

## Chapter 4

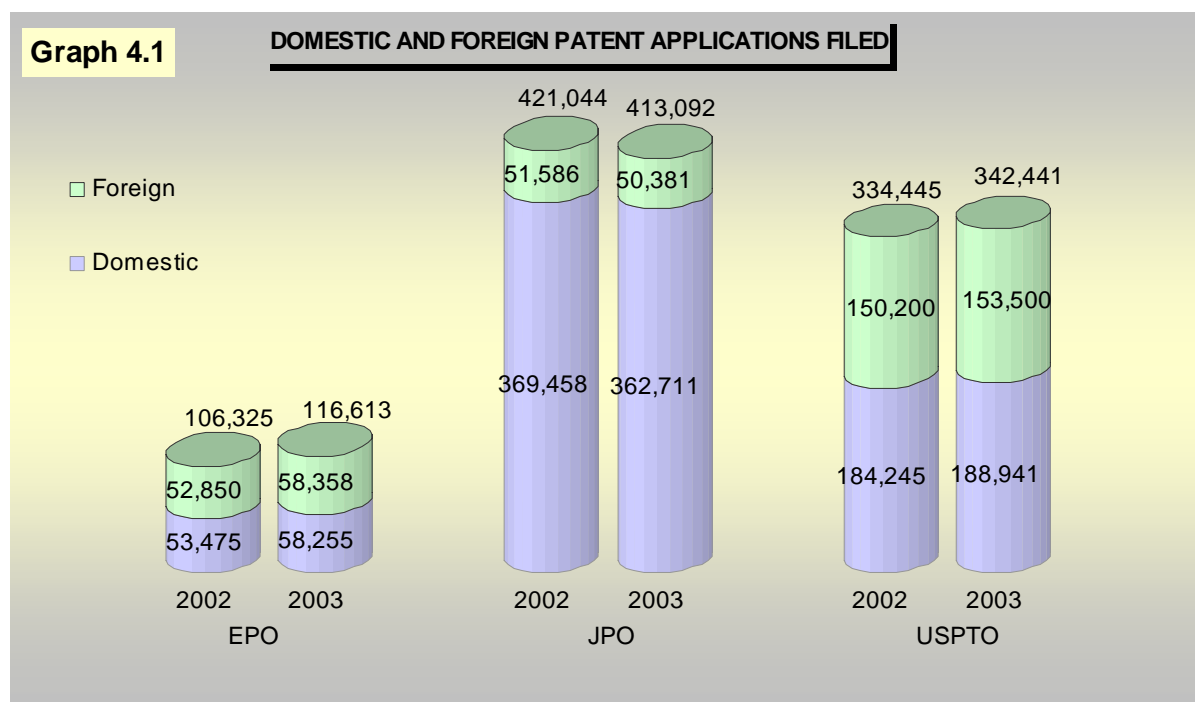
# PATENT ACTIVITY AT TRILATERAL OFFICES

Demand at Trilateral offices is demonstrated by statistics on patent applications. The total of direct national / regional applications filed and international applications entering the national / regional phase will hereinafter be called "patent applications filed", unless explicitly stated otherwise.

For the patent grant statistics presented in this chapter, direct, regional, and international applications granted are taken into account. Since in this context the statistics are meant to give insight into the work involved rather than the number of resulting individual patent rights, hereinafter "patents granted" will correspond to the number of grant actions.

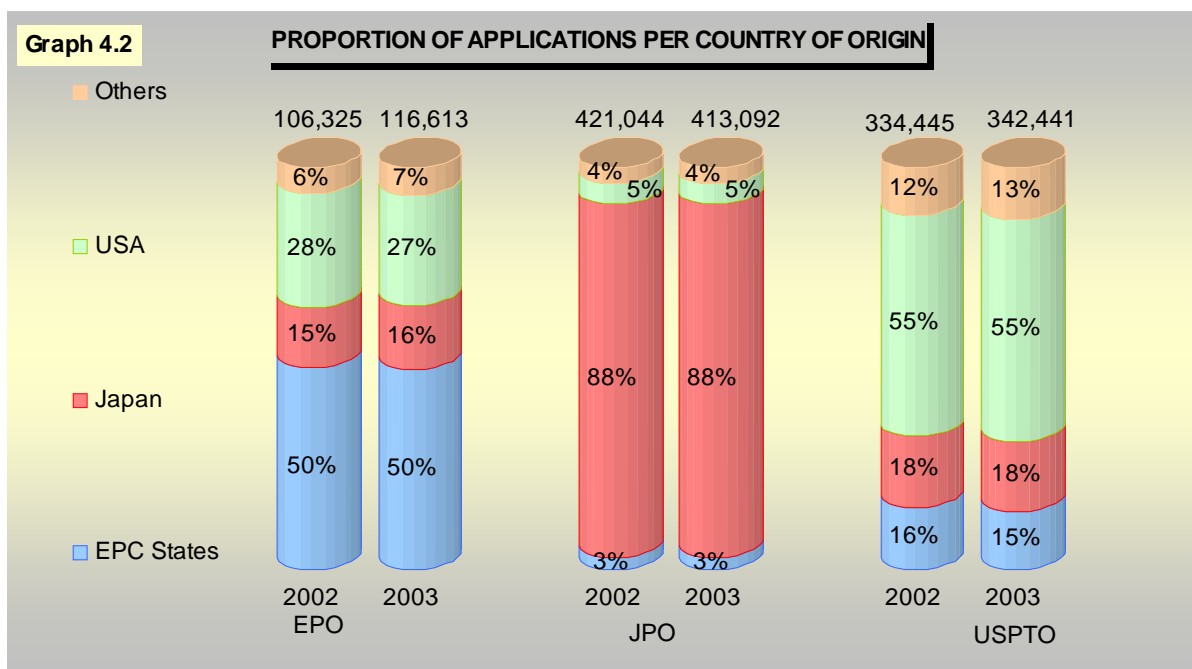
## APPLICATIONS WITH THE TRILATERAL OFFICES

The numbers of domestic (residents of the country) and foreign (non-residents) patent applications filed with each one of the Trilateral offices for the years 2002 and 2003 are shown in Graph 4.1.



There were a total of 413,092 patent applications filed with the JPO in 2003, which is a decrease of 7,952 filings or 1.9% below the previous year. The number of patent application filings at the EPO increased by 10,288 or 9.7%. USPTO patent application filings also increased over 2002 levels by 7,996 or 2.4%.

Graph 4.2 shows the respective shares of patent application filings by origin relative to total filings at each office for 2002 and 2003.



Compared to 2002, the shares of patent application filings by origin at each office were little changed in 2003. As in the past, patent application filings of domestic origin continued to represent the most significant share of filings at each office. In 2003, the shares of domestic filings at the JPO, EPO, and USPTO were 88%, 50%, and 55%, respectively. The numbers of domestic filings in the JPO and the USPTO are approximately equivalent to the numbers of first filings. Domestic EPO filings are defined as the total of EPO filings by residents of EPC contracting states. Only a low proportion of these are first filings at the EPO, which is explained by the fact that in EPC contracting states the first application is generally filed at a National office. A subsequent filing at the EPO follows if the invention is judged to be worthy of protection throughout Europe. Consequently, the number of domestic filings at the EPO is not equivalent to the number of first filings. The first filings with the EPO from residents of EPC contracting states were 10,469 in 2002 and 11,974 in 2003, respectively 19.6% and 20.6% of domestic European filings.

Due to the differences in behaviour of the applicants from different countries, comparison of the number of applications at the Trilateral offices should be made with caution. For example, the numbers of claims given in applications are significantly different among the three offices. On average, in 2003, an application filed at the EPO contained 17.7 claims (17.4 in 2002), one filed at the USPTO had 23.4 claims (23.1 in 2002), and one application at the JPO contained 7.6 claims (7.2 in 2002).

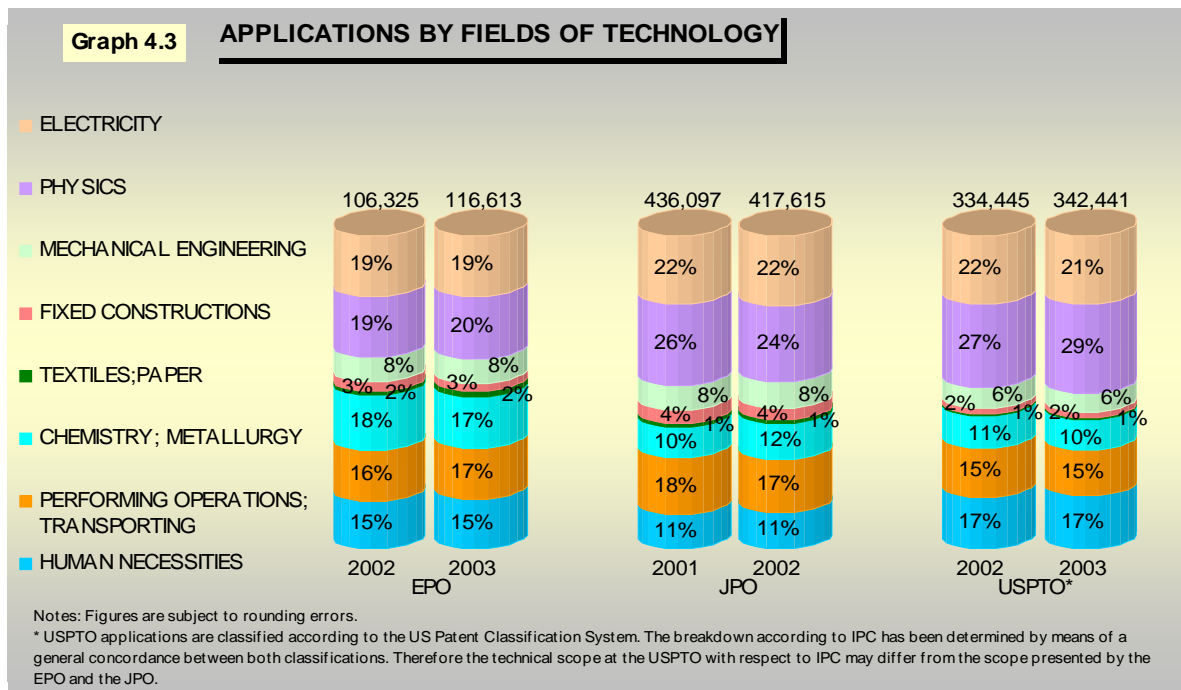
## APPLICATIONS BY FIELD OF TECHNOLOGY

Patents are classified by the Trilateral offices according to the International Patent Classification (IPC). This takes place at a different stage of the procedure in each office.

Graph 4.3 shows data for the EPO and the USPTO for the filing years 2002 and 2003, while for the JPO the breakdown is given for the filing years 2001 and 2002. The JPO graph for 2002 shows the most recent available figures because the IPC is assigned just before the publication of the Unexamined Patent Gazette (after the expiration of 18 months from the filing date). The JPO numbers in the graph were as of April 12, 2004.

Graph 4.3 indicates the share of applications in each technological field at each office. The following eight fields of technology are represented:

- 1) Human necessities
- 2) Performing operations, transporting
- 3) Chemistry, metallurgy
- 4) Textiles, paper
- 5) Fixed constructions
- 6) Mechanical engineering
- 7) Physics
- 8) Electricity



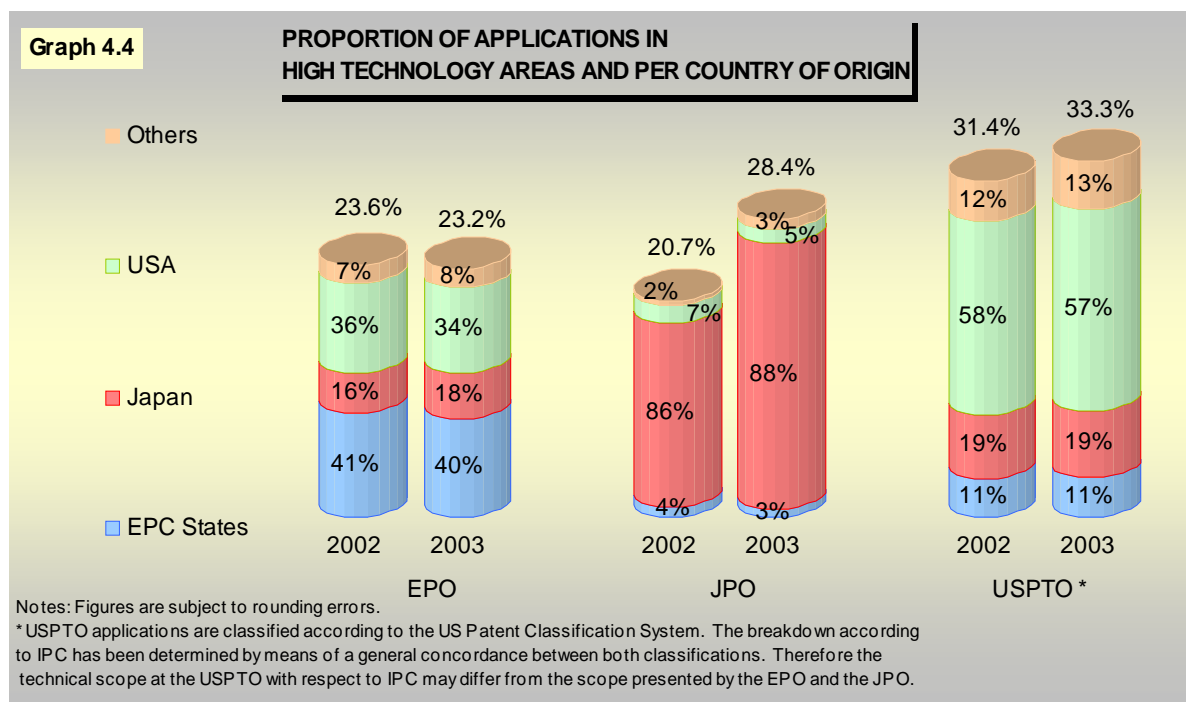
On a year-to-year basis, there is little change in the share these fields occupy at the Trilateral offices. Although the field of physics contributes to a smaller share of filings at the EPO than the other Trilateral offices, the field of chemistry and metallurgy contributes a larger portion than at the JPO and USPTO. Human necessities occupy a smaller share at the JPO than the other two offices.

Comparing 2003 to 2002, the share from the physics field of technology increased by 2% points at the USPTO and the electricity share fell by 1%. At the EPO, physics and performing operations and transportation increased each by 1%. From 2001 to 2002 at the JPO, there was a decrease of 2% in physics related technologies.

An increasing proportion of applications filed with the Trilateral offices are from high technology areas. In Graph 4.4, this proportion is given for each office in 2002 and 2003, together with their origin.

The patent classification does not itself define high technology fields. The Trilateral offices, however, previously agreed to consider as high technology the following fields:

- computer and automated business equipment,
- micro-organism and genetic engineering,
- aviation,
- communications technology,
- semi-conductors, and
- lasers.

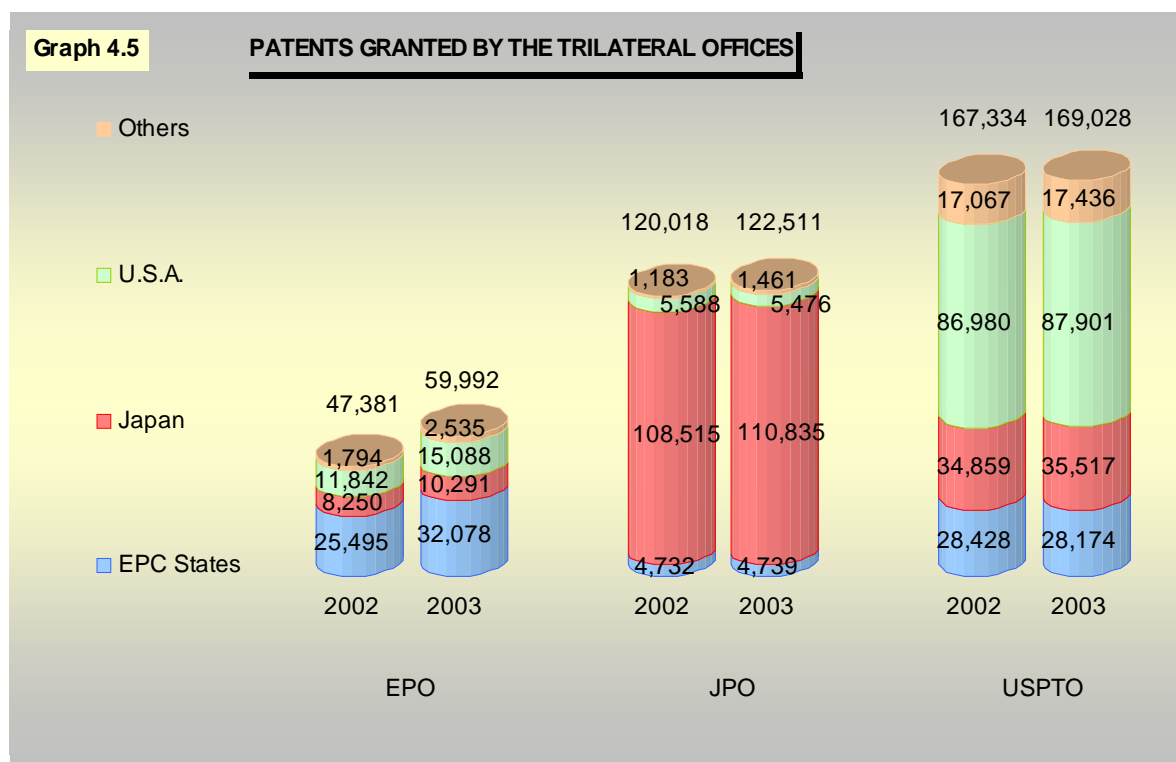


The USPTO has the highest share of patent applications in the high-tech field, with 33.3% of all applications occurring in this area. Of this number, 57% are from domestic applicants. At the JPO, where high-tech patent applications represented 28.4% of all applications in 2003, 88% of applications are from domestic applicants. At the EPO, the share of high-tech applications remained stable with 23.2% and about 40% are from EPC contracting states.

It is noticeable that the share of applications at the EPO from EPC contracting states in high technology is below their share on average in all filings at the EPO and at the USPTO (as shown in Graph 4.2). The share of the USA applicants in high technology is higher at the EPO and slightly higher at the USPTO than on average. The shares of Japanese applicants in high technology are sometimes slightly higher than their overall share of applications at the Trilateral offices.

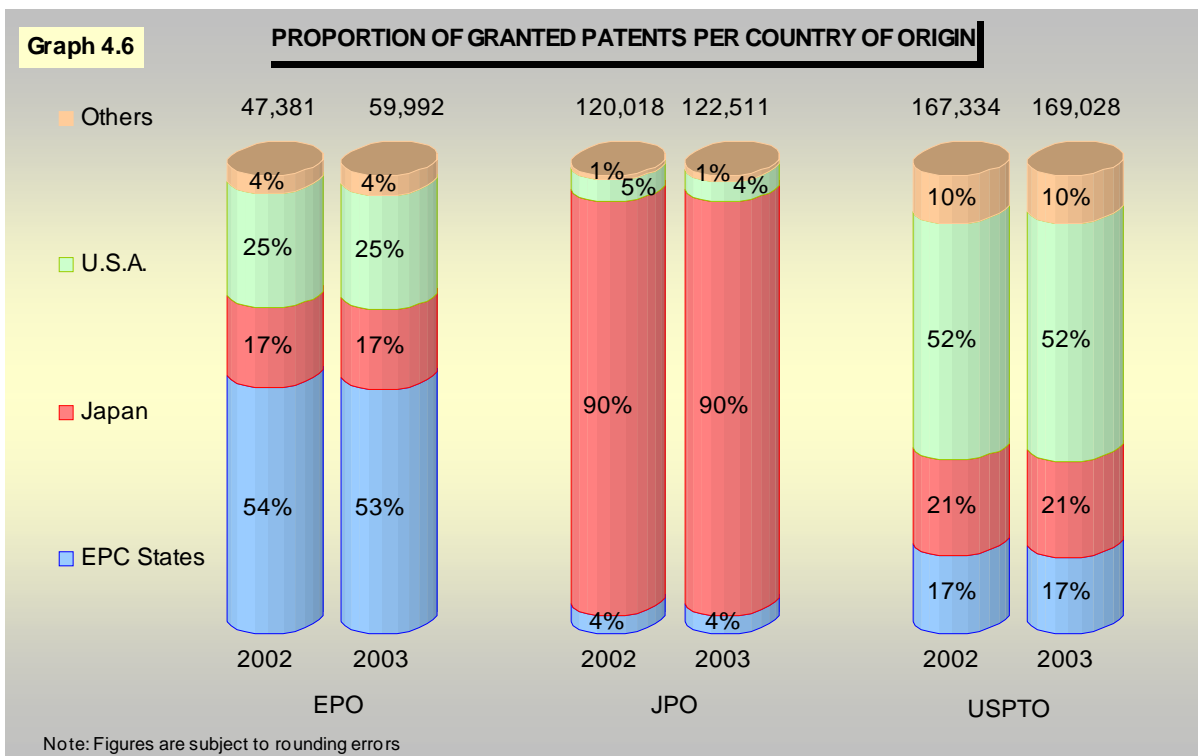
## PATENTS GRANTED BY TRILATERAL OFFICES

Graph 4.5 shows the number of patents granted by the Trilateral offices. The overall figure increased by 3.7% in 2002 and by 5.0% in 2003.



Patents granted by the JPO increased by 2.1% in 2003, reversing a downtrend, which started in 2000. The EPO experienced a further increase to 59,992 granted patents, or 26.6%, in 2003, after a 36.5% increase in 2002. The USPTO also experienced an increase in the number of patents granted, with 169,028 registrations in 2003, an increase of 1.0% over the previous year. This is the highest number of grants among the Trilateral offices.

Graph 4.6 presents the percentage share of total patents granted by origin. As indicated in this graph, the shares from the different filing blocs are more or less comparable to those observed for the filings in the JPO and the USPTO as presented in Graph 4.2.

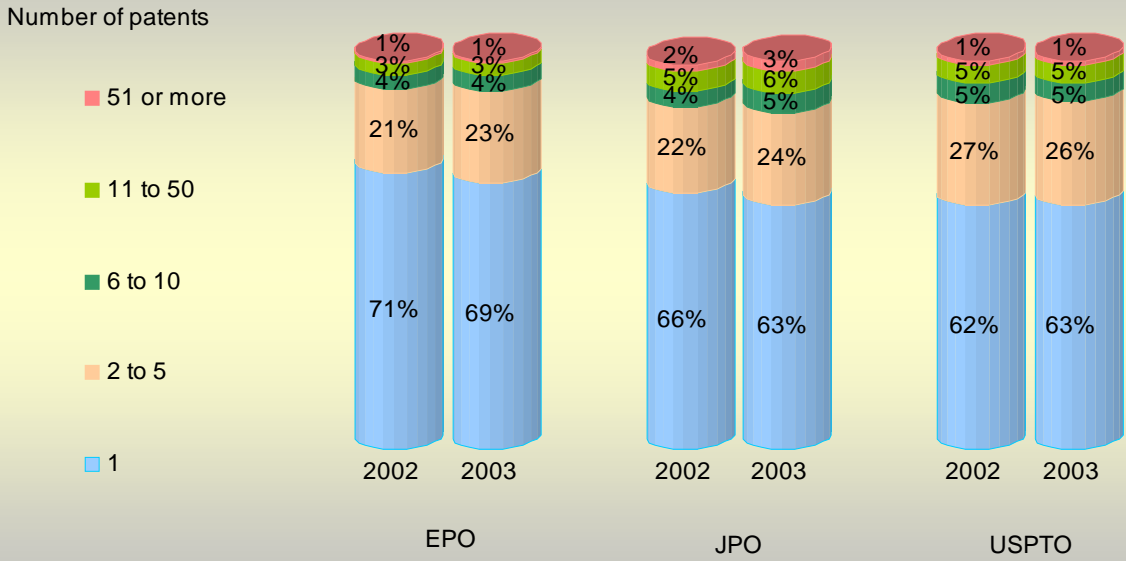


The differences between the Trilateral offices regarding the number of patents granted is mostly explained by the difference in the number of corresponding applications. In 2003, the maximum number of patents granted to a single applicant was 876 at the EPO, 4,240 at the JPO, and 3,415 at the USPTO.

The breakdown of patentees by number of patents granted is shown in Graph 4.7. The proportion of patentees receiving one patent grant was higher at the EPO (69%) than at the JPO (63%) or the USPTO (63%). The distribution of patentees with six or more patents remained essentially the same between 2002 and 2003 at the Trilateral offices. The greatest change occurred for patentees receiving one patent at the JPO. The share decreased from 66% in 2002 to 63% in 2003.

Graph 4.7

**DISTRIBUTION OF PATENTEEES BY NUMBER OF GRANTED PATENTS**



Note: Figures are subject to rounding errors

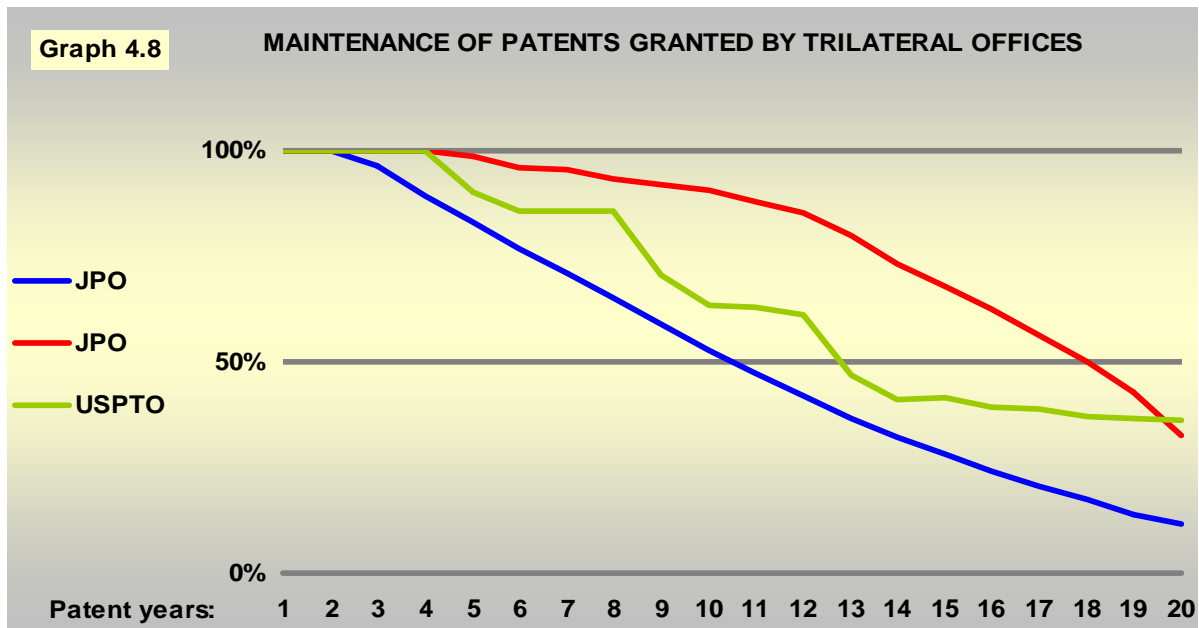
A patent granted by an office has a maximum term fixed by law. In all three offices, a patent has a twenty-year term from the date of filing. In order to maintain the protection right, the applicant has to pay renewal fees in the countries to which the protection pertains. Maintenance systems differ from country to country.

For a European patent, renewal fees have to be paid to the EPO from the third patent year onwards to maintain the application. After the application has been granted, annual renewal fees have to be paid to the national office of each designated contracting state where the patent is to be maintained.

For a Japanese patent, the first three years' fees are paid together, and for subsequent fees, the applicant can pay either yearly or in advance.

In the United States, patent maintenance requires payment of fees in three stages: 3.5 years, 7.5 years, and 11.5 years after grant.

In the three procedures, if a renewal fee is not paid in due time, the protection right expires. Graph 4.8 compares the rate of granted patent registrations existing and maintained each patent year. These figures are calculated from the year of application for the EPO and JPO and from the year of registration for the USPTO.



In the United States, over 50% of the patents granted are maintained for at least 12 years compared to 10 years for the European patents and 18 years for the Japanese patents.

## TRILATERAL PATENT PROCEDURES

### THE PROCEDURES

The grant procedures are not totally identical in the Trilateral offices. The major phases are outlined in Graph 4.9.

#### Examination: search and substantive examination

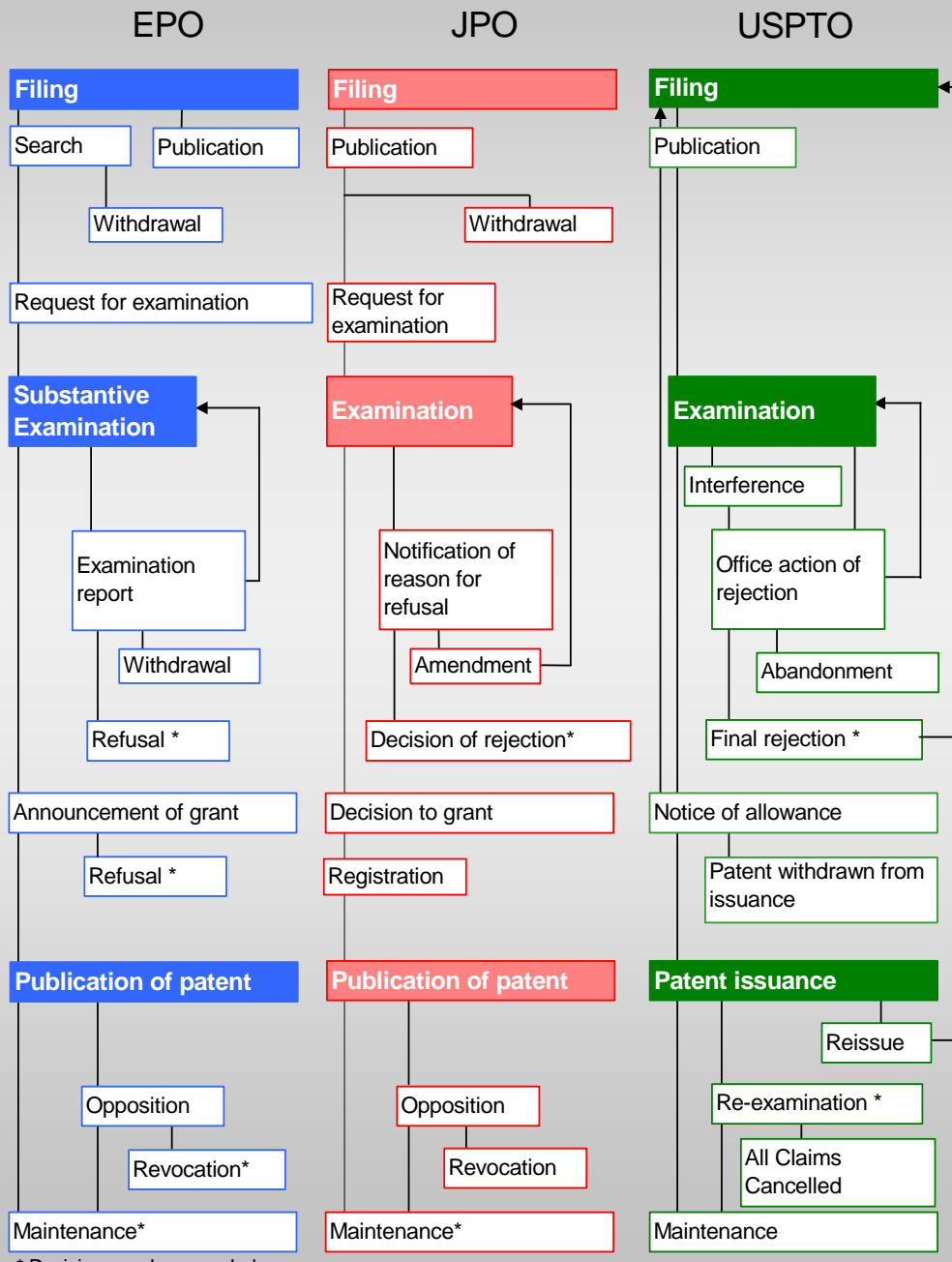
Each of the Trilateral offices will examine a filed patent application based upon novelty, inventive step, and industrial applicability. At the EPO, this examination is done in two phases. First, a search is done in order to establish the state of the art with respect to the invention. In a second phase, the inventive step and industrial applicability are examined in the substantive examination. In the national procedure before the JPO or the USPTO, the search and substantive examination are undertaken in one phase. The international searches and international preliminary examinations carried out by the three offices are not included in the flow chart, since for PCT applications, the granting procedure starts at the moment they enter the national or regional phase.

Filing of a European application with the EPO is taken to imply a request for search but not a request for substantive examination. For the latter, a separate request has to be filed no later than six months after publication of the search report. Filing of a national application with the JPO does not imply a request for examination; this may be filed up to three years after the date of filing (this delay was reduced from seven years in October 2001). Filing of a national application with the USPTO is taken to imply a request for examination.



**Graph 4.9**

# THE TRILATERAL PATENT PROCEDURES



## **Publication**

In the Trilateral offices, the application is to be published at the latest 18 months from the date of filing or priority date. The application can be published before 18 months at an applicant's request. In the USPTO, an application that has not and will not be the subject of an application filed in foreign countries does not need to be published if an applicant so requests.

## **Grant, refusal / rejection, withdrawal**

When an examiner intends to grant a patent, this information is communicated to the applicant (EPO: Announcement of grant; JPO: Decision to grant; USPTO: Notice of allowance). If a patent cannot be granted in the form as filed before the office, the intention to reject the application is communicated to the applicant (EPO: Examination report; JPO: Notification of reason for refusal; USPTO: Office action of rejection). The applicant may then make amendments to the application, generally in the claims, after which examination is resumed. This procedural step is iterated as long as the applicant continues to make appropriate amendments. Then, either the patent is granted (see above) or the application is finally rejected (EPO: Intention to refuse; JPO: Decision of rejection; USPTO: Final rejection) or withdrawn by the applicant (EPO: Withdrawal; JPO: Withdrawal or abandonment; USPTO: Abandonment). In addition, if no request for examination for an application is filed to the EPO or the JPO within the prescribed period (EPO: six months after publication of the search; JPO: three years from the date of filing, seven years until September 2001), the application will be deemed to have been withdrawn. Furthermore, in all three procedures, an applicant may withdraw or abandon the application at any time before the application is granted or finally refused.

After the decision to grant the patent, the patent specifications are published if certain administrative conditions are fulfilled (EPO: Publication of patent; JPO: Publication of patent; USPTO: Patent issuance).

## **Opposition**

Any person may file an opposition at the JPO against a grant of patent within six months from the publication of the Gazette containing the patent. Opposition can lead either to a maintenance or revocation of the patent.

At the EPO, the period for filing opposition(s) begins after granting of the patent rights and lasts nine months. If successful, the opposition can lead to a revocation of the patent or to maintenance in amended form.

In the procedure before the USPTO, there are two actions that may lead to the cancellation of a granted patent: interference proceedings and re-examination. These actions are not comparable to opposition procedures in the EPO and the JPO. In the USPTO, the first action is a priority contest between applicants / patentees seeking to protect the same invention and the second action may be requested by third parties or by the patentee during the lifetime of a granted patent.

## **Appeal**

An appeal can be filed by any of the parties concerned against a decision taken by the Trilateral offices. In practice, applicants can appeal decisions to reject the application or revoke the patent, while opponents can appeal decisions to maintain the patent. The procedure is in principle similar for the three offices. The examining department first studies the arguments brought forward by the appellant and decides whether the decision should be revised. If not, the case is forwarded to a Board of Appeal, which may take a final decision or refer the case back to the examining department.

In the JPO, generally appeal examiners examine the supplementary reasons brought forward by the appellant and decide whether the decision can be overturned. However, in the case that amendments of the claims or the drawings have been made within 30 days from the filing date of an appeal against a decision to refuse the application, the examiner first re-examines the amendment brought forward by the appellant in order to decide whether the decision can be overturned. If not, the case will be forwarded to the appeal examiners for a final decision.

## **STATISTICS ON PROCEDURE**

The 2002 and 2003 values of the basic characteristics of trilateral procedures are shown in Table 4. The definitions and further explanations on the statistics are given in the ANNEX, DEFINITIONS FOR STATISTICS ON PROCEDURE.

Definitions are not always identical in the three offices. This should be considered when seeking to make comparisons between the offices based on the provided information.

## **Rates**

The examination rate in the USPTO is 100%, since filing implies a request for examination in the USPTO procedure, whereas in the EPO and the JPO a specific request for examination has to be made. In the Japanese procedure, the examination rate is lowest because applicants have substantively more time in which to evaluate whether to maintain or drop the application.

The grant rate in the EPO procedure, as defined in terms of decisions, increased to 59%. In the JPO, the grant rate decreased further to 49.9% in 2003. In the USPTO, the grant rate, as defined by the number of applications allowed to be granted, is related to the decisions made in the examination procedure, and it decreased to 64% in 2003.

The opposition rate in the EPO slightly declined in 2003 to 5.2%, and 64% of the opposed patents were maintained although in some cases in amended form.

In the EPO, 604 appeals were received in 2003. This was about 43% of decisions in examination to reject the application (1,403). In the USPTO, 2,683 appeals were received. This was 3% of final rejections (91,981).

In the EPO, 50% of appealable decisions in the opposition procedure (2,220 in 2003) were appealed against; the number of appeals was 1,121.

The total number of appeals in the JPO against decisions in examination, including decisions on applications against which oppositions had been filed, increased further to 22,217 in 2003 (21,847 in 2002).

**Table 4: STATISTICS ON PROCEDURES**

<b>Progress in the procedure</b>		<i>Year</i>	EPO	JPO	USPTO
<b>Rates in percentage</b>					
Examination		2002	89	54.0	100.0
		2003	87	53.8	100.0
Grant		2002	58	51.4	65.0
		2003	59	49.9	64.0
Opposition		2002	5.4	3.3	-
		2003	5.2	3.5	-
Maintenance after opposition		2002	67.4	n.a.	-
		2003	64.0	n.a.	-
Appeal	On examinations	2002	45	-	4.0
		2003	43	-	3.0
	On oppositions	2002	49	-	-
		2003	50	-	-
	On examinations and oppositions*	2002	-	21,847	-
		2003	-	22,217	-
<b>Pendency in the procedures</b>					
Search	Number of pending applications	2002	118,300	-	-
		2003	102,700	-	-
	Pendency time in search (months)	2002	26.0	-	-
		2003	18.5	-	-
Examination	Number of applications awaiting request for examination	2002	16,410	2,189,727	-
		2003	21,270	2,181,211	-
	Number of pending applications	2002	223,700	500,420	n.a.
		2003	232,100	521,435	n.a.
	Time to first office action (months)	2002	23.0	24.0	16.6
		2003	20.8	25.0	18.3
	Pendency time in examination (months)	2002	40.6	28.7	24.8
		2003	37.7	31.1	26.7
Opposition	Number of pending applications	2002	1,250	n.a.	-
		2003	1,630	n.a.	-
	Pendency time in opposition (months)	2002	6.6	n.a.	-
		2003	8.8	n.a.	-

n.a. indicates unavailable data - indicates not applicable \* numbers available for JPO only

## **Pendency**

In the successive stages of the procedure, there are pending applications awaiting action in the next step of the procedure. The number of pending applications gives an indication of the workload (per stage of procedure) from the patent grant procedure in the three offices. This is not a good indication for the backlog in handling applications within the offices since a substantive part of pending applications are awaiting action from the applicant, for instance a request for examination (which can take three years from the date of filing in the JPO), or a response to actions communicated to the applicant.

Pending applications in search at the EPO decreased by 13% to 102,700 in 2003, and pending search in months decreased from 26 to 18.5 months.

The number of pending applications awaiting a request for examination by the applicant increased at the EPO with around 21,270 cases.

In the JPO, the number of pending applications (2,181,211) is substantively higher than those in the EPO and the USPTO, due to the period during which requests for examination can be filed.

The number of pending applications in examination increased in the EPO to about 232,100 in 2003, and the pendency in months decreased to 37.7 months, since more decisions were taken in 2003. In the JPO, the number of pending applications increased by 4.2% to about 521,435, and pendency was about 31.1 months. In the USPTO, the average time for either abandoning or issuing an application is about 26.7 months.

The pendency to first office action decreased in 2003 to 20.8 months in the EPO. It increased slightly in the JPO to 25 months, and to 18.3 months in the USPTO.

Pendency in opposition increased at the EPO to 8.8 months in 2003.