IN SUPPLEMENTAL BOX--

PCT System – Chapter I

Article 19 Amendment Filed

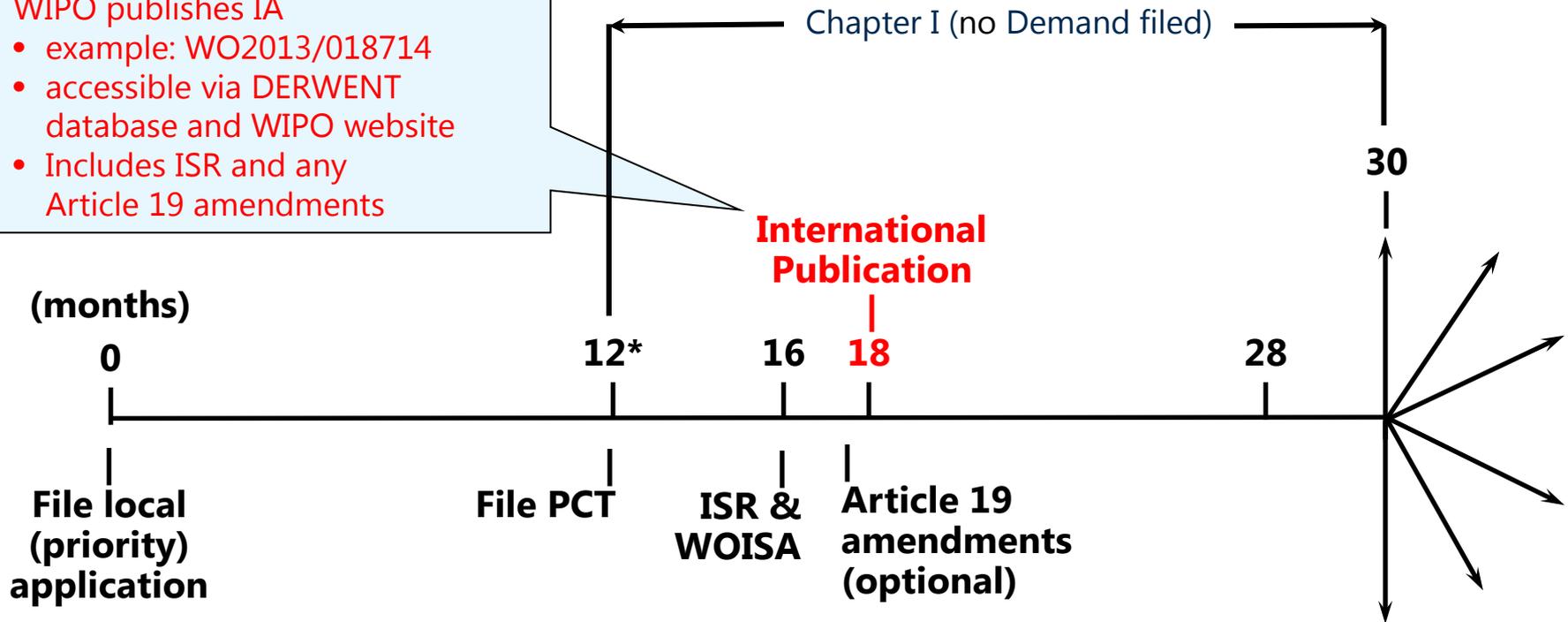


PCT System – Chapter I

International Application Publication

WIPO publishes IA

- example: WO2013/018714
- accessible via DERWENT database and WIPO website
- Includes ISR and any Article 19 amendments





- (51) 国際特許分類:
B22F 3/24 (2006.01) C22C 27/04 (2006.01)
B22F 1/00 (2006.01) C22F 1/18 (2006.01)
B22F 3/15 (2006.01) C22F 1/00 (2006.01)
C22C 1/04 (2006.01)
- (21) 国際出願番号: PCT/JP2012/069190
- (22) 国際出願日: 2012年7月27日(27.07.2012)
- (25) 国際出願の言語: 日本語
- (26) 国際公開の言語: 日本語
- (30) 優先権データ:
特願 2011-166630 2011年7月29日(29.07.2011) JP
- (71) 出願人(米国を除く全ての指定国について): 国立
大学法人東北大学(TOHO UNIVERSITY)
[JP/JP]: 〒9808577 宮城県仙台市青葉区片平二丁
目1番1号 Miyagi (JP).
- (72) 発明者: および
- (75) 発明者/出願人(米国についてのみ): 栗下 裕明
(KURISHITA Hiroaki) [JP/JP]: 〒9808577 宮城県仙
台市青葉区片平二丁目1番1号 国立大学法人
東北大学内 Miyagi (JP). 荒川 英夫(ARAKAWA

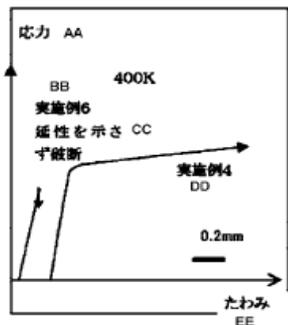
- Hideo) [JP/JP]: 〒9808577 宮城県仙台市青葉区片平
二丁目1番1号 国立大学法人東北大学内 Miyagi (JP). 松尾 悟(MATSUO Satoru) [JP/JP]: 〒
9808577 宮城県仙台市青葉区片平二丁目1番1
号 国立大学法人東北大学内 Miyagi (JP).
- (74) 代理人: 重信 和男. 外(SHIGENOBU Kazuo et
al.): 〒1028578 東京都千代田区紀尾井町4番1号
ガーデンコート19階 Tokyo (JP).
- (81) 指定国(表示のない限り、全ての種類の国内保
護が可能): AE, AG, AL, AM, AO, AT, AU, AZ, BA,
BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN,
CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,
FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN,
IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR,
LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX,
MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT,
QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST,
SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, ZA, ZM, ZW.
- (84) 指定国(表示のない限り、全ての種類の広域保
護が可能): ARIPO (BW, GH, GM, KE, LR, LS, MW,
MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), ユーラン
ア (AM, AZ, BY, KG, KZ, RU, TJ, TM), ヨーロッパ

[続葉有]

(54) Title: METHOD FOR MANUFACTURING ALLOY CONTAINING TRANSITION METAL CARBIDE, TUNGSTEN ALLOY CONTAINING TRANSITION METAL CARBIDE, AND ALLOY MANUFACTURED BY SAID METHOD

(54) 発明の名称: 遷移金属炭化物入り合金の製造方法、遷移金属炭化物入りタングステン合金及び前記製造方法により製造された合金

[図5]



AA STRESS
BB EMBODIMENT 6
CC RUPTURE WITHOUT EXHIBITING
DUCTILITY
DD EMBODIMENT 4
EE DEFLECTION

(57) Abstract: The present invention relates to the development of an alloy material with significantly improved low-temperature brittleness, recrystallization brittleness, and irradiation brittleness by the introduction of a recrystallization microstructure into an alloy, particularly a tungsten material, to significantly strengthen a weak grain boundary of the recrystallization microstructure. The present invention comprises the steps of: mechanically alloying at least one species selected from a group-IVA, VA, or VIA transition metal carbide and a metallic raw material; sintering base powders obtained through the mechanically alloying step, by using a hot isostatic press; and performing plastic deformation of at least 60% on the alloy obtained through the sintering step, at a strain rate between $10^{-5} s^{-1}$ and $10^{-2} s^{-1}$ and at a temperature between $500^{\circ}C$ and $2,000^{\circ}C$. It is therefore possible to obtain an alloy material with significantly improved low-temperature brittleness, recrystallization brittleness, and irradiation brittleness.

(57) 要約: 合金、特に、タングステン材料に再結晶微細組織を導入し、その再結晶微細組織における弱い粒界を著しく強化することにより、低温脆化、再結晶脆化、照射脆化が大幅に改善された合金材料を開発する。I VA族、VA族又はV IA族遷移金属の炭化物から選ばれる少なくとも1種及び金属原料をメカニカルアロイングする工程、前記メカニカルアロイングする工程で得られた原料粉末を熱間等方圧プレスにより焼結する工程、前記焼結する工程で得られた合金を $500^{\circ}C$ 以上 $2000^{\circ}C$ 以下、 $10^{-5} s^{-1}$ 以上 $10^{-2} s^{-1}$ 以下の歪速度で、60%以上の塑性変形を施す工程で合金を製造することで、低温脆化、再結晶脆化、照射脆化が大幅に改善された合金材料が得られる。

Japanese Language IA Published under the PCT

Bibliographic Page

English translation of
Abstract
(always present where publication
is not in English)

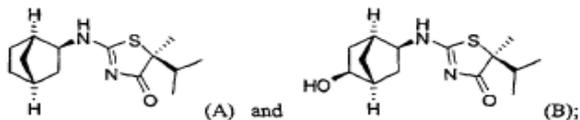


WO 2013/018714 A1

AMENDED CLAIMS

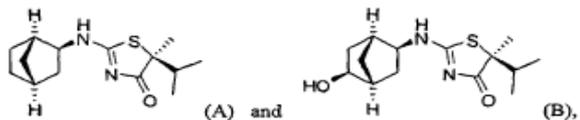
received by the International Bureau on 17 February 2012 (17.02.2012)

1. A method for the treatment or prevention of a cognitive disorder in a subject, comprising administering to the subject a therapeutically effective amount of at least one compound selected from the group consisting of:



and pharmaceutically acceptable salts thereof, wherein the concentration of said compound exceeds K_i for 11 β -HSD1 in the brain of said subject for at least five hours. .

2. The method according to claim 1, wherein the subject is a human.
3. The method according to claim 1, wherein the cognitive disorder is selected from the group consisting of depression, anxiety, schizophrenia, bipolar disorder, post-traumatic stress disorder, attention deficit hyperactivity disorder (ADHD), and Alzheimer's Disease.
4. The method according to claim 3, wherein the cognitive disorder is Alzheimer's Disease.
5. A method for inhibiting 11 β -hydroxysteroid dehydrogenase type 1 in the brain of a subject, comprising administering to the subject a therapeutically effective amount of at least one compound selected from the group consisting of:



and pharmaceutically acceptable salts thereof, wherein the concentration of said compound exceeds K_i for 11 β -HSD1 in the brain of said subject for at least five hours.

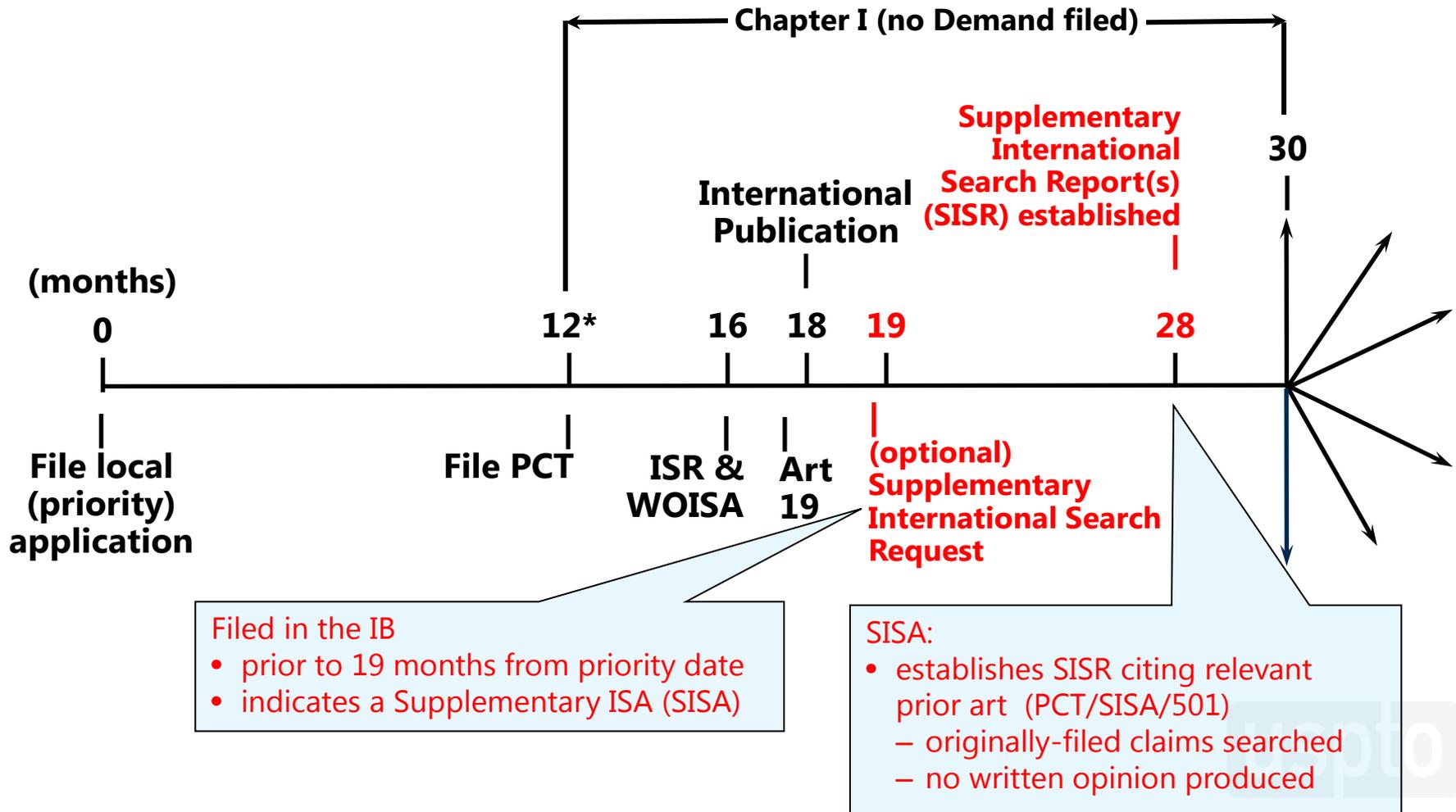
6. The method according to claim 5, wherein the subject is human.
7. The method according to claim 6, wherein the subject suffers from a cognitive disorder selected from the group consisting of depression, anxiety, schizophrenia, bipolar disorder, post-traumatic stress disorder, attention deficit hyperactivity disorder (ADHD), and Alzheimer's Disease.

Published IA with Article 19 Amendment

First page of
Amended Claims

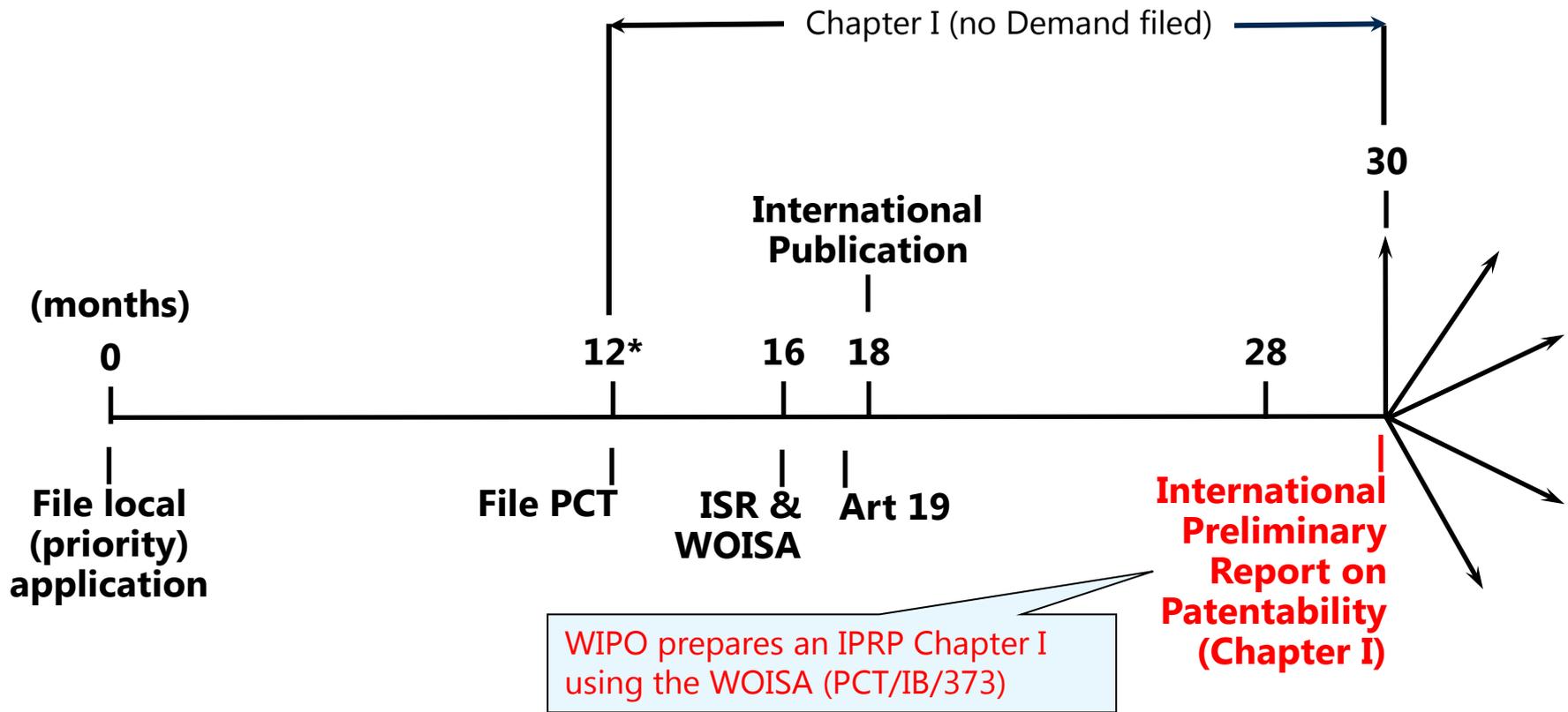
PCT System – Chapter I

Supplementary International Search



PCT System – Chapter I

IPRP (Chapter I)



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

IPRP Chapter I

Form PCT/IB/373
(cover letter for the WOISA)

Applicant's or agent's file reference 10-788-WO	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2011/040256	International filing date (<i>day/month/year</i>) 14 June 2011 (14.06.2011)	Priority date (<i>day/month/year</i>) 14 July 2010 (14.07.2010)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant TRADING TECHNOLOGIES INTERNATIONAL, INC.			

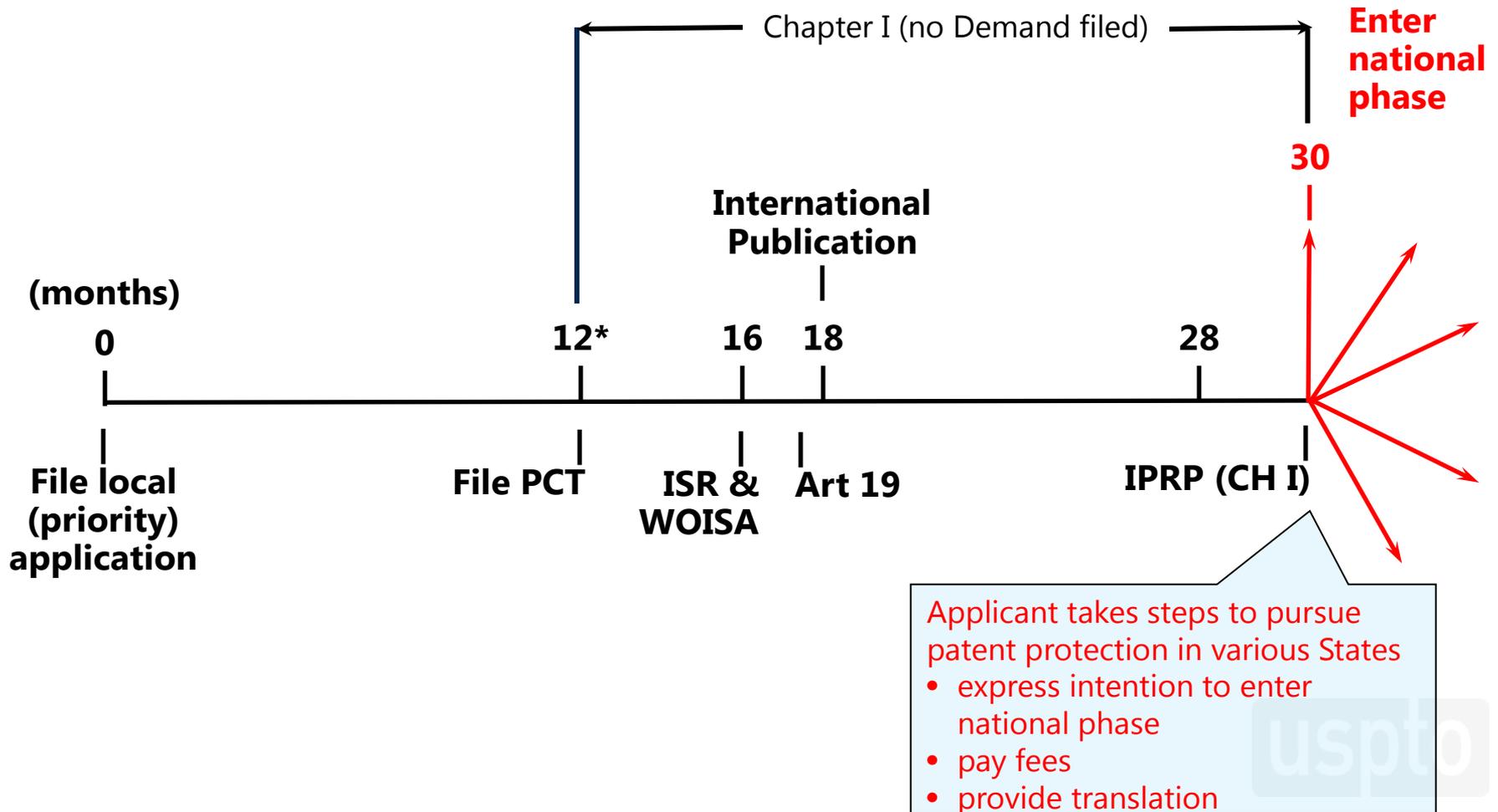
1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).		
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.		
3.	This report contains indications relating to the following items:		
	<input checked="" type="checkbox"/>	Box No. I	Basis of the report
	<input type="checkbox"/>	Box No. II	Priority
	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
	<input type="checkbox"/>	Box No. IV	Lack of unity of invention
	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<input type="checkbox"/>	Box No. VI	Certain documents cited
	<input type="checkbox"/>	Box No. VII	Certain defects in the international application
	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70 Form PCT/IB/373 (January 2004)	Date of issuance of this report 15 January 2013 (15.01.2013)
	Authorized officer Masashi Honda e-mail: pt08.pct@wipo.int



PCT System – Chapter I

National Phase Entry from Chapter I



Chapter II



Chapter II (optional)

Preliminary Examination by the IPEA

- A Demand is filed with an IPEA
 - usually accompanied by a response to the WOISA
 - arguments, and/or
 - Article 34 amendment to the description, claims, drawings
- Documents issued
 - International Preliminary Report on Patentability (Chapter II) (Form PCT/IPEA/409)
 - usually the only Office action issued by the IPEA
 - no appeal or further prosecution during international stage once issued
 - Written Opinion of the IPEA (Form PCT/IPEA/408)
 - issued only in extraordinary circumstances

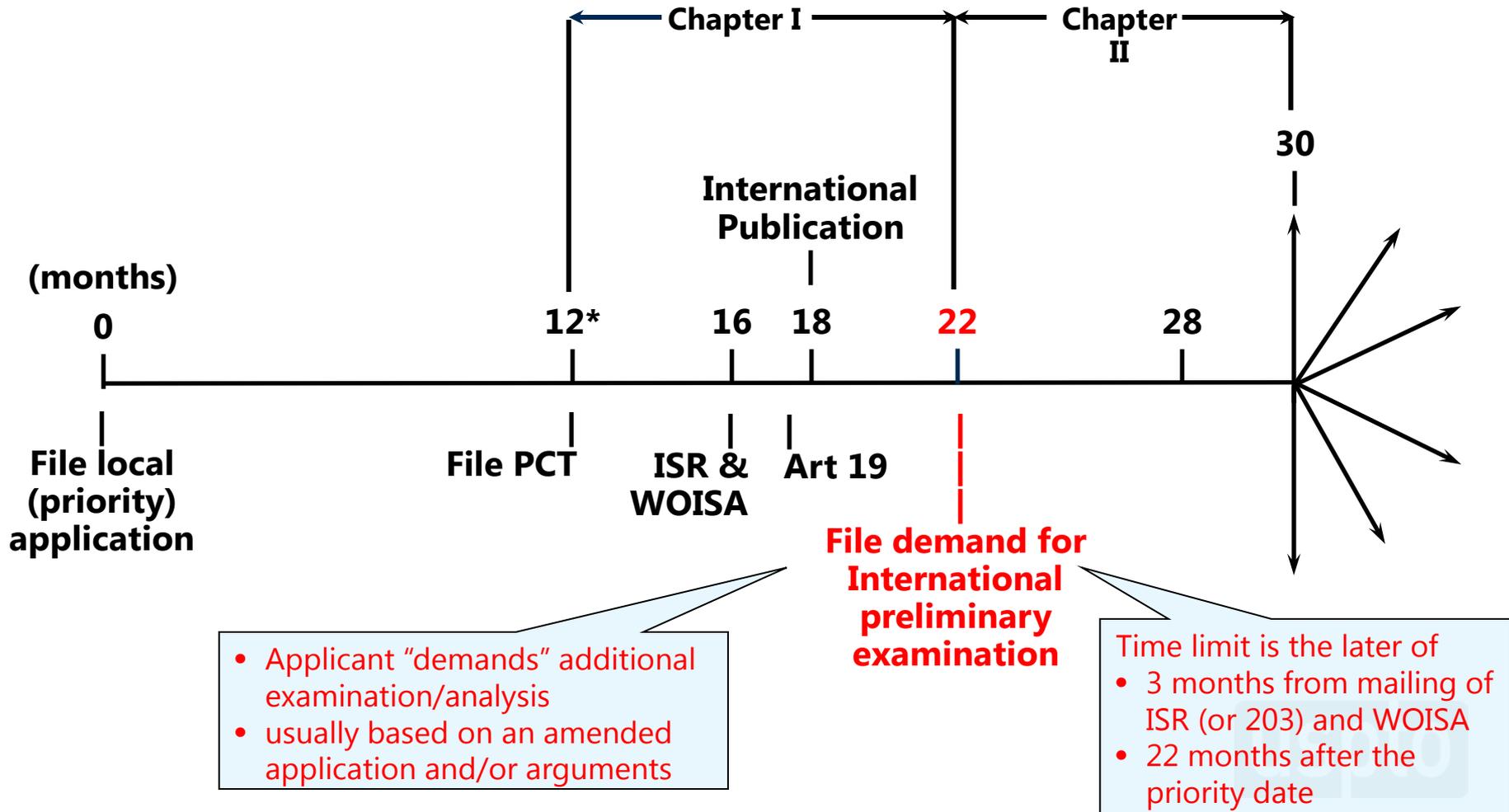
International Preliminary Examining Authority (IPEA)

- Each PCT Contracting State reaches agreement
 - with one/more IPEA to examine international applications filed in its receiving Office
- IPEA/US is a competent IPEA
 - for international applications filed in RO/US
 - regardless of which ISA performed the search
- IPEA/US may be a competent IPEA for IAs filed
 - in RO/IB
 - with some restrictions
 - in certain other receiving Offices
 - where ISA/US performed the search



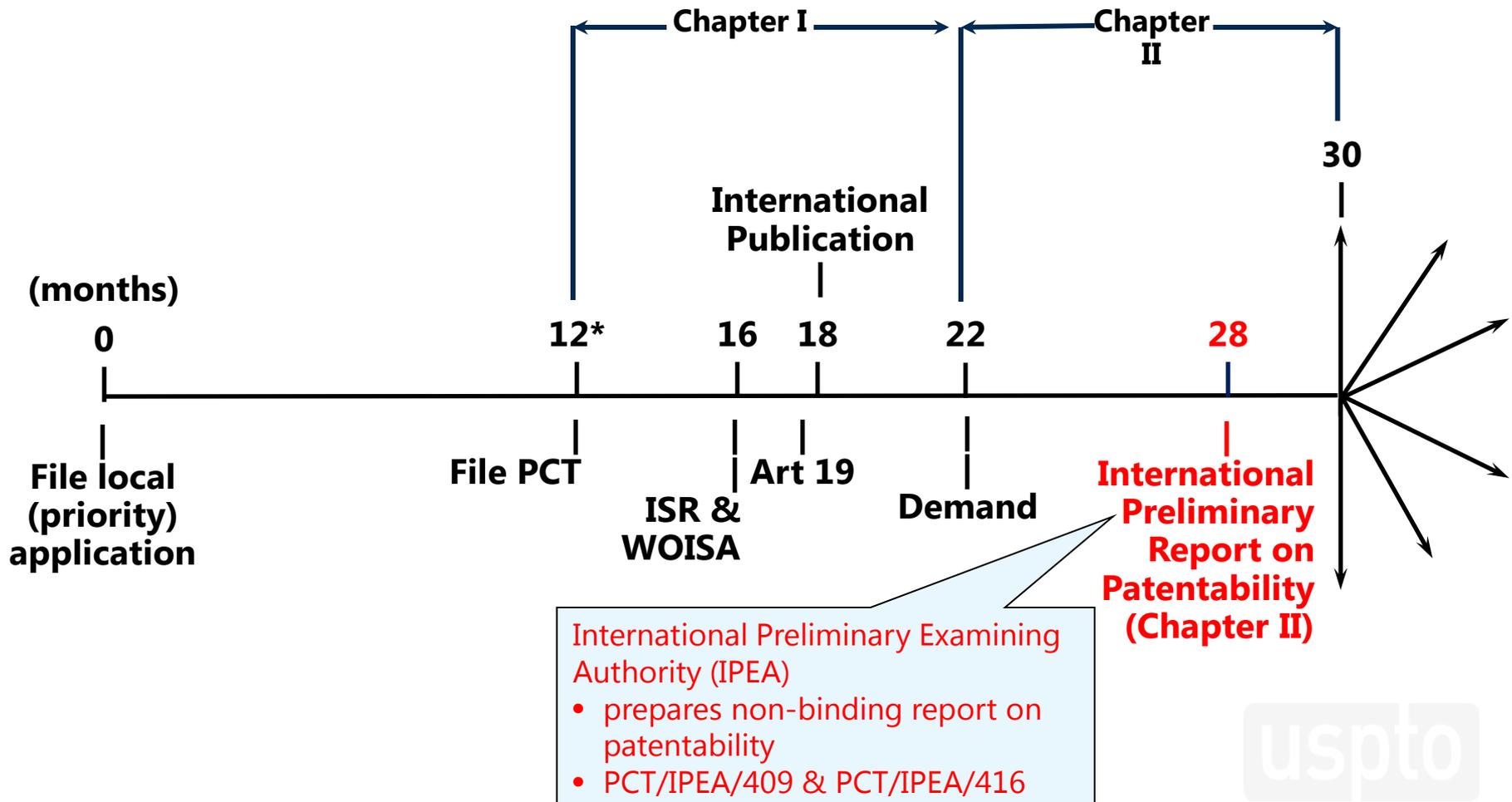
PCT System – Chapter II

Filing of Demand for Chapter II Entry



PCT System – Chapter II

IPRP (Chapter II)



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 800.029	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US12/54468	International filing date (day/month/year) 10 September 2012 (10.09.2012)	Priority date (day/month/year) 10 September 2011 (10.09.2011)
International Patent Classification (IPC) or national classification and IPC IPC: A63B 21/02 (2006.01) USPC: 482/92,121,122		
Applicant SPIRAFLEX, INC.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>92</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>14</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4bis, 70.2(e), 70.16 and 91.2).</p> <p><input type="checkbox"/> superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)).</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3bis of Annex C of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 01 February 2013 (01.02.2013)	Date of completion of this report 12 June 2013 (12.06.2013)	
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer /LoAn H. Thanh/ Telephone No. 571-270-1702	

IPRP (Chapter II) Cover Sheet

Form PCT/IPEA/409

Contents of the IPRP (CH II)



IPRP (Chapter II)

Basis of the Report

Form PCT/IPEA/409
Box No. I

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US12/54468

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

the international application in the language in which it was filed.

a translation of the international application into English which is the language of a translation furnished for the purposes of:

international search (Rules 12.3(a) and 23.1(b)).

publication of the international application (Rule 12.4(a)).

international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b)).

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished

the description:
pages 1-17 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

the claims:
pages NONE as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* 18-22, 22-1, 22-2 received by this Authority on 01 February 2013 (01.02.2013)
pages* NONE received by this Authority on _____

the drawings:
pages 1/13 - 13/13 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____

- Basis of the report
 - application as amended
 - in contrast to WOISA



Form PCT/IPEA/409 (Box No. I) (July 2011)

I PRP (Chapter II)

Reasoned Statement

Form PCT/IPEA/409
Box No. V

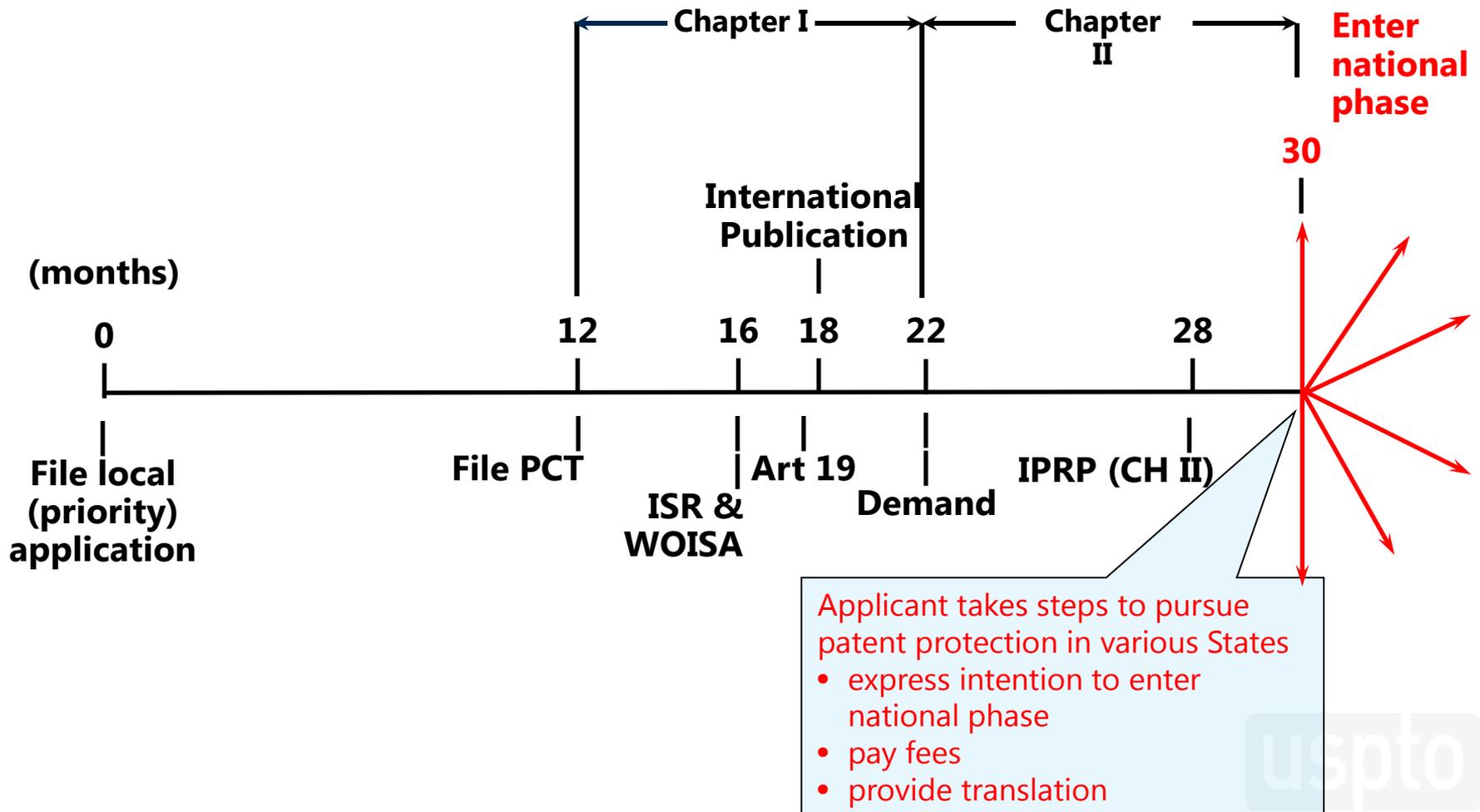
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY		International application No. PCT/US12/54468
Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement		
Novelty (N)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>7-8, 11-21</u>	YES
	Claims <u>1-6, 9-10, 22</u>	NO
Industrial Applicability (IA)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
2. Citations and Explanations (Rule 70.7)		
<p>1) Claims 1-6 lack an inventive step under PCT Article 33(3) as being obvious over Hsieh et al. (US Pat. No. 7,828,704 B1, Nov. 9, 2010) (herein "Hsieh") in view of Truini (US Pat. No. 5,720,701, Feb. 24, 1998).</p> <p>With respect to claim 1, Hsieh teaches a personal exercise device 10 comprising a first arm and a second arm (such as left and right rods 11) pivotally coupled to the first arm at a pivot point. (See Hsieh, Abstract, col. 2, line 48 - col. 3, line 9, and Fig. 1). Hsieh also teaches a first handle 12 and a second handle 12 removably coupled to the first arm 11 and second arm 11, respectively away from the pivot point. (See Hsieh, Fig. 2, which shows the two halves 121 of the handles 12 being mutually assembled together, as described in col. 3, lines 10-16, with projections (not numbered) that are commonly used to connect two components together via screws, thereby making the handles removable).</p> <p>Hsieh further teaches a resistance member (i.e., first torsional spring 20) operably connected to both the first arm (left rod 11) and the second arm (right rod 11) and configured to resist the relative rotational motion of the first arm (left rod 11) with toward the second arm (right rod 11). (See Hsieh, Fig. 2 in which the spring 20 is connected to left and right rods 11 via first and second main bodies 101,102.) The torsional spring 20 provides resistance against both outward and inward forces applied to the arms (i.e., rods 11) in at least two substantially opposing directions. See also col. 2, line 48 - col. 3, line 9). Thus, the resistance member (i.e., spring 20) is engaged to provide resistance against the first and second arms pivoting towards each other when an adduction force is applied against the first and second handles 12 (i.e., by moving rods 11 pivotally towards each other via handles 12, the spring 20 provides the resistance in the opposite direction from pivoting the arms 11 together).</p> <p>Hsieh is silent in explicitly teaching that the exercise devices includes a first tension member operably connected between the first handle and the second arm, and a second tension member operably connected between the second handle and the first arm. Hsieh is also silent in explicitly teaching that the resistance member provides resistance when an abduction force is applied against the first and second handles by the first and second tension members upon extending the first and second handles from the first and second arms.</p> <p>Truini teaches an analogous art teaches an exercising device with pivoting arms and handles. (See Truini, Abstract, and Fig. 1 of PCT/IPEA/409 (Box No. V) (July 2011)).</p> <p>Truini also teaches a resilient member (i.e., resilient member 36a) operably connected between a first handle 26 and a second arm 12. Truini also teaches a second tension member 36b operably connected between a second handle 15 and a first arm 22. (As seen Fig. 1 of</p>		

Citations and explanations on novelty, inventive step and industrial applicability of the claimed invention



PCT System – Chapter II

National Phase Entry from Chapter II



The National Stage

National Stage Requirements

- PCT Articles 22 and 39 require furnishing of the following for national/regional stage entry
 - a copy of the international application
 - unless already provided by the International Bureau
 - a translation of the international application
 - where appropriate
 - the national fee
- National/Regional Offices may have additional requirements
 - PCT Applicant's Guide provides details

35 U.S.C. 371(c) Requirements

- (1) Basic national fee
- (2) Copy of the international application as filed and an English translation, if applicable
- (3) Article 19 amendments, if any, and an English translation, if applicable
- (4) Oath/declaration complying with 35 U.S.C. 115 and 37 CFR 1.497
- (5) English translation of any annexes to the IPER/IPRP (amendments), if applicable



PATENTSCOPE Available Documents

PCT Biblio. Data				Description	Claims	National Phase	Notices	Drawings	Documents	
International Application Status										
Date	Title					View		Download		
13.06.2013	International Application Status Report					HTML, PDF		PDF, XML		
Published International Application										
Date	Title					View		Download		
15.12.2011	Initial Publication with ISR (A1 50/2011)					PDF (21p.)		PDF (21p.), ZIP(XML + TIFFs)		
Related Documents on file at the International Bureau										
Date	Title					View		Download		
04.12.2012	Notification of Transmittal of Copies of International Preliminary Report on Patentability Chapter I (IB/326)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
04.12.2012	English Translation of International Preliminary Report on Patentability Chapter I (IB/373)					PDF (6p.)		PDF (6p.), ZIP(XML + TIFFs)		
04.12.2012	International Preliminary Report on Patentability Chapter I (IB/373)					PDF (6p.)		PDF (6p.), ZIP(XML + TIFFs)		
01.12.2012	Written Opinion of the International Search Authority					PDF (5p.)		PDF (5p.), ZIP(XML + TIFFs)		
01.12.2012	English Translation of the Written Opinion of the International Search Authority					PDF (5p.)		PDF (5p.), ZIP(XML + TIFFs)		
25.09.2012	Notice Informing the Applicant of the Communication of the International Application to the Designated Offices (IB/308)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
20.12.2011	Notice Informing the Applicant of the Communication of the International Application to the Designated Offices (IB/308)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
15.12.2011	Application Body as Filed					PDF (14p.)		PDF (14p.), ZIP(XML + TIFFs)		
15.12.2011	Request form (RO/101)					PDF (4p.)		PDF (4p.), ZIP(XML + TIFFs)		
15.12.2011	Notification of receipt of record copy (IB/301)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
15.12.2011	Notification of receipt of record copy (IB/301)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
15.12.2011	ES P 201000757 01.06.2010 (Pr. Doc.)					PDF (15p.)		PDF (15p.), ZIP(XML + TIFFs)		
15.12.2011	Notification Concerning Availability of Publication of the International Application (IB/311)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
15.12.2011	Notification Concerning Submission or Transmittal of Priority Document (IB/304)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
15.12.2011	Notification of Receipt of Search Copy (ISA/202)					PDF (1p.)		PDF (1p.), ZIP(XML + TIFFs)		
15.12.2011	International Search Report					PDF (7p.)		PDF (7p.), ZIP(XML + TIFFs)		

Published international application

IPRP(CH I) – PCT/IB/373 and English translation

WOISA – PCT/ISA/237 and English translation

Priority document

ISR – PCT/ISA/210

Any questions?

michael.neas@uspto.gov

PCT Help Desk @ the USPTO
571-272-4300
8:30 – 5:00 Eastern time, M-F

