



## **Strategic use of the Patent Cooperation Treaty (PCT) by Universities and Start - ups**

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# Patents in a research environment

- Why patents matter
- Ways of benefiting from patents
- General features of the patent system
- Patents nationally and internationally
  
- The Patent Cooperation Treaty (PCT)
  - the main route for obtaining patents internationally

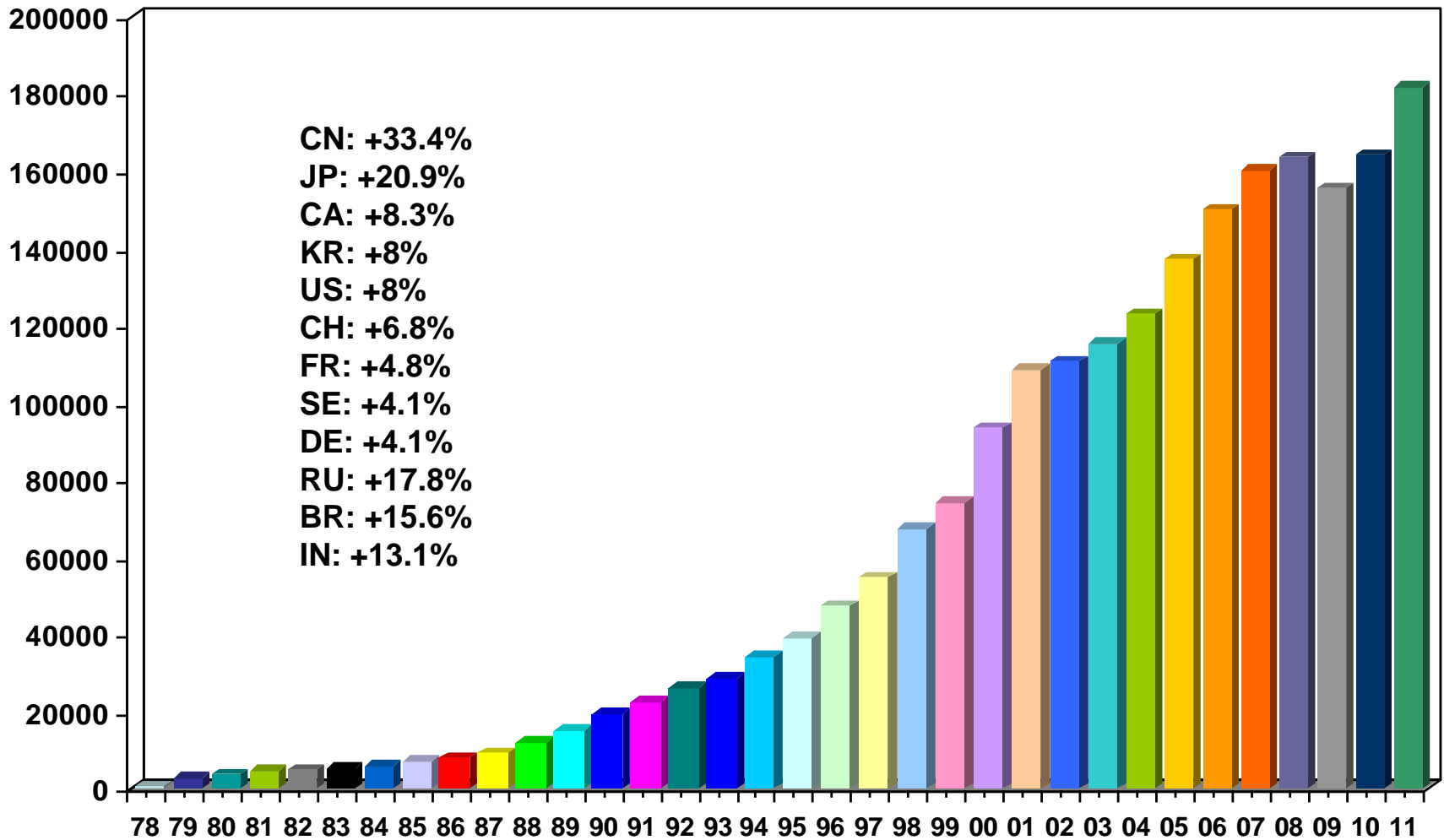
# General economic effects

- Are patents a pre-condition for innovation? – no
- Can patents encourage innovation? – yes
- Do economists agree on the economic effects? – no
- Do economically successful countries have or develop strong patent systems? – yes

# A strategic tool for enterprises

- Can patents aid commercial success? – yes
- Do many innovative enterprises use patents? – yes
- Do (potential) investors like patents? – yes
- Do patents guarantee profits? – no

# PCT Applications 2011



**+10.7% in 2011**

# General Statistics

- Number of PCT Filings by Receiving Office/TR, for the year 2011: **276**
- Number of PCT Filings by Country of Origin for TR, for the year 2011: **541**

From the top 15 ROs of middle income countries, for the year 2011, Turkey was on the 4 place by number of filings, after IN, RU and BR. The same applies for the number of PCT filings by Country of Origin.

# Top PCT Applicants 2011

1. ZTE Corporation—CN(2826)
2. Panasonic—JP (2463)
3. Huawei—CN (1831)
4. Sharp—JP (1755)
5. Bosch—DE (1518)
6. Qualcomm—US (1494)
7. Toyota—JP (1417)
8. LG Electronics—KR (1336)
9. Philips—NL (1148)
10. Ericsson—SE (1116)
11. NEC—JP (1056)
12. Siemens—DE (1039)
13. Mitsubishi Electric—JP (834)
14. BASF—DE (773)
15. Samsung Electronics—KR (757)
16. Nokia—FI (698)
17. IBM—US (661)
18. HP—US (591)
19. 3M—US (563)
20. Hitachi—JP (547)

# Main features of patent rights

- Exclusive right to *stop others* from making, using or selling the invented product or process
- *In the nature of a property right*
  - may be sold or licensed
- Only available for *new* inventions in a field of *technology*
  - but small improvements can be enough
- Geographically limited under *national* patent laws
  - but there are *regional* and *international* treaties
- Must file a patent *application* to obtain rights
  - fully describing invention
  - description is published
- Limited duration, *20 years* from filing date
- Annual renewal or maintenance fees (increasing with time)



# Conditions for grant of a (valid) patent

- Patent application must be filed
- Invention must be new (“novel”) and involve an inventive step (“non-obvious”)
- Invention must be “industrially applicable”
- Application must fully describe the invention (in the description and drawings), sufficiently to enable performance of the invention
- Application must define the patent rights sought, in patent “claims” that are fairly based on what is described

# Filing patent applications abroad

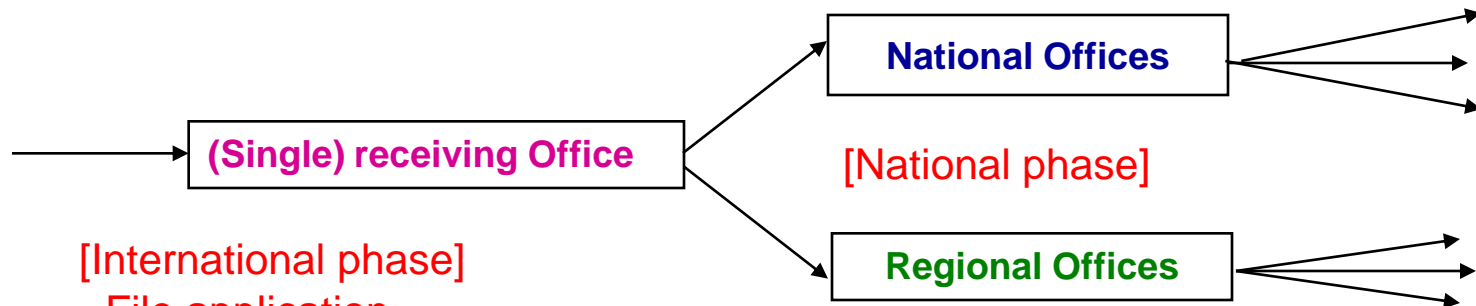
## ■ National patent systems



## ■ Regional patent system (EPO, EAPO, OAPI, ARIPO, GCC)



## ■ Patent Cooperation Treaty (PCT) system

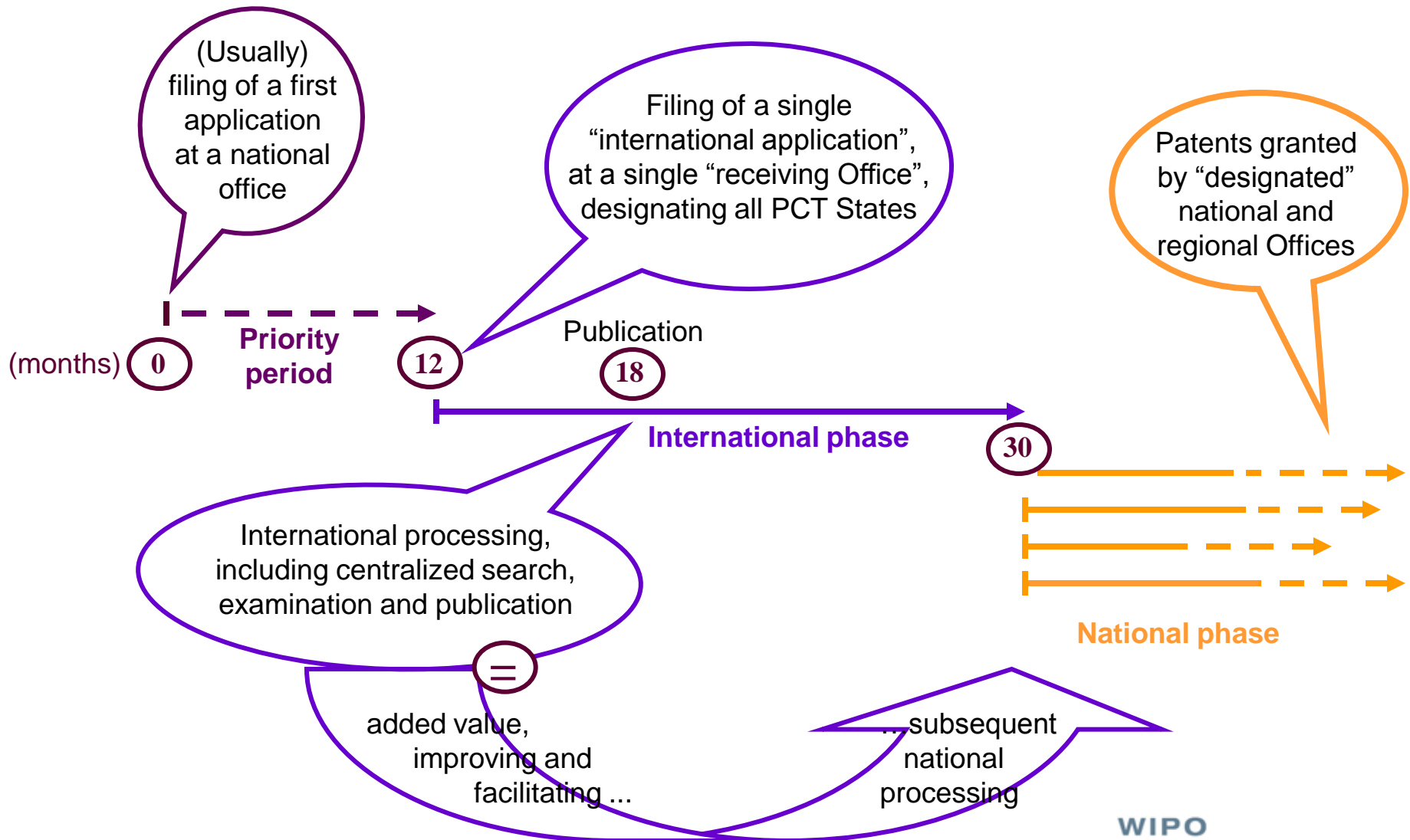


[International phase]

- File application
- International publication
- International search
- International preliminary examination

*Patents*

# PCT procedure overview



# Significance of the PCT

- A patent application filing system
  - the only truly international filing system
  - not a patent granting system
  - each “designated Office” makes its own decision on patent grant
- Impetus for improving the international patent system
  - “bottom-up” harmonization of patent laws
- A model of international cooperation
  - built on cooperation between Patent Offices
- A wealth of scientific and technical information

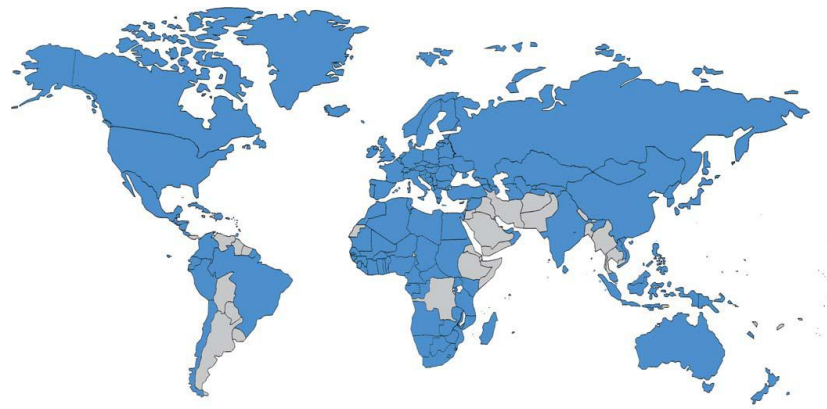
# Some dates and numbers

- Treaty concluded in 1970
  - 78 signatory countries, 11 IGOs, 11 NGOs
- In 1978 (start of practical operations)
  - 18 member countries and 500 applications
- In 2011
  - 181,900 applications – growth of 10.7% over 2010
- In 2012
  - 146 member countries

# PCT general features

- Rationalized filing and processing
  - for both applicants and Patent Offices
- Single application with legal effect in all PCT countries
  - 146 countries and 4 regional patent systems
- International and national phases

# PCT Contracting States (146)



AE United Arab Emirates  
 AG Antigua and Barbuda  
 AL Albania  
 AM Armenia (EA)  
 AO Angola  
 AT Austria (EP)  
 AU Australia  
 AZ Azerbaijan (EA)  
 BA Bosnia and Herzegovina  
 BB Barbados  
 BE Belgium (EP)  
 BF Burkina Faso (OA)  
 BG Bulgaria (EP)  
 BH Bahrain  
 BN Brunei Darussalam  
 BJ Benin (OA)  
 BR Brazil  
 BW Botswana (AP)  
 BY Belarus (EA)  
 BZ Belize  
 CA Canada  
 CF Central African Republic (OA)  
 CG Congo (OA)  
 CH Switzerland (EP)  
 CI Côte d'Ivoire (OA)  
 CL Chile  
 CM Cameroon (OA)  
 CN China  
 CO Colombia  
 CR Costa Rica  
 CU Cuba  
 CY Cyprus (EP)  
 CZ Czech Republic (EP)  
 DE Germany (EP)  
 DK Denmark (EP)  
 DM Dominica  
 DO Dominican Republic  
 DZ Algeria  
 EC Ecuador  
 EE Estonia (EP)  
 EG Egypt  
 ES Spain (EP)  
 FI Finland (EP)  
 FR France (EP)  
 GA Gabon (OA)  
 GB United Kingdom (EP)  
 GD Grenada  
 GE Georgia  
 GH Ghana (AP)  
 GM Gambia (AP)  
 GN Guinea (OA)  
 GQ Equatorial Guinea (OA)

GR Greece (EP)  
 GT Guatemala  
 GW Guinea-Bissau (OA)  
 HN Honduras  
 HR Croatia (EP)  
 HU Hungary (EP)  
 ID Indonesia  
 IE Ireland (EP)  
 IL Israel  
 IN India  
 IS Iceland (EP)  
 IT Italy (EP)  
 JP Japan

KE Kenya (AP)  
 KG Kyrgyzstan (EA)  
 KM Comoros  
 KN Saint Kitts and Nevis  
 KP Democratic People's Republic of Korea  
 KR Republic of Korea  
 KZ Kazakhstan (EA)  
 LA Lao People's Democratic Republic

LC Saint Lucia  
 LI Liechtenstein (EP)  
 LK Sri Lanka  
 LR Liberia  
 LS Lesotho (AP)  
 LT Lithuania (EP)  
 LU Luxembourg (EP)  
 LV Latvia (EP)  
 LY Libyan Arab Jamahiriya  
 MA Morocco  
 MC Monaco (EP)

MD Moldova (EA)  
 ME Montenegro  
 MG Madagascar  
 MK The former Yugoslav Republic of Macedonia  
 ML Mali (OA)  
 MN Mongolia  
 MR Mauritania (OA)  
 MT Malta (EP)  
 MW Malawi (AP)  
 MX Mexico  
 MY Malaysia

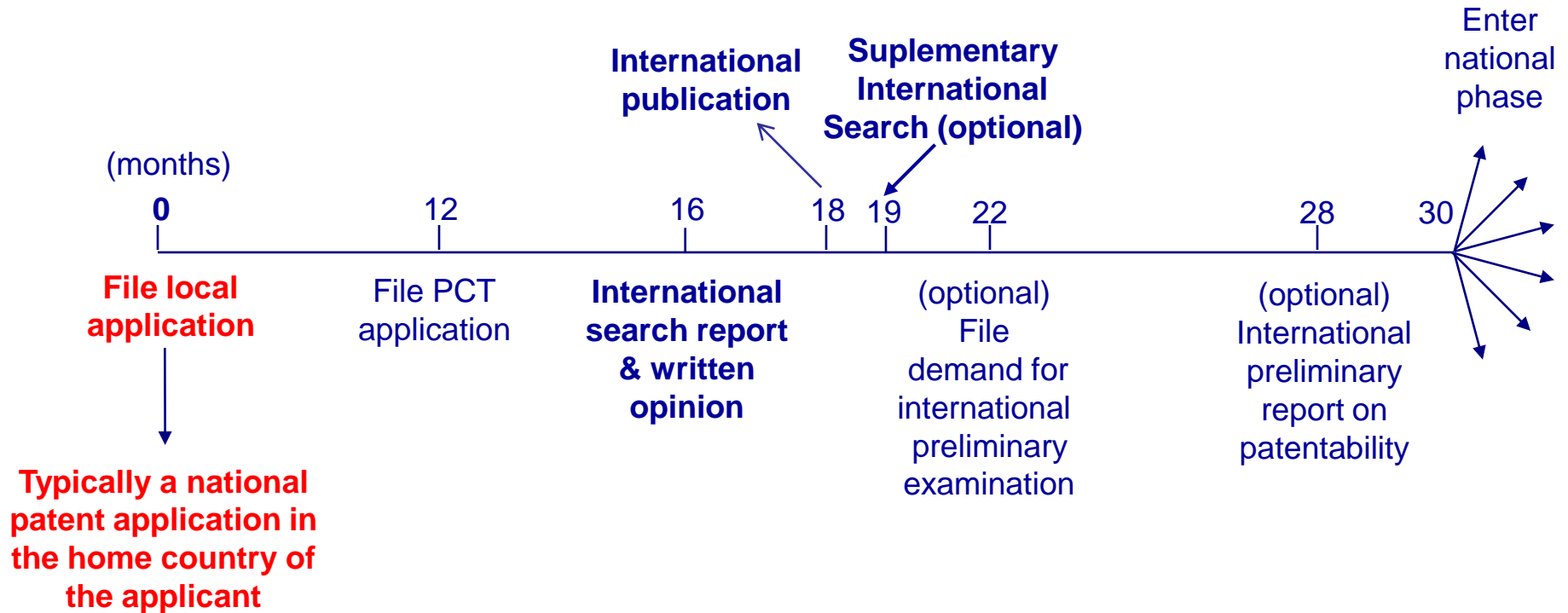
MZ Mozambique (AP)  
 NA Namibia (AP)  
 NE Niger (OA)  
 NG Nigeria  
 NI Nicaragua  
 NL Netherlands (EP)  
 NO Norway (EP)  
 NZ New Zealand  
 OM Oman  
 PA Panama  
 PE Peru  
 PG Papua New SE  
 Sweden (EP)  
 SG Singapore  
 SI Slovenia (EP)  
 SK Slovakia (EP)  
 SL Sierra Leone (AP)  
 SM San Marino  
 Guinea  
 PH Philippines  
 PL Poland (EP)  
 PT Portugal (EP)  
 QA Qatar  
 RO Romania (EP)  
 RW Rwanda (AP)  
 RS Serbia  
 RU Russian Federation (EA)  
 SC Seychelles  
 SD Sudan (AP)

SN Senegal (OA)  
 ST Sao Tome and Principe  
 SV El Salvador  
 SY Syrian Arab Republic  
 SZ Swaziland (AP)  
 TD Chad (OA)  
 TG Togo (OA)  
 TH Thailand  
 TJ Tajikistan (EA)  
 TM Turkmenistan (EA)  
 TN Tunisia  
 TR Turkey (EP)  
 TT Trinidad and Tobago  
 TZ United Republic of Tanzania (AP)  
 UA Ukraine  
 UG Uganda (AP)  
 US United States of America  
 UZ Uzbekistan  
 VC Saint Vincent and the Grenadines  
 VN Viet Nam  
 ZA South Africa  
 ZM Zambia (AP)  
 ZW Zimbabwe (AP)

Regional designations:

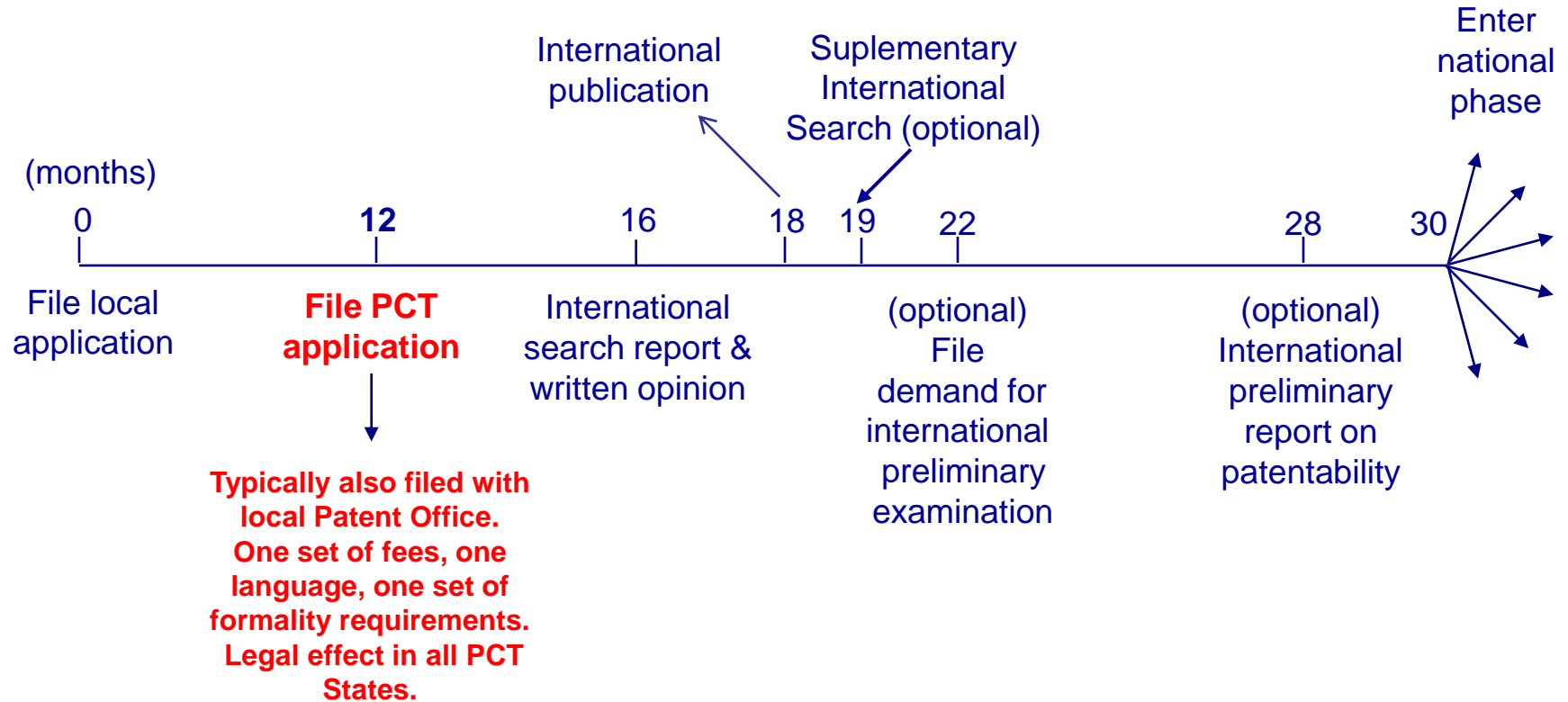
AP = ARIPO patent, EA = Eurasian patent, EP = European patent, OA = OAPI patent

# The PCT system – typical use

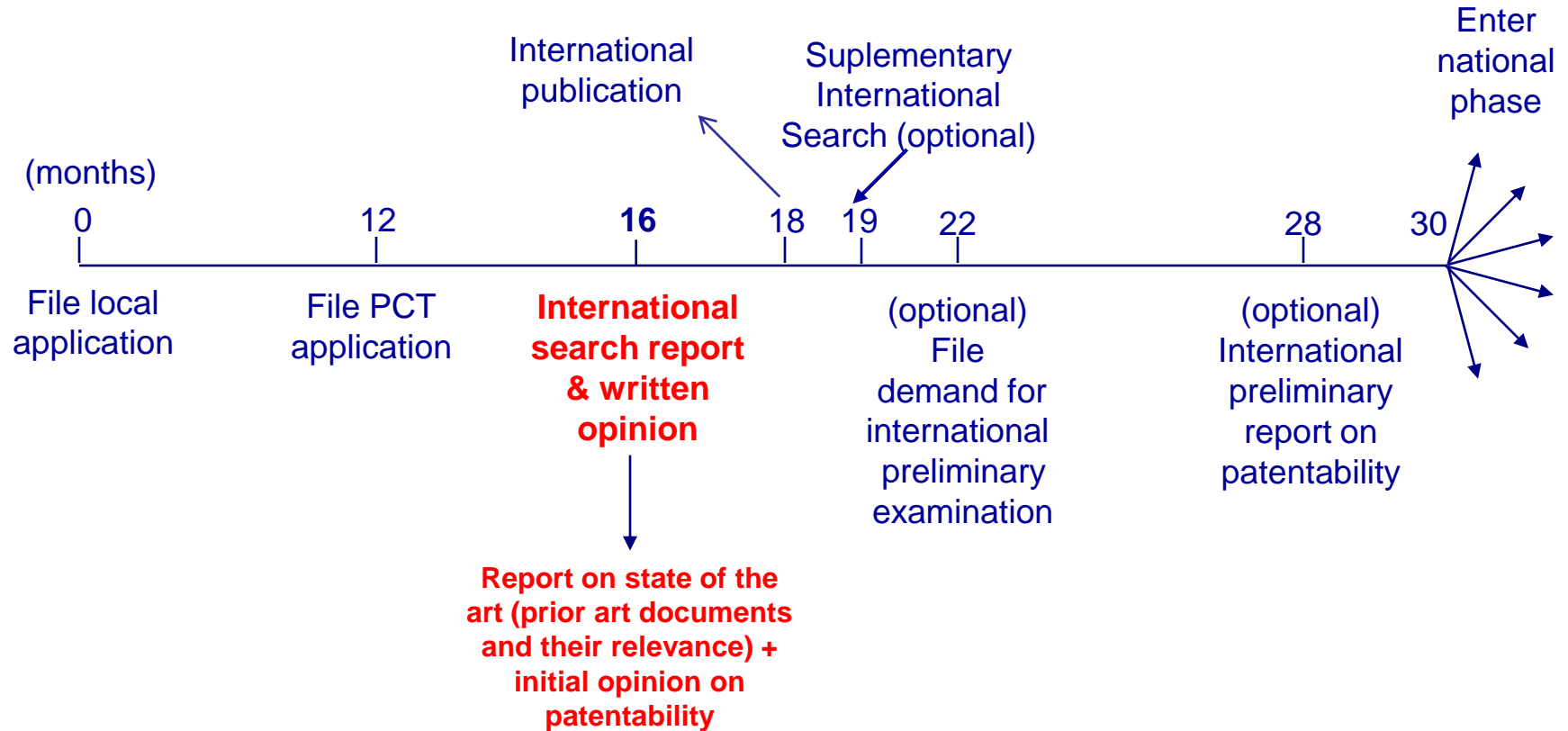




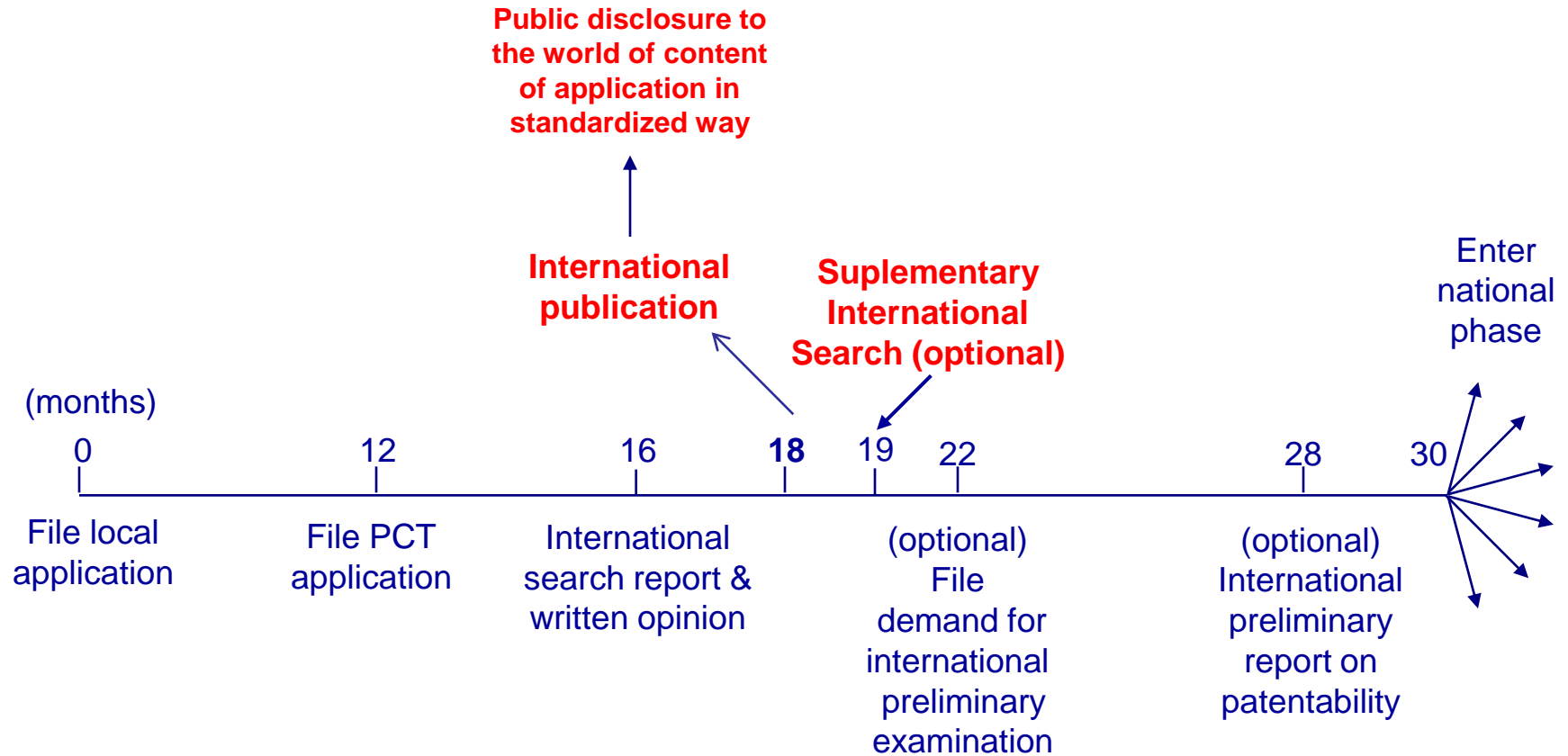
# Typical use (2)



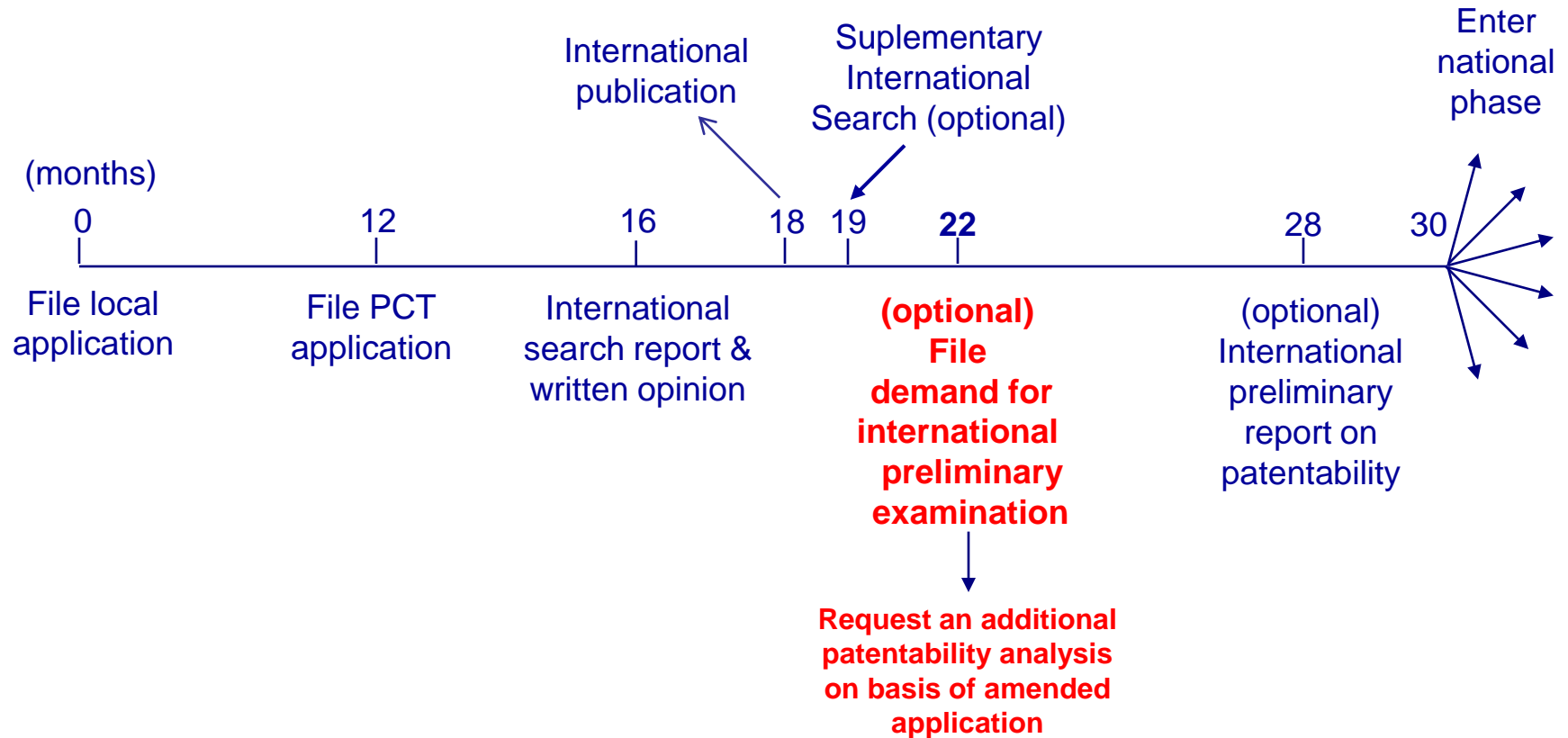
# Typical use (3)



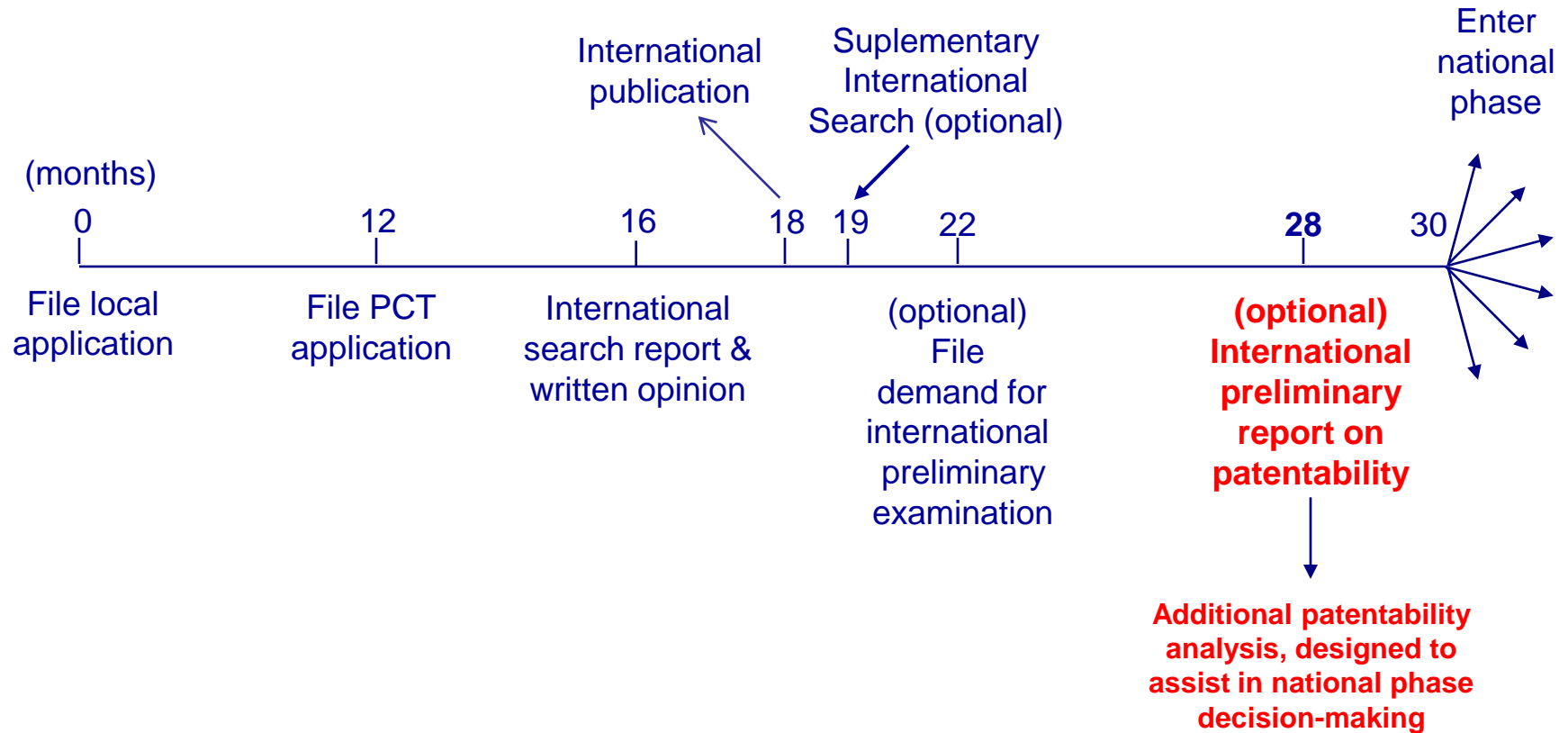
# Typical use (4)



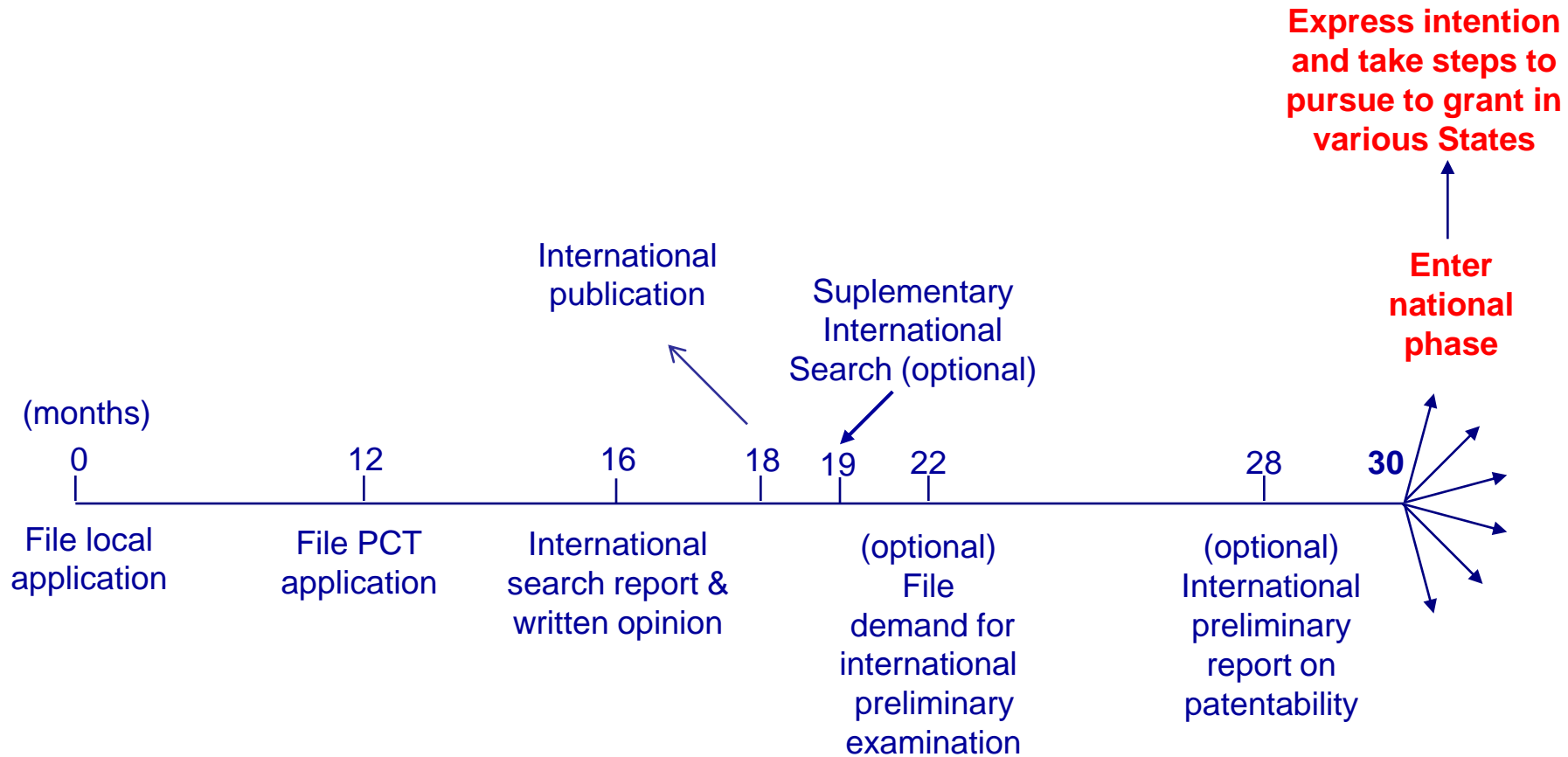
# Typical use (5)



# Typical use (6)



# Typical use (7)

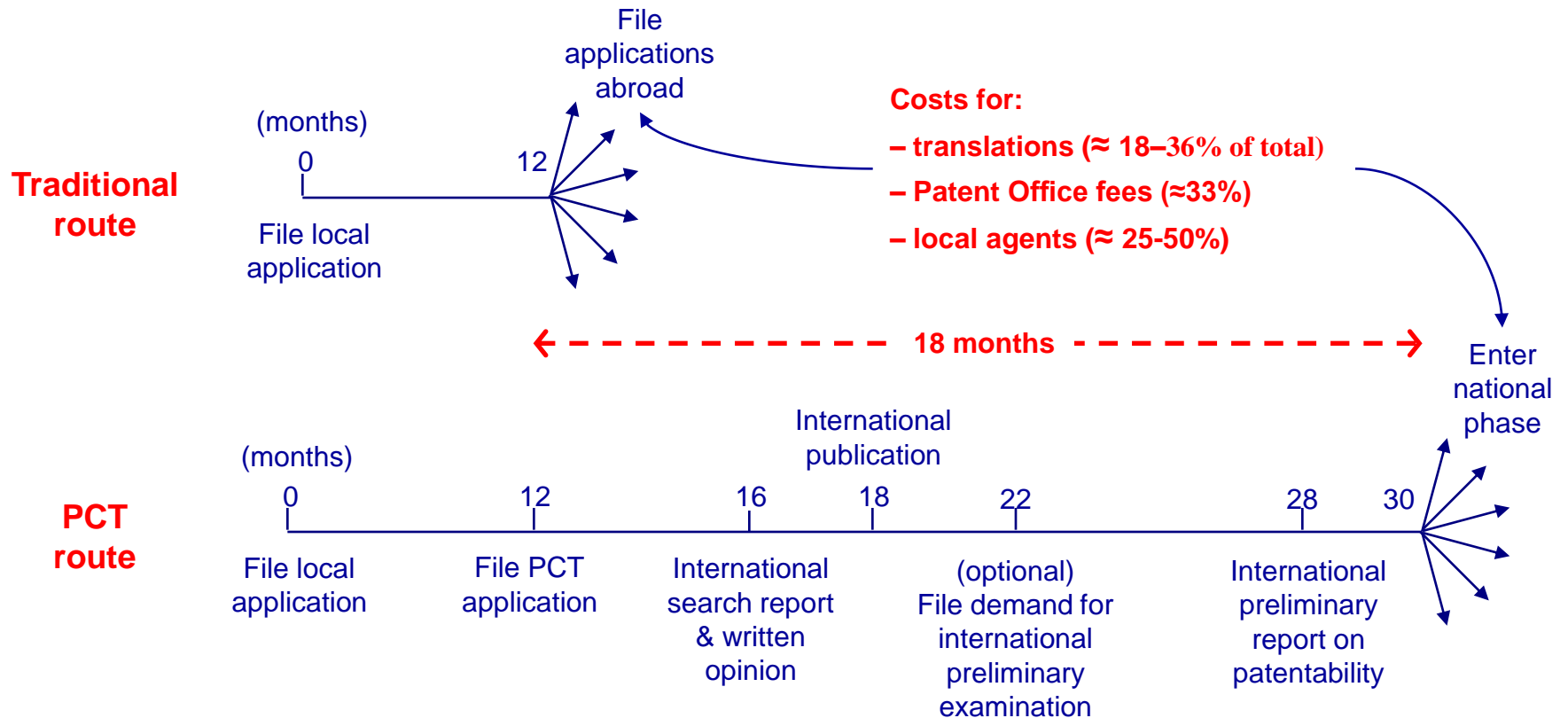


## Certain PCT Advantages:

- postpones the major costs associated with “internationalizing” a patent application

- Translations of the patent application (a highly technical document) into various national languages
- Official fees for payment to national/regional Patent Offices (for example, filing fees, claims fees, etc.)
- Fees for the services of local patent agents/attorneys in the designated states

# Costs in traditional and PCT filing routes





# Cost savings

- For a single invention
  - PCT not cheaper than direct applications in <15 countries
  - PCT international phase costs are <5% of total patenting costs
- For a portfolio of applications at 30 months
  - abandon 20% of applications by not entering national phase
  - drop 30% of designated countries cf. original plan
- National phase entry decisions really matter

# Turkey – main PCT fees

- Payable upon filing (Chapter I):
  - Transmittal fee (for RO/TR) None
  - International filing fee (for IB) CHF 1,330
  - + supplement per sheet > 30 CHF 15
  - Search fee (for ISA/EP) EUR 1,875
- Payable upon filing demand for IPE (Chapter II):
  - Preliminary examination fee (for IPEA/EP) EUR 1,850
  - Handling fee (for IB) EUR 165

# Time ~ information ~ decisions

- 18 months more time
- Patentability information
  - international search report and written opinion
  - (optional) international preliminary report on patentability
- Prospects of commercial success
  - production costs, market appeal, profitability
  - potential partners, licensees, buyers
  - competitors
- Result: better decisions
  - better spent money

# Example: PCT International Search Report

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 50-14535 B (NCR CORPORATION) 28 May 1975 (28.05.75), column 4, lines 3 to 27	7-9, 11
X	GB 392415 A (JONES) 18 May 1933 (18.05.33) Fig. 1 page 3, lines 5-7 Fig. 5, support 36	1-3
Y		4, 10
A		11-12
X	GB 2174500 A (STC) 5 November 1986 (05.11.86) page 1, lines 5-15, 22-34, 46-80; Fig. 1	1-3
Y		4
A	US 4322752 A (BIXTY) 30 March 1982 (30.03.82) claim 1	1
A	GREEN, J.P. Integrated Circuit and Electronic Compass, IBM Technical Disclosure Bulletin, October 1975, Vol. 17, No. 6, pages 1344 and 1345	1-5

**Symbols indicating which aspect of patentability the document cited is relevant to (for example, novelty, inventive step, etc.)**

**Documents relevant to whether or not your invention may be patentable**

**The claim numbers in your application to which the document is relevant**

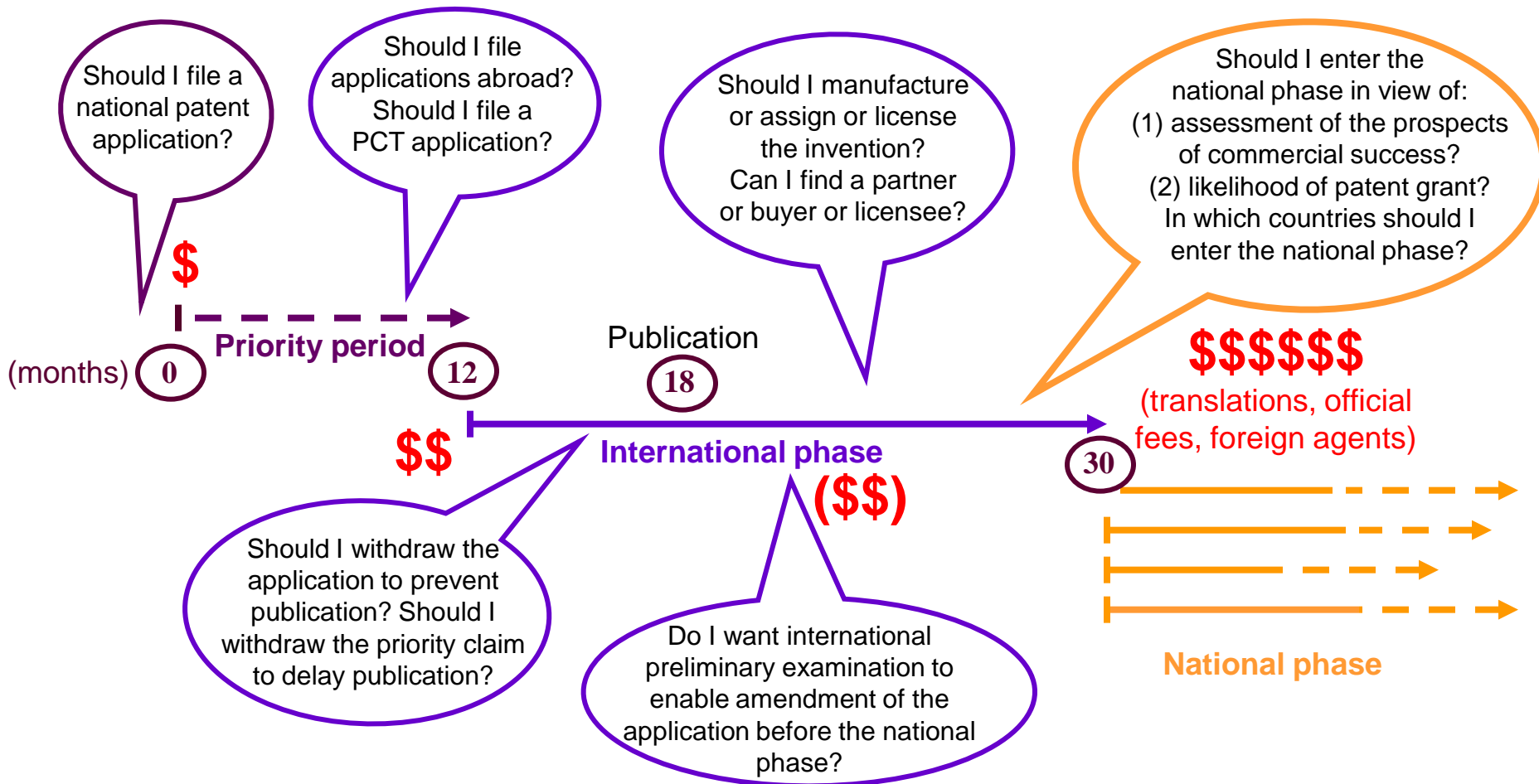
# Example: PCT Written opinion of the International Searching Authority

<b>WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY</b>		International application No.
<b>Box No. V</b>	<b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>	
1. Statement		
Novelty (N)	Claims <u>Claim(s) 3-15</u>	YES
	Claims <u>Claim(s) 16</u>	NO
Inventive step (IS)	Claims <u>Claim(s) 8, 10-12</u>	YES
	Claims <u>Claim(s) 3-7, 9, 14-16</u>	NO
Industrial applicability (IA)	Claims <u>Claim(s) 3-16</u>	YES
	Claims _____	NO
2. Citations and explanations:		
<b>INDEPENDENT CLAIM 3</b>		
Document US-A-5 332 238, which is considered to represent the most relevant state of the art, discloses (cf. relevant passages indicated in the ISR) a device from which the subject-matter of <b>INDEPENDENT CLAIM 3</b>		
Document US-A-5 332 238, which is considered to represent the most relevant state of the art,		

Reasoning supporting the assessment

Patentability assessment of claims

# PCT decision points



More information about patentability

More information about commercial prospects

**Thank you for your attention**

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