

PATENT FILINGS SURVEY 2014

INTENTIONS OF APPLICANTS REGARDING PATENT APPLICATIONS AT THE EUROPEAN PATENT OFFICE AND OTHER OFFICES

Munich, April 2015

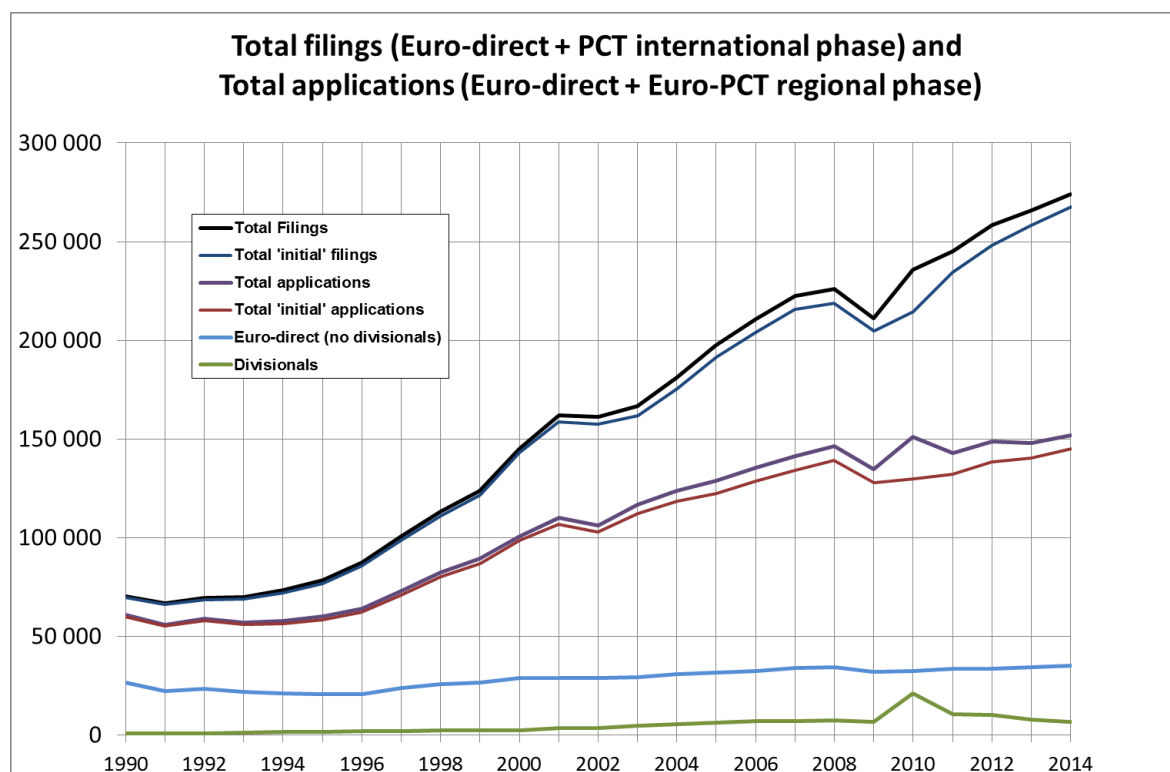
EXECUTIVE SUMMARY

- The forecasts and further analyses documented in this report originate from the results of the most recent annual Patent Filings Survey, carried out in the middle of 2014. The forecasts that are made for EPO Total filings exclude divisional filings.
- Based on this survey, Total filings growth at the European Patent Office for 2014 is estimated to be **+3.3% versus 2013** filings.
- The survey forecast predicted **266 951 Total filings for 2014**, compared to 267 600 actual Total filings in 2014. This forecast is in **excellent agreement with the growth rate of +3.6% actually observed from 2013 to 2014**.
- **Estimated errors associated with one-year growth forecasts are in line with the previous survey**, but slightly higher than in the 2011 and 2012 surveys. Estimated errors for two-year growth are generally lower than in the previous surveys. Estimated errors of three-year growth are in line with estimated errors previously observed.
- Broken down by residence blocs, **growth expectations of applicants from the OT and JP residence blocs continue to be more optimistic than growth expectations of applicants from the EP and US residence blocs**.
- **For 2015, the survey predicts +6.8% versus 2013** (+3.3% year-on-year), resulting in **275 872 Total filings at the EPO**.
- **For 2016, the final year for which a forecast was made, +9.6% growth versus 2013 has been forecast** (+2.6% year-on-year), resulting in **283 098 filings**.
- Estimates for growth of **PCT applications entering the regional phase** at the EPO are strong for the entire forecast period, with **+5.2%, +9.9% and +14.1% growth expected for the one-year, two-year and three-year periods**, respectively. Furthermore, the estimate of one-year growth **agrees nicely with the currently expected true one-year growth rate of +6.1% from 2013 to 2014**. Estimates based on the Biggest group continue to be somewhat more positive with respect to regional phase PCT applications.
- **Growth of Total EPO applications (Euro-Direct and Euro-PCT-RP filings) is estimated to be at +5.0% in 2014, +10.6% in 2015, and +13.8% in 2016 versus 2013**.
- Based on this survey, worldwide first filings were estimated to grow by **+3.9% from 2013 to 2014**, with **+7.2% growth from 2013 to 2015** (+3.1% year-on-year) and **+13.8% growth from 2013 to 2016** (+6.2% year-on-year)
- From other information provided in the survey, an estimate was made that **57% of EPO applicants are small and medium-sized enterprises (SMEs)** according to the EU definition (with 95% confidence limits from 49% to 65%). The **proportion of applications originating from SMEs was estimated at 18%** (with 95% confidence limits from 13% to 22%).

Commentary by the European Patent Office

Each year, the EPO carries out a survey of filing intentions of applicants for European patents. This report concerns the survey that was done in the summer of 2014 by the market research firm Ipsos. The main use that is made of the survey at the EPO is to provide information on probable filing developments for budgetary planning purposes. Applicants were approached for a Biggest group of about 400 largest clients and a Random group of about 2 800 from the general population, using a random sampling method that tends to favour larger applicants. The fieldwork period was performed from early May to mid-September 2014. There were 656 responses, which is unfortunately somewhat lower than the number achieved in previous years. The balance of responses between different areas of the world improved somewhat, however, particularly from larger and smaller companies in the United States.

The degree of agreement of the forecasts from the series of annual surveys up to now with the out-turns is assessed. The annexes describe the survey setup; fieldwork experiences and response rates; a collection of comments from participants; analytical methodology; forecasts broken down by technical areas; forecasts for worldwide first filings and for filings at other offices; and a description of respondent profiles including company economic attributes. Analyses are then provided of special questions from the current survey on small and medium-sized enterprise status, growth and characteristics of European patent portfolios, patent trading and licensing activities, and the current usage of patent intermediaries. The final two annexes report on population and sample descriptions.



The diagram shows the main types of European Patent that are forecast. These are the numbers of total ‘initial’ filings, which are direct European route filings (Euro-direct, here always excluding divisional filings) and PCT international phase filings (PCT-IP) taken together; and the numbers of total ‘initial’ applications, which are Euro-direct (excluding divisionals) and Euro-PCT regional phase filings (Euro-PCT-RP) taken together.¹ Total applications are explicitly forecast for the first time in the current survey, because these constitute an important downstream workload at the EPO that may best be forecast explicitly rather than by applying ratios to Total filings forecasts. The numbers of Euro-PCT-RP applications are also forecast separately, as in previous years.

Total filings at the EPO increased further in 2014, to a level which was well forecast in the previous 2013 survey as well as by the Random group in the 2014 survey. The projections for the numbers of Total filings in 2015 and 2016 show a continuation of positive growth. The favoured scenario for Total filings involves summation of forecasts broken down by blocs of residence of the applicants (Europe, Japan, US, Others) with winsorization to cut off the most extreme positive and negative growth rates (see Table 11). In terms of the widths of 95% confidence intervals for the forecasts, we were surprised to see that the variability of two and three-year forecasts is generally lower than that for the one-year forecasts. A possible explanation for this is given in Section 4.3.

The time series for Total applications has been flat in recent years and has not displayed the same level of growth as that for Total filings. Total applications did, however, increase from 2013 to 2014 and in this survey the Random group forecasts this growth quite well. Projections for the numbers of total applications in 2015 and 2016 are also quite positive. The favoured scenario for Total applications involves no breakdown of forecasts by blocs of residence of the applicants.

From the Biggest group, the forecasts for Total filings broken down by blocs of residence gives a drop of 0.2% from 2013 to 2014, which is smaller than the out-turn of positive growth that was observed, while forecasts without a residence bloc breakdown have a slightly larger drop (see Tables 5 and 6). The Biggest group forecasts for Total applications broken down by blocs of residence gives a growth of 4.5% from 2013 to 2014, which is larger than the out-turn that was observed, while forecasts without a residence bloc breakdown have an even larger growth (see Tables 28 and 29). The Biggest group represents the most important applicants in terms of the number of filings, but they are not representative of all applicants and the sample size is smaller than for the Random group. So we believe that forecasts should be taken from the Random group unless there is a strong reason not to.

Regarding the choice of scenarios in the Random group, Table 1, for example, shows that choices can be made either including or excluding cases with so-called critical codes, which means cases in which the responses indicate that the information given might be inconsistent. Ipsos have slightly restricted their options for choosing the favoured scenario by deciding once and for all at the beginning of the analysis that only scenarios including critical codes qualify for selection in this survey (see Section 4.3). In a couple of places, the scenarios excluding critical codes apparently fit the selection criteria slightly better. But the

¹ See Annex VIII for a more detailed description of the recent time series for Total ‘initial’ applications and their applicants.

out-come in terms of forecasts is hardly affected so this does not seem to be a serious problem.

In Annex V, fairly strong worldwide first filings growth up to 2016 is predicted although growth may be even higher than expected due to lack of information from China. Results also appear for questions on filings at specific national patent offices. Here there is evidence once again of further strong predicted growth of first filings to the Chinese Office (SIPO) by EPO's applicants (see Table 61).

Wherever practical, statistics are given in the report with breakdowns by main technical areas (called mega clusters) and by blocs of residence of the applicants. One feature is the larger average size of the companies responding from Japan and their higher response rate. This manifests itself in the statistics that relate to company sizes (see Table 35).

In Annex VI, there are analyses of respondents' profiles in terms of a number of regular questions. A new feature in the tables this year is a description of the cross-relation between pairs of technical areas of applicant companies in terms of a normalised mutual information statistic (see Tables 66 and 67). These technical areas (also known as joint clusters) group together largely as expected, most frequently within each of the five corresponding mega clusters.

Histograms then appear (from Fig. 14 onwards) about the numbers of employees in the companies. While the associated tables suggest that there may be no independent inventors making applications to EPO, it seems that this is an artefact since individual inventors were taken to be those respondents stating that their entity had no staff. Thus, individual inventors should be interpreted as part of the classes with 1 to 9 employees. Interesting features of the applicant population, including those on R&D expenditures and numbers of first filings broken down by residence blocs and main sectors areas, are shown in several tables starting from Table 72.

Many of the questions did not change between the last two annual surveys and this one, which allows for survey-to-survey reproducibility to be checked. Some of the measures relate to the sizes of applicant companies, examples of which are the calculated proportions of small and medium-sized enterprises (SMEs) with respect to applicants and applications. The percentages found for SMEs are consistent with previous surveys within the bounds of statistical error. The proportions of SMEs among applications are sensitive to the random sampling scheme, so respondents that answered for smaller or larger entities than were asked about were removed before making the calculations. For interest, all the main economic company statistics (as in Table 72 et seq.) were recalculated after excluding answers for smaller and larger entities. It turns out that the truncation usually reduces the weighted medians to some extent. This may be evidence that, on the whole, more people answered the survey for bigger entities than were asked about, rather than for smaller entities. Against this trend though, truncation for the US bloc increased the amount of R&D that might lead to patents and the percentage of inventive staff. This may mean that smaller US companies are on average somehow more inventive than bigger ones. For sectors, truncation increased the percentage of inventive staff for Organic Chemistry and Traditional mega clusters.

Annex VII includes analyses of responses to other questions. Questions similar to last year's on European patent portfolios indicate that the estimate of the mean proportion of portfolios that were non-existent in 2000 has decreased from 52% in the previous survey to 46% in this survey. The growth rate since 2000 for patent portfolios that did exist then has a median of 200% and a mean of 388%. The monetary value of the European patent portfolio for European resident applicants has a median of EUR 2.8 million and a mean of EUR 27 million, the difference being typical of company-size-related variables that have rather asymmetric distributions. These portfolio valuations are greater than those measured in the previous survey, probably mainly due to statistical effects of relatively small partial response rates for these questions. Another result suggests that only 10% of European resident applicants routinely monitor the values of their European patent portfolios.

From new questions in this survey, one may conclude that, for the EPO applicant population, 95% of all European patents have been acquired via their own R&D efforts. This may be even higher in Japan. Although results tables for the following are not given due to a data problem, there is an indication that where patents are purchased, these are usually directly from other operating entities rather than at patent auctions or via a consortium. Purchasing patents seems to be relatively more prevalent in the Organic Chemistry mega cluster (including Pharmaceuticals). With regard to disposals of IP rights to others, by far the largest amount of sales and licensing out was to Operating companies. Buying and licensing in was also done mainly from Operating companies, which was to be expected considering their high prevalence among the applicant population. But there was also some buying and licensing in from Independent inventors and Universities & research organisations. Buying in from Independent inventors is more common in Europe than in the other blocs, while licensing in from Universities and research organisations is more common in the US.

We are very grateful to the respondents for providing the data to allow for the various forecasts and estimates. Please try to participate in this survey in case you are approached with a request to do so in future. We would like the response rates to increase further in order to be able to improve the quality and accuracy of the analyses.

We will be happy to receive your feedback on any of the issues that are covered in this report. For this, you are most welcome to send an e-mail to EPO at the address below.

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1 Introduction

1.1 Background and objectives

Since 1996, the European Patent Office (EPO) has carried out the annual "Patent Filings" (formerly "Future Filings" and "Applicant Panel") survey among a group of its patent applicants. They are surveyed with the main objective of predicting the number of patent filings for the survey year and the following two years. The EPO uses the predictions as one of the ways of allocating resources in order to ensure a high service level when processing future patent filings.

In 2014, the nineteenth in the series of surveys took place. The interviews and data collection were undertaken by Ipsos, providing the EPO with the benefit of joint experience previously gained in similar surveys from 2001 to 2013. For the eleventh year in succession, Ipsos was also in charge of the data analysis and interpretation in 2014.

The primary objective of the survey was to calculate quantitative forecasts of patent filings at the EPO and other patent offices by various filing routes and applicants' residence blocs (EPC², Japan, USA, Others). The bloc breakdown may be of special interest when assessing the impact of varying economic environments around the globe. A secondary objective was to explore technological areas of patenting in order to make more detailed forecasts and to explore the relationship between R&D expenditures and patent applications. These two objectives remain constant from year to year, but a third objective has been to ask one-off questions on matters of topical interest. In this survey, the opportunity was taken to ask for information on European patent portfolios, activities on the patent market, and interactions with so-called patent aggregators.

Data were collected on the basis of 14 joint clusters, corresponding to the structure in which the EPO has organised its search, examination and opposition departments, and then amalgamated into five rather more meaningful "mega clusters".

1.2 Content and structure of this report

The survey involves establishing forecasts from basic filing types and residence blocs of the applicants. The basic filing types at the EPO are first and subsequent filings, each of which can be either Euro-direct or PCT international phase filings (PCT-IP). The PCT-IP applications can later on become PCT applications entering the regional phase (Euro-PCT-RP). At other offices, there are national filings and PCT applications entering the national phase (PCT-NP), the latter of which also originate as PCT-IP applications.

Section 1.3 outlines the characteristics of this year's survey and sample groups. **Section 2** provides high-level summaries of the predicted counts of Total filings and growth rates for 2014, 2015, and 2016 based on the recommended forecasting method. **Section 3** summarises forecasts (for Euro-direct and PCT-IP filings) based on two sample groups

² European Patent Convention (EPC) contracting states, considered here as at March 2014 with 38 members.

using the different forecasting methods, and puts the report into perspective by comparing results with those from previous surveys dating back to 2003. **Section 4** begins by describing the statistical methodologies employed for forecasting growth, and then provides forecast results (for Euro-direct and PCT-IP filings) for both sample groups with the various breakdown scenarios employed. **Section 5** focuses on forecasts for PCT applications entering the regional filing phase (Euro-PCT-RP). **Section 6** debuts an attempt to forecast Total applications at the EPO (Euro-direct and Euro-PCT-RP filings). The main part of the report wraps up with conclusions and an outlook in **Section 7**.

Annex I describes the survey fieldwork methodology as well as this year's questionnaire, and details the data validation procedures that were employed. **Annex II** reports on the comments on the survey received from respondents. **Annex III** contains details of the analytical methodology employed. **Annex IV** reports on forecasting results broken down by mega cluster. **Annex V** provides forecasts for applications at other national patent offices (national filings including worldwide first filings and PCT-NP filings). **Annex VI** provides an overview of the sample composition by the various joint clusters. This Annex also contains summary statistics and analyses for some of the economic characteristics of EPO applicants in 2013, including number of employees, R&D budgets, inventions, first filings, and some ratios including proportions of small and medium-sized enterprises. **Annex VII** reports on additional topics covered in this year's survey, including European patent portfolios and activities on the patent market. **Annex VIII** shows details of refiling behaviour of applicants in the population from year-to-year, and goes on to give details on the estimation of possible correction factors based on birth/death effects. Finally, **Annex IX** reports on population sizes and sample sizes underlying the 2014 survey.

1.3 The 2014 survey

The survey design was to a large extent similar to that of the previous years, using overlapping Biggest and Random groups of selected applicants. Sampling for both target groups was based on the raw name of each applicant after capitalising it, and the main results for EPO filings were calculated on counts excluding divisional applications.

The total number of applicants involved was 2 840, with most of the Biggest group also appearing in the Random group. The survey covered applicants for about 27% of the applications at the EPO (Euro-direct and PCT-IP filing numbers of Random gross sample relating to population, see **Annex IX**).

The EPO provided two **gross samples** of applicants drawn from the EPO database of applications (EPASYS) in early 2014.³

- "Biggest": This sample comprises the 415 largest applicants and was designed to allow for separate analysis of the intentions of the biggest applicants.
- "Random": This sample includes 2 785 applicants and was designed to represent all applicants of the parent population. It was obtained from a simple random sample of applications, with the effect of over-weighting large applicants due to their larger numbers of applications.

In addition to these two gross samples, the EPO also provided a booster sample for the US in order to increase the number of responses from this important country. For all analyses, the US boost is included in the Random sample.

Furthermore, this year, the EPO again added some specifically selected addresses of special interest as well as an additional list of aggregators/intermediaries in order to get valuable information from these on the new related topics in parts D and E of the questionnaire.

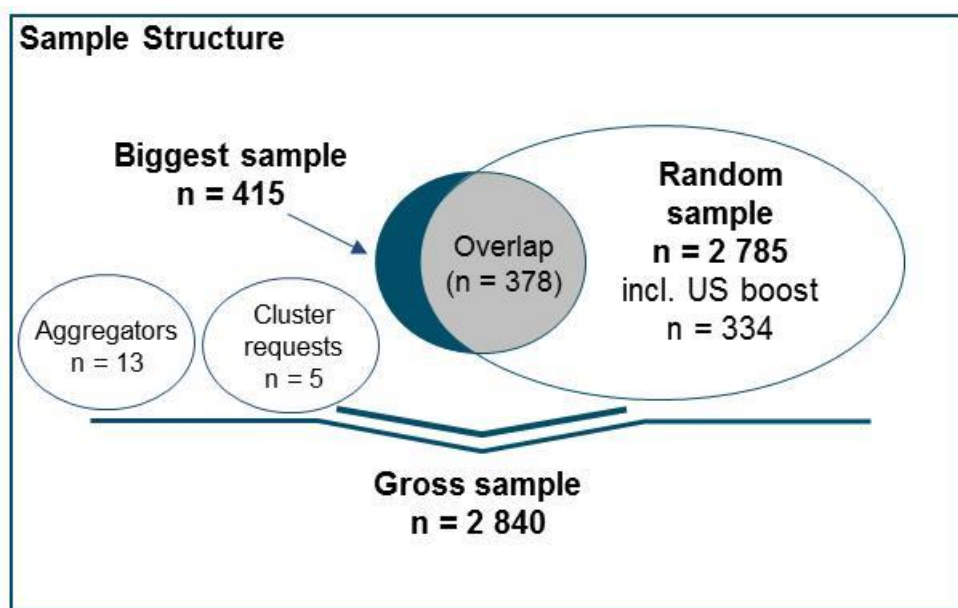


Figure 1: Sample structure of this year's survey

³ The sampling procedures were done on database counts for Euro-direct and Euro-PCT-RP filings only (PCT-IP filings were ignored for the sampling due to a lack of timeliness).

These samples were drawn separately, and the Random and Biggest groups contain an overlap of 378 large applicants that are part of both groups. Without double counting caused by the overlap, the gross sample included a total of 2 840 applicant addresses. Both samples should adequately represent the three regions of Europe, the US, and Japan. An exception is the US which is slightly over-represented in the gross addresses due to the additional boost sample. Other countries comprise a residual group for the rest of the world. The sampling scheme for the Random group should give other countries an adequate representation in terms of their number of patent applications to the EPO, except perhaps where there has been fast growth in PCT-IP filings from a low level in the most recent years.

In the first stage, valid addresses were found for 2 657 of the 2 840 applicants. Contacts were established for 1 955 applicants. The overall response rate in terms of the number of valid addresses was 24.7% (656 out of 2 657), lower than in the previous 2013 survey (28.0%, or 743, out of 2 651) for the same comparisons.

The survey was carried out via telephone and mail interviews with pre-established contact persons. Questionnaires were sent out from the beginning of May 2014, with interviews being completed by end of September. In total, 656 interviews were completed in 2014.

The questionnaire used for data collection was broadly similar to the one used in 2013 (see **Annex I**). It contained a full matrix of questions on patent filings and expectations for patent filings for the coming three years, in this case for 2014, 2015, and 2016, itemised by first and subsequent filings, not only at the EPO but also at other main worldwide patent offices. Apart from the main questions on predicting numbers of patent filings, questions were asked to elicit information on economic characteristics of applicants, including R&D expenditures and first filings by 14 joint clusters (roughly equivalent to industry segments) that are relevant to EPO operations. Descriptive information was also collected on company type and size in terms of persons employed, worldwide turnover, as well as number of staff that were involved in making inventions, classification into small and medium-sized enterprises (SME), and on European patent portfolio sizes. New questions were added to understand from what sources European patents were acquired over the past five years, to ascertain whether the monetary value of the European patent portfolio is monitored, and if possible to estimate this monetary value. In addition, the type of activity with respect to European patents by the applicant was collected, together with information about activity as a seller or buyer of European patents. Moreover, the types of other entities to which or from which European patents were traded (sold/bought) or licensed (to/from) over the past five years was asked about, as well as the share of the current European patent portfolio that was represented by European patents bought within the past five years.

For details of parent population, target persons, questionnaire topics, data collection procedure, and response statistics, refer to **Annex I**.

2 Forecast of future patent filings at the EPO

All actual and estimated filing totals refer to filings excluding divisional filings⁴. As a consequence, whenever this report refers to filings or Total filings, the counts excluding divisional filings are meant. It should be noted that, while this procedure ensures that all filing numbers contained are consistent (in the sense that they exclude divisional filings), it also means that filing numbers cannot easily be compared to filing numbers stated in reports of this survey prior to 2010.

Based on the recommended forecasting method explained in **Section 3**, the estimated growth rates (with respect to 2013) for Total filings excluding divisional filings were calculated as **3.3%** for **2014**, **6.8%** for **2015**, and **9.6%** for **2016**. The **overall survey forecast** for Total filings excluding divisionals in **2014** is **266 951**, with approximate 95% confidence limits of **256 951 to 276 952**, resulting in a deviation⁵ of 3.7%. This forecast slightly underestimates the currently assumed figure of 267 600 for actual 2014 filings excluding divisionals, but this number is still well within the 95% confidence limit of the forecast. The estimated percentage of PCT-IP filings amongst Total filings for 2014 is 79.3%, which is also in good agreement with the actual value of 80.0%. For **2015**, the recommended forecasting method predicts **275 872** Total filings with approximate 95% confidence limits of **268 194 and 283 550**. For **2016**, the recommended method estimates **283 098** Total filings with approximate 95% confidence limits of **273 938 and 292 257**.

For estimates of Total filings, forecasts based on the Biggest group this year are more pessimistic than estimates based on the Random group. In fact, both estimates based on the Biggest group predict slightly negative one-year growth from 2013 to 2014.

In summary, this year's survey predicts steady growth for the entire forecast period from 2014 to 2016, with modest growth in filing totals for 2014 and a return to stronger growth forecast for 2015 and 2016. Similarly to last year, all but one three-year growth estimate predict growth slightly below 10% from 2013 to 2016 (in **Tables 1** and **2** below). This year's one-year forecasts exhibit slightly higher deviations than those seen for one-year growth in most surveys prior to 2013, while deviations for two-year growth are lower than last year's. Deviations in three-year forecasts are similar to last year's. Compared to the previous survey, this year, there is greater heterogeneity among the individual one-year forecasts based on the Random group, with better agreement among forecasts for the two and three-year horizons. Both forecast approaches based on the Biggest group offer similar estimates for the entire forecast period.

⁴ The survey question on filings at the EPO specifically excludes divisional filings in the counts, so divisional filings were excluded from all the actual and predicted filing counts.

⁵ Deviation is the distance from the filings number forecast to the lower 95% confidence limit of the forecast as a percentage of the filings number forecast.

As in previous years, it was also possible to analyse the questions on PCT filings entering the regional phase at the EPO (Euro-PCT-RP). Compared to the previous survey, a return to strong growth is anticipated for regional phase filings. For the Biggest group, growth rates (compared with 2013) can be estimated at 7.2% in 2014, 6.9% in 2015, and 9.9% in 2016. For the Random group, growth rates can be estimated at 5.2% in 2014, 9.9% in 2015, and 14.1% in 2016. For Euro-PCT-RP filings, growth estimates based on the Biggest group are generally in reasonable agreement with the estimates based on the Random group.

In terms of Total Applications (Euro-direct + Euro-PCT-RP) for which a survey-based forecast was attempted for the first time this year, growth rates (compared to 2013) based on the recommended forecast are estimated at +5.0% in 2014, +10.6% in 2015, and +13.8% in 2016.

3 Summary of forecasts and comparison with previous Patent Filings Surveys

3.1 Summary of this year's forecasts for Total filings

This report presents and discusses a variety of different forecasting approaches. Overviews of the main results presented in **Section 4** are summarised in **Table 1** with respect to growth rates, and in **Table 2** for the resulting filing numbers predicted.

Comparison of forecasts: Growth from 2013
Euro-direct and PCT-IP

			Year					
Critical codes	Group	Breakdown	2014		2015		2016	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Included	Biggest	None	-0.5%		4.9%		7.1%	
Included	Biggest	Residence bloc	-0.2%		4.5%		6.5%	
Included	Random	None	1.2%	3.3%	6.2%	3.2%	8.7%	3.4%
Included	Random	None (winsorized)	1.9%	2.6%	6.8%	2.6%	9.2%	2.9%
Included	Random	None (Euro-direct and PCT-IP filings combined)	0.8%	3.1%	6.6%	3.2%	9.1%	3.5%
Included	Random	Residence bloc	4.4%	5.5%	6.2%	3.2%	9.8%	4.3%
Included	Random	Residence bloc (winsorized)	3.3%	3.7%	6.8%	2.8%	9.6%	3.2%
Included	Random	Residence bloc (Euro-direct and PCT-IP filings combined)	3.7%	5.2%	8.9%	3.2%	13.0%	3.6%
Excluded	Biggest	None	0.2%		6.8%		9.0%	
Excluded	Biggest	Residence bloc	0.9%		7.8%		10.5%	
Excluded	Random	None	1.1%	3.3%	5.8%	3.1%	8.3%	3.4%
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	0.8%	3.2%	6.4%	3.2%	8.9%	3.5%
Excluded	Random	Residence bloc	3.5%	4.9%	5.9%	2.9%	8.2%	3.3%
Excluded	Random	Residence bloc (Euro-direct and PCT-IP filings combined)	4.7%	5.5%	9.3%	2.9%	13.4%	3.3%
Actual Growth			3.6%					

Table 1: Predicted growth rates for Total filings by forecasting method

Comparison of forecasts: Predicted total filings
Euro-direct and PCT-IP
LCL/UCL indicates lower/upper 95% confidence limit

			Year									
Critical codes	Group	Breakdown	2014				2015			2016		
			Predicted filings	LCL	UCL	RMSEF*	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Included	Biggest	None	256 904				271 052			276 535		
Included	Biggest	Residence bloc	257 885				270 034			275 228		
Included	Random	None	261 407	252 907	269 908	7 560	274 229	265 570	282 888	280 917	271 281	290 553
Included	Random	None (winsorized)	263 348	256 477	270 218	5 511	275 841	268 641	283 040	281 982	273 833	290 132
Included	Random	None (Euro-direct and PCT-IP filings combined)	260 473	252 321	268 626	8 252	275 354	266 420	284 287	281 910	272 000	291 819
Included	Random	Residence bloc	269 607	254 875	284 339	7 780	274 315	265 618	283 012	283 520	271 253	295 786
Included	Random	Residence bloc (winsorized)	266 951	256 951	276 952	5 143	275 872	268 194	283 550	283 098	273 938	292 257
Included	Random	Residence bloc (Euro-direct and PCT-IP filings combined)	267 993	254 138	281 848	7 080	281 327	272 308	290 347	291 804	281 275	302 333
Excluded	Biggest	None	258 845				275 848			281 645		
Excluded	Biggest	Residence bloc	260 678				278 428			285 335		
Excluded	Random	None	261 221	252 622	269 821	7 742	273 264	264 699	281 830	279 687	270 161	289 212
Excluded	Random	None (Euro-direct and PCT-IP filings combined)	260 440	252 185	268 695	8 307	274 733	265 847	283 618	281 224	271 344	291 103
Excluded	Random	Residence bloc	267 319	254 279	280 359	6 659	273 628	265 581	281 675	279 473	270 146	288 800
Excluded	Random	Residence bloc (Euro-direct and PCT-IP filings combined)	270 341	255 477	285 206	8 064	282 286	274 000	290 571	293 047	283 288	302 807
Actual Filings			267 600									

*) RMSEF: Root mean squared error of forecast

Table 2: Predicted Total filings by forecasting method

A priori, the Biggest group is not the preferred sample on which to base overall estimates of growth rates and filings, since its composition is skewed towards large companies. Although it gives valuable information about the intentions of major applicants to the EPO, it is not representative of the overall EPO applicant population in the same way that the Random group is.

When considering which forecasting method to use for the Random group, our recommendation remains to use the one that minimises the "root mean squared error of forecast" (RMSEF)⁶. The RMSEF for each estimate is shown in **Table 2**. Based on this criterion, we recommend using the forecast broken down by residence bloc and employing winsorization. Its one-year estimate aligns best of all estimates with the current expectation of actual filings in 2014. In combination with a low deviation for the one-year growth forecast (partly to be expected due to the winsorization process), this leads to a clear minimisation of the RMSEF. The filing estimates using the recommended prediction method are **266 951** for **2014**, **275 872** for **2015**, and **283 098** for **2016**. For the two and three-year time horizon, our recommended forecast is roughly representative of other forecasts based on the Random group. At the same time, our recommended forecast is somewhat more optimistic than the long-term estimates based on the Biggest group. As is usually the case in these annual surveys, this year forecasts based on the Random group are on balance more optimistic than those based on the Biggest group.

Due to the design of the survey, growth estimates and predicted filing totals based purely on these survey data cannot properly account for birth and death effects in the true EPO applicant population. **Annex VIII** details the calculation of correction factors to overcome this issue. This year, inclusion of the correction factors would serve to increase expected filing counts for 2014 and 2015, while reducing the number of filings expected for 2016. However, these changes are small, and in order to remain consistent with recent reports, separate predictions including correction factors are not included here.

⁶ See Section 10.5 for an explanation of the RMSEF.

3.2 Comparison with previous Patent Filings Surveys

Figure 2 and **Table 3** as well as **Figure 3** and **Table 4** compare the forecasting results of previous surveys since 2003 for the Biggest and the Random groups, respectively.

The **precision of predictions** from previous years' surveys can be evaluated by comparison with actual filing numbers, which are given in the last row of the respective tables.⁷ The numbers forecast are given as percentage values of the actual filings in brackets. For the recommended forecasts, deviation in terms of the percentage of actual filings remains between 90% and 105%, with the notable exception of estimates based on the 2007 and 2008 surveys for the crisis-affected years of 2009 and 2010. Predictions from the 2012 survey have turned out to be rather precise, not just for one-year growth from the survey year but also for two year and three-year growth.

For the Biggest group estimates, the 2012 and 2013 estimates have performed quite well, with a small but consistent underestimation of actual growth. For 2014, estimates based on the Biggest group again appear to moderately underestimate true growth.

Concerning which sample to base estimates on, in retrospect, estimates based on the Random group were slightly more accurate than estimates based on the Biggest group, with the exception of estimates of the 2007 survey for 2008, and the 2008 survey for 2009 and 2010, where the Biggest group can now be seen to have fared better, but probably only because of its inherent pessimism that coincided with the recession.

⁷ See also an analysis of several earlier surveys in Dannegger, F. and Hingley, P., "Predictive accuracy of survey-based forecasts for numbers of filings at the European Patent Office", World Patent Information (2013), 35:187-200.

Comparison of forecasts since 2003 based on Biggest Sample without subsidiary breakdown

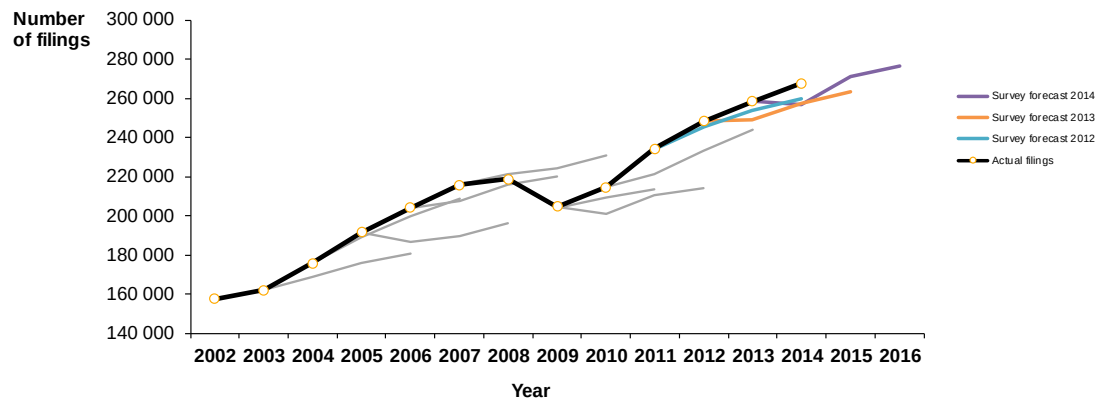


Figure 2: Comparison of forecasts since 2003 (Biggest group with no subsidiary breakdown)

Comparison of forecasts since 2003 based on Biggest Sample without subsidiary breakdown

Number of filings* forecasted based on ...	Forecasting Year														
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
... 2003 survey (in % of actual filings)	157 434 (=actual)	..**	..**	..**											
... 2004 survey (in % of actual filings)		161 932 (=actual)	168 905 (96%)	175 647 (92%)	180 869 (89%)										
... 2005 survey (in % of actual filings)			175 643 (=actual)	188 713 (99%)	199 455 (98%)	208 532 (97%)									
... 2006 survey (in % of actual filings)				191 499 (=actual)	186 500 (91%)	189 297 (88%)	195 854 (90%)								
... 2007 survey (in % of actual filings)					204 027 (=actual)	207 557 (96%)	215 853 (99%)	219 717 (107%)							
... 2008 survey (in % of actual filings)						215 586 (=actual)	221 086 (101%)	223 897 (109%)	230 688 (108%)						
... 2009 survey (in % of actual filings)							218 757 (=actual)	203 663 (100%)	209 379 (98%)	213 281 (91%)					
... 2010 survey (in % of actual filings)								204 600 (=actual)	201 136 (94%)	210 322 (90%)	214 193 (86%)				
... 2011 survey (in % of actual filings)									214 430 (=actual)	221 120 (94%)	233 136 (94%)	243 874 (94%)			
... 2012 survey (in % of actual filings)										234 267 (=actual)	245 211 (98%)	253 902 (99%)	259 949 (97%)		
... 2013 survey (in % of actual filings)											248 166 (=actual)	248 858 (96%)	257 570 (96%)	263 346 (N/A)	
... 2014 survey (in % of actual filings)												258 319 (=actual)	256 904 (96%)	271 052 (N/A)	276 535 (N/A)
Actual filings	157 434	161 932	175 643	191 499	204 027	215 586	218 757	204 600	214 430	234 267	248 166	258 319	267 600	N/A	N/A

*) First and subsequent Euro-direct and PCT-IP filings excluding divisional filings
 **) The 2003 survey did not analyze the Biggest group without subsidiary breakdown

Table 3: Comparison of forecasts since 2003 (Biggest group with no subsidiary breakdown). Precision values (value of point estimate in % of true value) in brackets

Comparison of forecasts since 2003 based on the recommended forecast

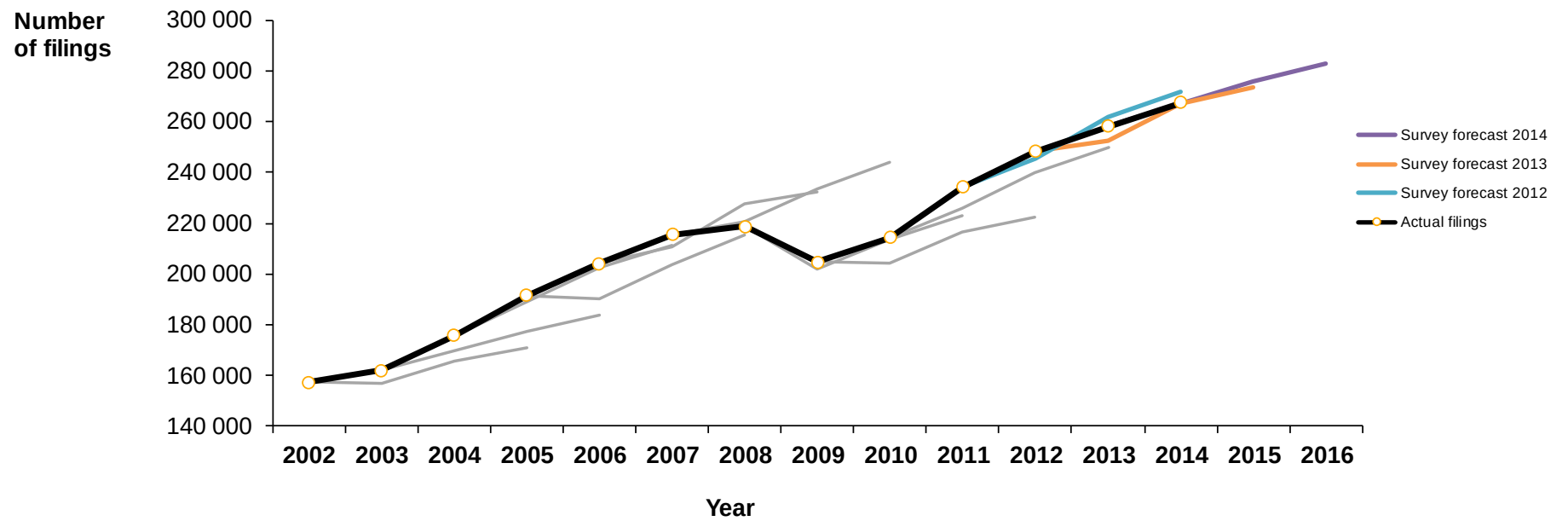


Figure 3: Comparison of recommended forecasts since 2003 (Random group)

Comparison of forecasts since 2003 based on the recommended forecast

Survey year	Recommended forecast method	Forecast ¹⁾	Forecasting Year														
			2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2003	Random group with residence bloc breakdown (EPC and Others combined)	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit	157 434 (=actual)	157 121 (97%) 155 007 166 525	165 668 (94%) 160 982 178 091	171 061 (89%) 166 171 184 680											
2004	Random group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit		161 932 (=actual)	169 516 (97%) 164 250 184 661	177 656 (93%) 170 228 195 439	183 606 (90%) 175 084 202 830										
2005	Random group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit			175 643 (=actual)	188 798 (99%) 186 324 203 023	202 471 (99%) 197 983 219 560	211 427 (98%) 205 505 230 509									
2006	Random group with residence bloc breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit				191 499 (=actual)	190 338 (93%) 178 298 214 506	203 939 (95%) 187 051 233 821	215 408 (98%) 196 847 247 694								
2007	Random&Smallest group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit					204 027 (=actual)	210 409 (98%) 209 961 224 927	227 451 (104%) 227 359 242 753	232 362 (114%) 231 081 249 180							
2008	Random group without subsidiary breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit						215 586 (=actual)	220 374 (101%) 219 446 234 509	233 575 (114%) 231 547 249 601	243 890 (114%) 240 746 261 649						
2009	Random group without subsidiary breakdown Euro-direct and PCT-IP filings combined	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit							218 757 (=actual)	202 063 (99%) 201 830 216 251	213 529 (100%) 211 940 229 862	222 822 (95%) 220 420 240 610					
2010	Random group without subsidiary breakdown Euro-direct and PCT-IP filings combined	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit								204 600 (=actual)	204 354 (95%) 199 117 209 591	216 620 (92%) 210 324 222 915	222 160 (90%) 215 126 229 195				
2011	Random group with residence bloc breakdown (winsorized)	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit									214 430 (=actual)	226 027 (96%) 212 517 239 536	239 711 (97%) 223 930 255 492	249 925 (97%) 232 328 267 522			
2012	Random group with residence bloc breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit										234 267 (=actual)	245 346 (99%) 238 788 251 903	262 090 (101%) 251 178 273 003	271 727 (102%) 256 786 286 668		
2013	Random group with residence bloc breakdown	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit											248 166 (=actual)	252 305 (98%) 241 921 262 689	266 948 (100%) 255 429 278 467	273 621 (N/A) 258 522 288 721	
2014	Random group with residence bloc breakdown (winsorized)	Number of filings (in % of actual filings) Lower confidence limit Upper confidence limit												258 319 (=actual)	266 951 (100%) 256 951 276 952	275 872 (N/A) 268 194 283 550	283 098 (N/A) 273 938 292 257
		Actual filings	157 434	161 932	175 643	191 499	204 027	215 586	218 757	204 600	214 430	234 267	248 166	258 319	267 600	N/A	N/A

¹⁾ First and subsequent Euro-direct and PCT-IP filings excluding divisional filings

Table 4: Comparison of recommended forecasts since 2003 (Random group). Precision values (value of point estimate in % of true value) in brackets

4 Methodology and individual forecasts

Section 4.1 details the methodology employed for obtaining the growth forecasts. In **Sections 4.2** and **4.3**, results for the Biggest group and the Random group are presented, respectively.

4.1 Methodology and structure of results

The main part of the survey covers the predictions of future patent filings. The basic approach was the same as in the previous surveys. For a detailed description of the methodology see the *Applicant Panel Survey 2002 report*. This is summarised in **Annex III**. The survey data from the main questions in **Part B** of the questionnaire are used to measure patent growth rates.

For the Biggest group, growth rates are calculated as a **Composite index** (see **Annex III, Section 10.1**), which is in essence an index constructed using the number of filings in the base year in the denominator and using the intended number of filings for a forecast year in the numerator.

Growth rates in the Random group are calculated as a **Q-index** (see **Annex III, Sections 10.2** and **10.3** for details). This involves weighting each applicant's response with a so-called Poisson weight, to account for the fact that the Random group is a random sample of applications, rather than of applicants. The number of filings an applicant has made is a central factor in the determination of the Poisson weight. Traditionally, and in order to align with the sampling procedure, this number of filings was taken from the EPO's database recorded for each applicant. Using these "database-tethered Poisson weights" ensures that the number of filings which directly determine each applicant's probability of inclusion in the sample is used in the weighting procedure.

However, the respondent is also asked to give the number of filings that were made in the base year on the questionnaire, and this may differ from the number recorded in the EPO's database. One of the main reasons for this is that the respondent may possibly be answering for a different, or overlapping, entity to the one that was selected as assumed from the EPO's database. Or the respondent may represent a smaller or larger company than the database entity does. The extent of such mismatching was minimised by selecting applicants from the database using capitalised names, with some further amalgamation of obviously identical applicants.

As in previous years, a natural logarithmic transformation was applied to the data before calculating the Q-index. A finite population correction (FPC) was included when calculating the confidence limits for forecasts of total patent filings. For an explanation of this methodology including references to more detailed documentation, see **Annex III**.

When analysing subsets, e.g. itemisations by residence bloc or mega cluster, cases arise where the sample size falls below a critical threshold of five respondents. In such cases, for either the Composite index or the Q-index, replacement is done by a growth value taken from the corresponding analysis on the next available level of aggregation (typically

ignoring residence bloc breakdowns). In tables containing growth index estimates, the replacement of growth indices by aggregated values is marked with an asterisk (*).

Once the growth indices were calculated based on the survey results, they were multiplied by the actual numbers of filings (excluding divisional filings) in the 2013 base year in order to generate explicit forecasts. Data on Euro-direct, PCT-IP, and Euro-PCT-RP filings for 2013 and 2014 were supplied by the EPO on 13 February 2015, and reflect the status of the database about one week before that date.

In many cases, the responses on growth forecasts in the questionnaire (**Part B**) made it necessary for the researchers to validate them, usually by conducting a clarifying conversation with the respondent. After the validation attempts, the validity and integrity of some responses remained doubtful and such cases were marked with a **critical code**. In this year's survey, **35** cases, or **4.7%**, of survey responses were ultimately marked with a critical code. There are also non-critical codes. For details, refer to the plausibility checks described in **Annex I, Section 7.6**.

As in previous years, all growth forecasts were carried out twice: once on the full data set including those cases marked with a critical code, and once on a reduced set of cases which do not carry any critical code. The summary tables shown in **Section 3.1** thus show results for both sets of data, while the detailed tables in this report always refer to the full data set including cases with critical codes (unless explicitly stated otherwise).

The patent filing predictions are presented in various **breakdown** scenarios (typically by filing types, blocs of residence, and mega-clusters). Based on the resulting forecasts, an overall growth forecast is derived for each year based on an accumulation of the individual forecasts. The breakdown scenarios that are based on so-called mega clusters are of some interest to look for variations between major industrial areas of patenting. Mega cluster forecasts are shown as growth rate forecasts only, and appear in **Annex IV**.

As a means of analysing and reducing distortions by outliers, the technique of **winsorization** was applied to some of the forecasts as an additional forecast approach. See **Section 10.6** for details on winsorization.

4.2 Biggest group

This year, the Biggest group is based on a sample of **415 total addresses** for Euro-direct filings and Euro-PCT-RP filings, comprising applicants making at least **40** such applications (excluding divisionals) in **2013**. From this group, **414** addresses were found and **155** applicants responded to the survey (**37.4%**).

Using the Composite index, detailed information on the forecasts by filing type and route are shown in **Table 5** and **Figure 4** (no subsidiary breakdown). **Table 6** shows details of the forecasts by filing type and route, broken down by residence bloc. No confidence limits are given for the estimates as this is a survey of the intentions of the Biggest applicants and not of a random statistical sample.

Both tables show that the forecasts for 2014 predicted around 10 000 filings less than the out-turn. The implied PCT-IP filings percentages of 78.5% or 78.8%, based on these forecasts, slightly underestimate the actual percentage of PCT-IP filings of **80.0%** in **2013**.

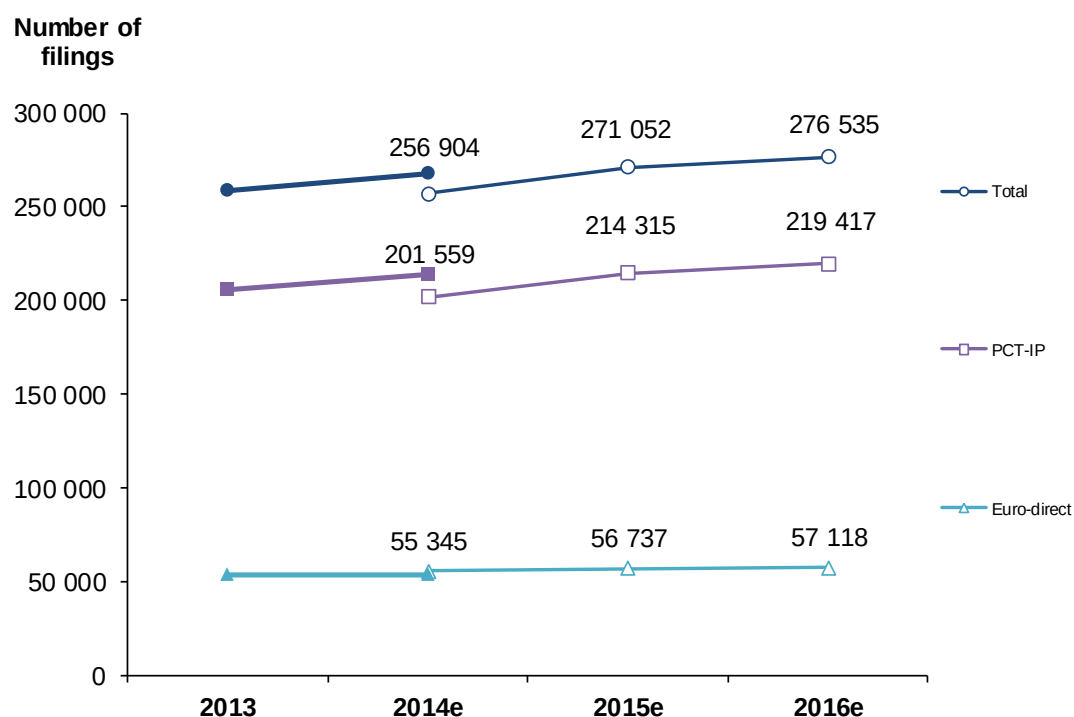


Figure 4: Forecasts for EPO filings – Biggest group with no subsidiary breakdown (solid marks indicate actual numbers, outlined marks indicate estimates)

Biggest group (including critical codes)
No subsidiary breakdown
Composite indices

			Year										
			2013	2014				2015			2016		
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Index 14	Predicted filings	Actual filings	Cases 15	Index 15	Predicted filings	Cases 16	Index 16	Predicted filings
First	Euro-direct	Total	21 807	85	1.0431	22 746	22 909	69	1.0453	22 795	64	1.0831	23 619
	PCT-IP	Total	24 142	56	0.8437	20 370	25 222	46	1.1582	27 962	44	1.1782	28 444
Subsequent	Euro-direct	Total	31 244	94	1.0434	32 599	30 491	75	1.0864	33 942	71	1.0722	33 500
	PCT-IP	Total	181 126	120	1.0004	181 189	188 978	99	1.0289	186 353	95	1.0544	190 973
All	Euro-direct	Total	53 051			55 345	53 400			56 737			57 118
	PCT-IP	Total	205 268			201 559	214 200			214 315			219 417
Grand total			258 319			256 904	267 600			271 052			276 535
Growth from 2013						-0.5%	3.6%			4.9%			7.1%
Implied % PCT-IP			79.5%			78.5%	80.0%			79.1%			79.3%

Table 5: Forecasts for EPO filings – Biggest group with no subsidiary breakdown

Biggest group (including critical codes)
Breakdown by residence bloc
Composite indices

			Year											
			2013	2014				2015			2016			
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Index 14	Predicted filings	Actual filings	Cases 15	Index 15	Predicted filings	Cases 16	Index 16	Predicted filings	
First	Euro-direct	EP	20 044	62	1.0216		20 476	21 415	50	1.0136	20 316	47	1.0369	20 784
		JP	275	7	1.4825		408	229	5 *	1.0453	287	5 *	1.0831	298
		OT	784	0 *	1.0431		818	533	0 *	1.0453	820	0 *	1.0831	849
		US	704	16	1.2891		908	732	14	1.5431	1 086	12	1.8320	1 290
		Total	21 807	85			22 609	22 909	69		22 509	64		23 220
First	PCT-IP	EP	6 613	28	0.8379		5 541	6 928	24	0.9714	6 424	23	1.0042	6 641
		JP	6 697	13	1.1104		7 436	6 433	10	1.0985	7 356	10	1.1243	7 529
		OT	5 950	1 *	0.8437		5 020	6 235	1 *	1.1582	6 892	1 *	1.1782	7 010
		US	4 882	14	0.7484		3 654	5 626	11	1.3768	6 722	10	1.3798	6 737
		Total	24 142	56			21 652	25 222	46		27 394	44		27 917
Subsequent	Euro-direct	EP	14 140	54	1.0371		14 664	13 930	43	1.1568	16 357	41	1.1230	15 879
		JP	5 704	18	0.8612		4 912	5 427	15	0.8838	5 041	15	0.8889	5 070
		OT	5 680	1 *	1.0434		5 926	5 308	1 *	1.0864	6 171	1 *	1.0722	6 090
		US	5 720	21	1.1438		6 542	5 826	16	1.0823	6 191	14	1.0815	6 186
		Total	31 244	94			32 045	30 491	75		33 759	71		33 225
Subsequent	PCT-IP	EP	50 892	69	0.9726		49 499	50 804	56	1.0139	51 601	55	1.0371	52 781
		JP	37 074	28	1.0156		37 654	35 613	25	1.0278	38 106	25	1.0484	38 869
		OT	40 605	1 *	1.0004		40 619	45 673	1 *	1.0289	41 777	1 *	1.0544	42 812
		US	52 555	22	1.0238		53 807	56 888	17	1.0444	54 887	14	1.0732	56 403
		Total	181 126	120			181 579	188 978	99		186 371	95		190 865
All	Euro-direct	EP	34 184				35 140	35 345			36 673			36 662
		JP	5 979				5 320	5 656			5 328			5 368
		OT	6 464				6 744	5 841			6 990			6 939
		US	6 424				7 450	6 558			7 277			7 476
		Total	53 051				54 654	53 400			56 269			56 445
All	PCT-IP	EP	57 505				55 040	57 732			58 025			59 421
		JP	43 771				45 090	42 046			45 463			46 398
		OT	46 555				45 640	51 908			48 668			49 823
		US	57 437				57 461	62 514			61 609			63 140
		Total	205 268				203 231	214 200			213 765			218 782
Grand total	Total	EP	91 689				90 180	93 077			94 698			96 084
		JP	49 750				50 410	47 702			50 791			51 767
		OT	53 019				52 384	57 749			55 658			56 762
		US	63 861				64 911	69 072			68 886			70 615
		Total	258 319				257 885	267 600			270 034			275 228
Growth from 2013						-0.2%	3.6%			4.5%			6.5%	
Impied % PCT-IP						78.8%	80.0%			79.2%			79.5%	

Table 6: Forecasts for EPO filings – Biggest group, broken down by residence bloc

4.3 Random group

The Random group this year is based on a sample of **2 785 total addresses** for Euro-direct filings and Euro-PCT-RP filings (including US boost sample of **334** addresses). From this group, **2 604** addresses were found and **638** applicants responded to the survey (**24.5%**).

For responses from the Random group, the Q-index method for growth indications was used following logarithmic transformation of the data. All the tables in this section for the Random group analyses show the numbers of cases that estimates were based on, Q-indices with their standard errors, the resulting filing forecasts, and the 95% confidence intervals based thereon (for details see **Annex III, Section 10.4**).

Unless explicitly stated otherwise, all results are based on the full version of the Random group data set, including cases with critical comments. As can be seen in **Table 2**, there is no appreciable difference this year between analyses including critical comments and those excluding critical comments, in terms of forecasting the filings observed in 2013.

The forecasts of the numbers of patent filings without a breakdown by residence bloc are illustrated in **Table 7** to **Table 9**. **Figure 5** and **Table 7** depict the results with the usual breakdowns by filing type and filing route. **Table 8** gives the results of the same forecasting method using winsorized data. To address any uncertainty about whether it is advisable to forecast separately by filing route, a forecast combining the Euro-direct and PCT-IP filing routes was done, the results of which are given in **Table 9**.

Analyses for the Random group using a breakdown into the four residence blocs, Europe (EPC), Japan (JP), Other (OT), and the US, are shown in **Table 10** to **Table 12**. **Table 10** shows the results of this residence bloc breakdown without any further enhancements. **Figure 6** and **Table 11** depict the results of the residence bloc breakdown using winsorized data, the recommended forecasting method for this survey. **Figure 7** shows the detailed results per residence bloc using this winsorized analysis. Finally, **Table 12** shows results of the residence bloc breakdown when combining Euro-direct and PCT-IP filing routes. **Figure 7** indicates that the residence bloc specific breakdowns perform especially well for EPC-based applicants in 2014, while 2014 growth of JP-based applicants is overestimated, and that of US-based applicants is underestimated. **Figure 6** and **Figure 7** also reveal an anomaly in the progression of the confidence intervals from year to year, with 2015 exhibiting narrower confidence bands than 2014. The reason for this is that, in 2015, the number of responses from the OT residence bloc did not meet the minimum threshold of six responses for some filing types and routes. In this case, the forecast automatically reverts to surrogate forecasts without a residence bloc breakdown for the filing types affected. Due to the larger sample size these surrogates are based on, the corresponding standard errors are smaller.

Table 13 to **Table 16** show results for some of the forecasts performed based on the Random group, but excluding cases with a critical code: **Table 13** provides the results of the analysis without a breakdown by residence bloc (compared to **Table 7**). **Table 15** shows the results employing a residence bloc breakdown but excluding cases with a critical code (compared to **Table 10**). Finally, **Table 16** shows the results of a forecast without subsidiary breakdown and combining Euro-direct and PCT-IP filing routes (compared to **Table 12**).

As was the case in the past two years, restricting the forecasts to the reduced data set this year does not lead to a consistent reduction in estimated deviations or RMSEF values (see **Table 2**). This supports our decision to continue using full data set estimates including cases with critical code as the de facto standard for this report.

The analysis corresponding to **Table 7**, with no subsidiary breakdown, was used for the filing forecasts recommended in the 2005, 2007, and 2008 reports. This recommendation was mostly based on the narrow confidence intervals of the forecast and better adherence to known filing figures of the survey year compared to other forecasting approaches.

In the earlier years, 2009 and 2010, the recommended forecasting method was the one shown in **Table 9** (analysis with no subsidiary breakdown and with Euro-direct and PCT-IP filings combined), because of a better fit with 2009 actual filings and narrower confidence intervals.⁸

In contrast to the previous three years, this year, winsorization of individual estimates has led to an improvement of forecasts based on a residence bloc breakdown. Indeed, when determining the recommended forecast approach (employing all data including cases with critical codes) by means of minimising the RMSEF, the estimate employing a residence bloc breakdown and winsorization of the responses (shown in **Table 11**) performs best. For two and three-year-ahead predictions, this approach appears to be representative of most other forecast approaches based on the Random group.

⁸ Since 2011, the recommended forecasting method has been an analysis employing a residence bloc breakdown as shown in **Table 10**

Number of filings

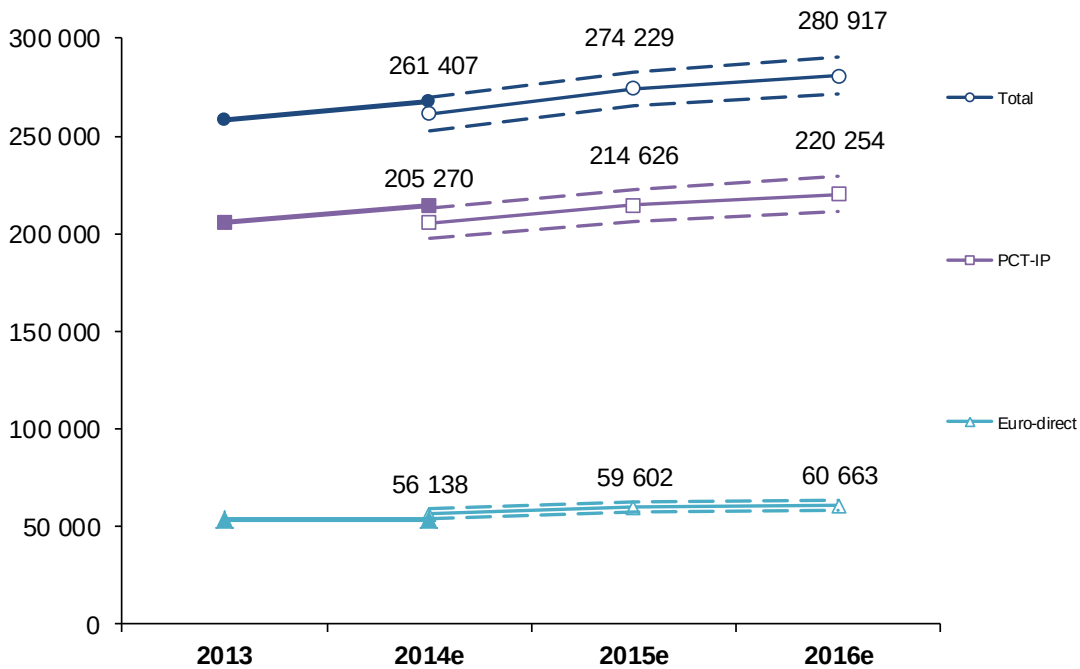


Figure 5: Forecasts for EPO filings – Random group without breakdown by residence bloc (solid marks indicate actual numbers, outlined marks indicate estimates and dashed lines illustrate 95% confidence limits)

Random group (including critical codes)
No subsidiary breakdown
Q-Indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014					2015			2016				
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index	S.E. 15	Predicted filings	Cases 16	Q-index	S.E. 16	Predicted filings
First	Euro-direct	Total LCL UCL	21 807	190	1.0595	0.0418	23 105 21 209 25 001	22 909	164	1.1085	0.0365	24 173 22 441 25 906	146	1.1491	0.0400	25 058 23 092 27 025
First	PCT-IP	Total LCL UCL	24 142	107	0.9687	0.0696	23 386 20 185 26 587	25 222	92	1.0620	0.0324	25 639 24 008 27 269	85	1.0908	0.0348	26 336 24 538 28 133
Subsequent	Euro-direct	Total LCL UCL	31 244	236	1.0572	0.0262	33 033 31 335 34 730	30 491	198	1.1339	0.0288	35 429 33 425 37 433	189	1.1396	0.0296	35 605 33 538 37 672
Subsequent	PCT-IP	Total LCL UCL	181 126	309	1.0042	0.0209	181 884 174 432 189 335	188 978	267	1.0434	0.0218	188 988 180 907 197 069	253	1.0706	0.0237	193 918 184 892 202 945
All	Euro-direct	Total LCL UCL	53 051				56 138 53 593 58 682	53 400				59 602 56 954 62 251				60 663 57 810 63 516
All	PCT-IP	Total LCL UCL	205 268				205 270 197 160 213 380	214 200				214 626 206 383 222 870				220 254 211 050 229 458
Grand total		Total LCL UCL	258 319				261 407 252 907 269 908	267 600				274 229 265 570 282 888				280 917 271 281 290 553
Growth from 2013							1.2%	3.6%				6.2%				8.7%
Implied % PCT-IP			79.5%				78.5%	80.0%				78.3%				78.4%
Deviation in % of forecast							3.3%					3.2%				3.4%

Table 7: Forecasts for EPO filings – Random group with no subsidiary breakdown

Random group (including critical codes)
No subsidiary breakdown
Q-Indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
Filing type	Filing route	Res. bloc	2013	2014				2015				2016				
			Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	Euro-direct	Total	21 807	190	1.0627	0.0393	23 173	22 909	164	1.1142	0.0340	24 297	146	1.1530	0.0372	25 143
		LCL					21 387					22 677				23 306
		UCL					24 960					25 917				26 979
First	PCT-IP	Total	24 142	107	0.9885	0.0521	23 864	25 222	92	1.0548	0.0313	25 465	85	1.0894	0.0349	26 301
		LCL					21 420					23 902				24 503
		UCL					26 308					27 028				28 100
Subsequent	Euro-direct	Total	31 244	236	1.0580	0.0225	33 056	30 491	198	1.1278	0.0263	35 238	189	1.1379	0.0280	35 552
		LCL					31 596					33 418				33 600
		UCL					34 516					37 057				37 504
Subsequent	PCT-IP	Total	181 126	309	1.0118	0.0167	183 254	188 978	267	1.0536	0.0176	190 841	253	1.0765	0.0196	194 987
		LCL					177 262					184 249				187 503
		UCL					189 246					197 433				202 470
All	Euro-direct	Total	53 051				56 230	53 400				59 535				60 694
		LCL					53 923					57 099				58 014
		UCL					58 536					61 971				63 374
All	PCT-IP	Total	205 268				207 118	214 200				216 306				221 288
		LCL					200 647					209 531				213 591
		UCL					213 590					223 080				228 985
Grand total		Total	258 319				263 348	267 600				275 841				281 982
		LCL					256 477					268 641				273 833
		UCL					270 218					283 040				290 132
Growth from 2013							1.9%	3.6%				6.8%				9.2%
Implied % PCT-IP			79.5%				78.6%	80.0%				78.4%				78.5%
Deviation in % of forecast							2.6%					2.6%				2.9%

Table 8: Forecasts for EPO filings – Random group with no subsidiary breakdown, analysis employing winsorization

Random group (including critical codes)
No subsidiary breakdown
Q-Indices
Euro-direct and PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
Filing type	Filing route	Res. bloc	2013	2014				2015				2016				
			Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	All	Total	45 949	201	1.0225	0.0412	46 983	48 131	168	1.0850	0.0263	49 856	153	1.1251	0.0301	51 700
		LCL					43 182					47 288				48 651
		UCL					50 784					52 424				54 749
Subsequent	All	Total	212 370	332	1.0053	0.0172	213 490	219 469	287	1.0618	0.0194	225 498	271	1.0840	0.0209	230 210
		LCL					206 279					216 941				220 781
		UCL					220 702					234 054				239 639
Grand total		Total	258 319				260 473	267 600				275 354				281 910
		LCL					252 321					266 420				272 000
		UCL					268 626					284 287				291 819
Growth from 2013							0.8%	3.6%					6.6%			9.1%
Deviation in % of forecast							3.1%						3.2%			3.5%

Table 9: Forecasts for EPO filings – Random group with no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

Random group (including critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

				Year												
		2013		2014				2015				2016				
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	Euro-direct	EP	20 044	153	0.9971	0.0350	19 987	21 415	131	1.0446	0.0294	20 938	118	1.0818	0.0310	21 683
		JP	275	10	1.5938	0.1339	438	229	8	1.2553	0.0936	345	8	1.3001	0.0942	358
		OT	784	0 *	1.0595	0.0418	831	533	0 *	1.1085	0.0365	869	0 *	1.1491	0.0400	901
		US	704	27	1.1231	0.1426	791	732	25	1.3658	0.1348	961	20	1.4337	0.1571	1 009
		Total	21 807	190			22 046	22 909	164			23 114	146			23 951
LCL					20 649					21 875				22 591		
UCL						23 443				24 352				25 311		
First	PCT-IP	EP	6 613	58	0.8861	0.0741	5 860	6 928	49	1.0157	0.0374	6 717	45	1.0556	0.0440	6 981
		JP	6 697	20	1.4859	0.1708	9 951	6 433	18	1.2446	0.0903	8 335	18	1.2861	0.0996	8 613
		OT	5 950	2 *	0.9687	0.0696	5 764	6 235	2 *	1.0620	0.0324	6 319	2 *	1.0908	0.0348	6 491
		US	4 882	27	0.8315	0.1730	4 060	5 626	23	1.0657	0.0889	5 203	20	1.0251	0.0610	5 005
		Total	24 142	107			25 635	25 222	92			26 574	85			27 089
LCL					21 770					24 719				25 142		
UCL						29 499				28 429				29 036		
Subsequent	Euro-direct	EP	14 140	156	1.0618	0.0371	15 013	13 930	132	1.1413	0.0374	16 138	127	1.1502	0.0318	16 263
		JP	5 704	35	0.9561	0.0352	5 454	5 427	32	1.0029	0.0451	5 720	32	0.9883	0.0504	5 637
		OT	5 680	6	1.4339	0.3630	8 145	5 308	5 *	1.1339	0.0288	6 441	6	1.6936	0.3489	9 619
		US	5 720	39	1.1115	0.0430	6 358	5 826	29	1.1877	0.0618	6 794	24	1.2038	0.0968	6 886
		Total	31 244	236			34 970	30 491	198			35 093	189			38 406
LCL					28 445					33 520				30 987		
UCL					41 494					36 665				45 824		
Subsequent	PCT-IP	EP	50 892	186	0.9957	0.0295	50 671	50 804	159	1.0350	0.0293	52 675	148	1.0628	0.0314	54 089
		JP	37 074	65	1.0324	0.0294	38 274	35 613	61	1.0596	0.0268	39 284	61	1.0835	0.0327	40 168
		OT	40 605	6	1.1339	0.1214	46 042	45 673	5 *	1.0434	0.0218	42 367	5 *	1.0706	0.0237	43 473
		US	52 555	52	0.9888	0.0454	51 969	56 888	42	1.0505	0.0661	55 209	39	1.0721	0.0744	56 344
		Total	181 126	309			186 956	188 978	267			189 535	253			194 074
LCL					174 404					181 277				184 598		
UCL					199 509					197 793				203 550		
All	Euro-direct	EP	34 184				35 000	35 345				37 075				37 946
		JP	5 979				5 892	5 656				6 066				5 995
		OT	6 464				8 975	5 841				7 310				10 520
		US	6 424				7 149	6 558				7 755				7 895
		Total	53 051				57 016	53 400				58 206				62 356
LCL					50 344					56 204				54 814		
UCL					63 688					60 208				69 899		
All	PCT-IP	EP	57 505				56 531	57 732				59 392				61 070
		JP	43 771				48 226	42 046				47 619				48 781
		OT	46 555				51 806	51 908				48 686				49 963
		US	57 437				56 028	62 514				60 412				61 349
		Total	205 268				212 591	214 200				216 109				221 163
LCL					199 457					207 645				211 490		
UCL					225 725					224 573				230 837		
Grand total	Total	EP	91 689				91 531	93 077				96 467				99 016
		JP	49 750				54 118	47 702				53 685				54 776
		OT	53 019				60 782	57 749				55 996				60 484
		US	63 861				63 177	69 072				68 167				69 244
		Total	258 319				269 607	267 600				274 315				283 520
LCL					254 875					265 618				271 253		
UCL					284 338					283 012				295 786		
Growth from 2013																
Implied % PCT-IP																
Deviation in % of forecast																

Table 10: Forecasts for EPO filings – Random group, broken down by residence bloc

Number of filings

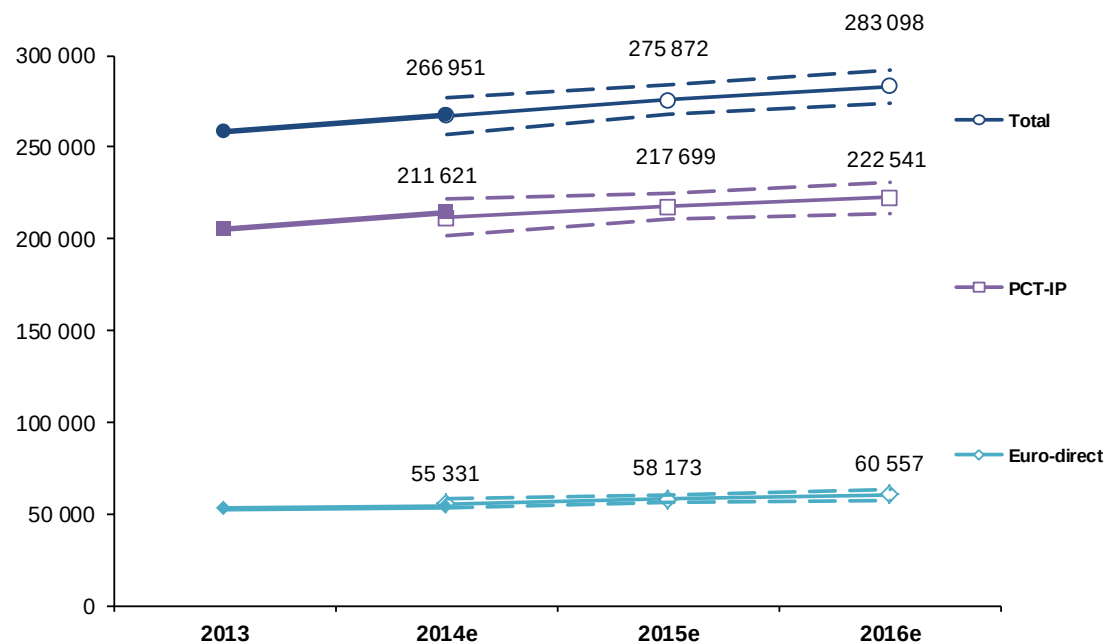
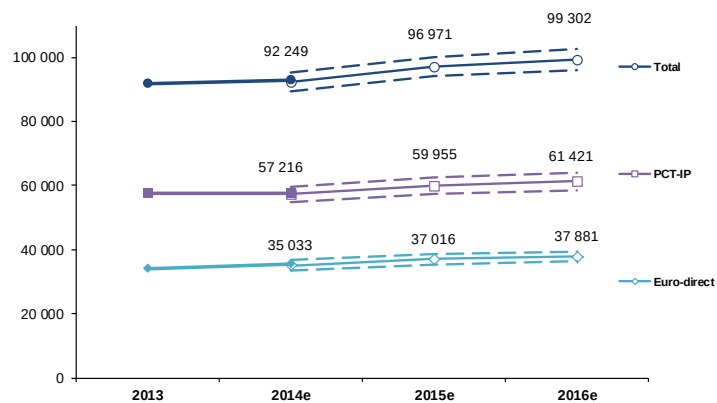
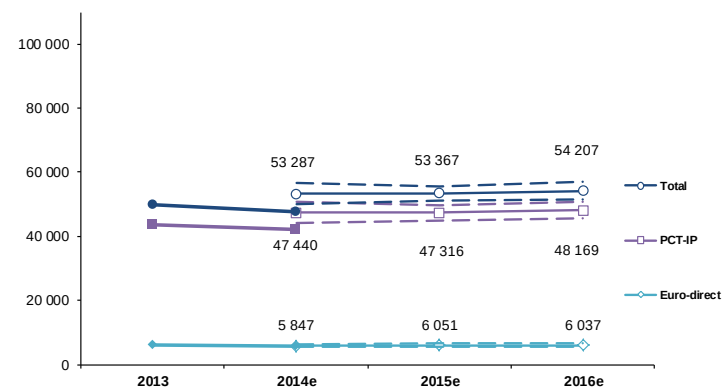


Figure 6: Forecasts for EPO filings based on the recommended forecast – Random group with breakdown by residence bloc, analysis employing winsorization (solid marks indicate actual numbers, outlined marks indicate estimates and dashed lines illustrate 95% confidence limits)

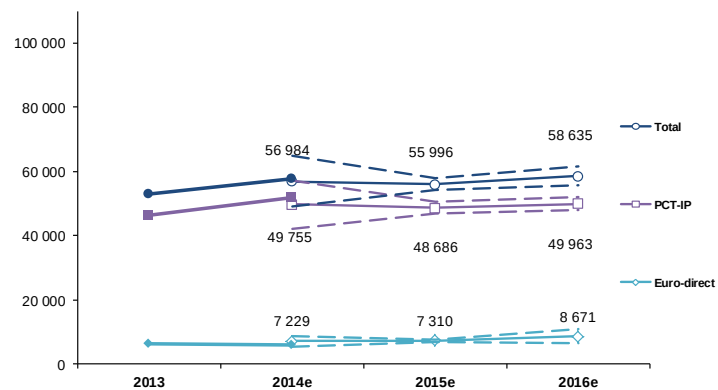
Number of filings
EP residence bloc



Number of filings
JP residence bloc



Number of filings
OT residence bloc



Number of filings
US residence bloc

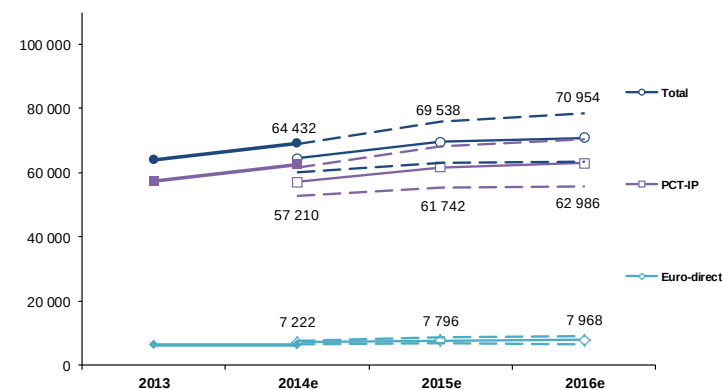


Figure 7: Forecasts for EPO filings by residence bloc based on the Random group with residence bloc breakdown analysis employing winsorization (solid marks indicate actual numbers, outlined marks indicate estimates and dashed lines illustrate 95% confidence limits)

Random group (including critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
Filing type	Filing route	Res. bloc	2013	2014				2015				2016				
			Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	Euro-direct	EP	20 044	153	0.9924	0.0350	19 892	21 415	131	1.0420	0.0292	20 885	118	1.0771	0.0308	21 590
		JP	275	10	1.5617	0.1446	429	229	8	1.2418	0.0899	341	8	1.2861	0.0912	354
		OT	784	0 *	1.0595	0.0418	831	533	0 *	1.1085	0.0365	869	0 *	1.1491	0.0400	901
		US	704	27	1.1743	0.1109	827	732	25	1.4237	0.1051	1 002	20	1.4941	0.1256	1 052
		Total	21 807	190			21 978	22 909	164			23 098	146			23 896
First	PCT-IP	LCL					20 594					21 881				22 563
		UCL					23 363					24 315				25 229
		EP	6 613	58	0.9090	0.0569	6 011	6 928	49	1.0158	0.0376	6 718	45	1.0575	0.0446	6 993
		JP	6 697	20	1.3816	0.1422	9 253	6 433	18	1.2161	0.0870	8 144	18	1.2573	0.0955	8 420
		OT	5 950	2 *	0.9687	0.0696	5 764	6 235	2 *	1.0620	0.0324	6 319	2 *	1.0908	0.0348	6 491
Subsequent	Euro-direct	US	4 882	27	0.9229	0.0974	4 506	5 626	23	1.0454	0.0741	5 104	20	1.0317	0.0596	5 037
		Total	24 142	107			25 533	25 222	92			26 284	85			26 941
		LCL					22 587					24 578				25 087
		UCL					28 479					27 991				28 795
		EP	14 140	156	1.0708	0.0316	15 141	13 930	132	1.1409	0.0343	16 131	127	1.1521	0.0296	16 291
Subsequent	PCT-IP	JP	5 704	35	0.9498	0.0320	5 417	5 427	32	1.0010	0.0423	5 710	32	0.9964	0.0485	5 684
		OT	5 680	6	1.1265	0.1339	6 399	5 308	5 *	1.1339	0.0288	6 441	6	1.3680	0.1462	7 770
		US	5 720	39	1.1180	0.0428	6 395	5 826	29	1.1877	0.0618	6 794	24	1.2091	0.0967	6 916
		Total	31 244	236			33 352	30 491	198			35 076	189			36 661
		LCL					31 308					33 586				33 823
All	Euro-direct	UCL					35 397					36 565				39 498
		EP	50 892	186	1.0061	0.0224	51 205	50 804	159	1.0461	0.0231	53 237	148	1.0695	0.0254	54 428
		JP	37 074	65	1.0300	0.0281	38 188	35 613	61	1.0566	0.0235	39 172	61	1.0722	0.0277	39 749
		OT	40 605	6	1.0834	0.0875	43 991	45 673	5 *	1.0434	0.0218	42 367	5 *	1.0706	0.0237	43 473
		US	52 555	52	1.0028	0.0413	52 705	56 888	42	1.0777	0.0568	56 638	39	1.1026	0.0648	57 949
All	PCT-IP	Total	181 126	309			186 088	188 978	267			191 414	253			195 599
		LCL					176 856					184 180				187 196
		UCL					195 320					198 649				204 003
		EP	34 184				35 033	35 345				37 016				37 881
		JP	5 979				5 847	5 656				6 051				6 037
Grand total	Total	OT	6 464				7 229	5 841				7 310				8 671
		US	6 424				7 222	6 558				7 796				7 968
		Total	53 051				55 331	53 400				58 173				60 557
		LCL					52 862					56 250				57 422
		UCL					57 800					60 097				63 692
All	PCT-IP	EP	57 505				57 216	57 732				59 955				61 421
		JP	43 771				47 440	42 046				47 316				48 169
		OT	46 555				49 755	51 908				48 686				49 963
		US	57 437				57 210	62 514				61 742				62 986
		Total	205 268				211 621	214 200				217 699				222 541
Grand total	Total	LCL					201 930					210 265				213 935
		UCL					221 311					225 132				231 146
		EP	91 689				92 249	93 077				96 971				99 302
		JP	49 750				53 287	47 702				53 367				54 207
		OT	53 019				56 984	57 749				55 996				58 635
Growth from 2013	Implied %PCT-IP	US	63 861				64 432	69 072				69 538				70 954
		Total	258 319				266 951	267 600				275 872				283 098
		LCL					256 951					268 194				273 938
		UCL					276 952					283 550				292 257
							3.3%	3.6%				6.8%				9.6%
Deviation in % of forecast							79.3%	80.0%				78.9%				78.6%
							3.7%					2.8%				3.2%

Table 11: Forecasts for EPO filings – Random group, broken down by residence bloc, analysis employing winsorization

Random group (including critical codes)
Breakdown by residence bloc
Q-indices
Euro-direct and PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014				2015				2016				
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	All	EP	26 657	141	0.9716	0.0289	25 899	28 343	117	1.0274	0.0249	27 387	106	1.0555	0.0274	28 137
		JP	6 972	26	1.5088	0.1476	10 519	6 662	23	1.3236	0.1020	9 228	23	1.3597	0.1074	9 480
		OT	6 734	3	1.0005	0.1946	6 738	6 768	2	1.3447	0.0501	9 056	2	1.5125	0.0690	10 185
		US	5 586	31	0.8461	0.1445	4 727	6 358	26	1.1514	0.0711	6 432	22	1.2530	0.0958	6 999
		Total	45 949	201			47 882	48 131	168			52 102	153			54 802
	LCL					43 348					49 485				51 639	
	UCL					52 416					54 719				57 964	
Subsequent	All	EP	65 032	206	1.0025	0.0244	65 191	64 734	175	1.0675	0.0263	69 425	164	1.0903	0.0277	70 903
		JP	42 778	71	0.9951	0.0196	42 568	41 043	67	1.0443	0.0224	44 672	67	1.0605	0.0280	45 365
		OT	46 285	7	1.1454	0.1113	53 014	50 981	5	1.1634	0.0330	53 850	5	1.2568	0.0401	58 169
		US	58 275	48	1.0182	0.0410	59 337	62 714	40	1.0515	0.0561	61 278	35	1.0736	0.0624	62 566
		Total	212 370	332			220 111	219 469	287			229 225	271			237 003
	LCL					207 018					220 593				226 960	
	UCL					233 203					237 857				247 045	
Grand total	Total	EP	91 689				91 090	93 077				96 811				99 040
		JP	49 750				53 088	47 702				53 900				54 845
		OT	53 019				59 751	57 749				62 905				68 354
		US	63 861				64 064	69 072				67 710				69 565
		Total	258 319				267 993	267 600				281 327				291 804
	LCL					254 138					272 308				281 275	
	UCL					281 848					290 347				302 333	
Growth from 2013							3.7%	3.6%				8.9%				13.0%
Deviation in % of forecast							5.2%					3.2%				3.6%

Table 12: Forecasts for EPO filings – Random group, broken down by residence bloc (Euro-direct and PCT-IP filings combined)

Random group (excluding critical codes)
No subsidiary breakdown
Q-Indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014					2015				2016			
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index	S.E. 15	Predicted filings	Cases 16	Q-index	S.E. 16	Predicted filings
First	Euro-direct	Total	21 807	183	1.0896	0.0381	23 760	22 909	156	1.1348	0.0334	24 746	138	1.1771	0.0368	25 670
		LCL					21 984					23 127				23 819
		UCL					25 537					26 366				27 521
First	PCT-IP	Total	24 142	102	0.9693	0.0715	23 402	25 222	86	1.0633	0.0335	26 671	79	1.0889	0.0360	26 289
		LCL					20 109					23 983				24 434
		UCL					26 695					27 359				28 144
Subsequent	Euro-direct	Total	31 244	216	1.0595	0.0278	33 103	30 491	179	1.1319	0.0302	35 364	171	1.1407	0.0311	35 640
		LCL					31 298					33 272				33 466
		UCL					34 908					37 456				37 813
Subsequent	PCT-IP	Total	181 126	284	0.9991	0.0212	180 956	188 978	244	1.0351	0.0217	187 482	231	1.0605	0.0236	192 088
		LCL					173 426					179 513				183 191
		UCL					188 486					195 452				200 984
All	Euro-direct	Total	53 051				56 863	53 400				60 111				61 310
		LCL					54 331					57 465				58 455
		UCL					59 396					62 757				64 165
All	PCT-IP	Total	205 268				204 358	214 200				213 154				218 377
		LCL					196 140					205 007				209 289
		UCL					212 576					221 300				227 465
Grand total		Total	258 319				261 221	267 600				273 264				279 687
		LCL					252 622					264 699				270 161
		UCL					269 821					281 830				289 212
Growth from 2013							1.1%	3.6%				5.8%				8.3%
Implied % PCT-IP			79.5%				78.2%	80.0%				78.0%				78.1%
Deviation in % of forecast							3.3%					3.1%				3.4%

Table 13: Forecasts for EPO filings – Random group, excluding companies with critical comments, no subsidiary breakdown

Random group (excluding critical codes)
No subsidiary breakdown
Q-Indices
Euro-direct and PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year														
			2013	2014						2015				2016			
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings	
First	All	Total	45 949	196	1.0280	0.0419	47 236	48 131	161	1.0895	0.0269	50 063	146	1.1280	0.0308	51 830	
		LCL					43 353					47 419				48 695	
		UCL					51 119					52 707				54 965	
Subsequent	All	Total	212 370	307	1.0039	0.0174	213 204	219 469	265	1.0579	0.0193	224 670	250	1.0802	0.0208	229 394	
		LCL					205 919					216 187				220 025	
		UCL					220 489					233 153				238 763	
Grand total		Total	258 319				260 440	267 600				274 733				281 224	
		LCL					252 185					265 847				271 344	
		UCL					268 695					283 618				291 103	
Growth from 2013																	
Deviation in % of forecast																	

Table 14: Forecasts for EPO filings – Random group, excluding companies with critical comments, no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

Random group (excluding critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014				2015				2016				
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	Euro-direct	EP	20 044	148	0.9988	0.0354	20 040	21 415	124	1.0468	0.0300	20 982	111	1.0825	0.0316	21 698
		JP	275	10	1.5938	0.1339	438	229	8	1.2553	0.0936	345	8	1.3001	0.0942	358
		OT	784	0 *	1.0896	0.0381	854	533	0 *	1.1348	0.0334	890	0 *	1.1771	0.0368	923
		US	704	25	1.3424	0.0705	945	732	24	1.5699	0.0693	1 105	19	1.6801	0.0906	1 183
		Total	21 807	183			22 277	22 909	156			23 322	138			24 162
First	PCT-IP	LCL					20 875					22 076				22 795
		UCL					23 679					24 569				25 528
		EP	6 613	55	0.8843	0.0752	5 848	6 928	45	1.0149	0.0381	6 712	41	1.0524	0.0448	6 960
		JP	6 697	20	1.4859	0.1708	9 951	6 433	18	1.2446	0.0903	8 335	18	1.2861	0.0996	8 613
		OT	5 950	2 *	0.9693	0.0715	5 768	6 235	2 *	1.0633	0.0335	6 327	2 *	1.0889	0.0360	6 479
Subsequent	Euro-direct	US	4 882	25	0.8223	0.1954	4 015	5 626	21	1.0748	0.1006	5 247	18	1.0142	0.0713	4 952
		Total	24 142	102			25 581	25 222	86			26 621	79			27 003
		LCL					21 643					24 694				25 019
		UCL					29 519					28 549				28 988
		EP	14 140	140	1.0651	0.0387	15 060	13 930	116	1.1413	0.0392	16 137	112	1.1554	0.0334	16 337
Subsequent	PCT-IP	JP	5 704	34	0.9439	0.0343	5 384	5 427	31	0.9866	0.0442	5 627	31	0.9721	0.0502	5 545
		OT	5 680	5 *	1.0595	0.0278	6 018	5 308	4 *	1.1319	0.0302	6 429	5 *	1.1407	0.0311	6 479
		US	5 720	37	1.1366	0.0493	6 501	5 826	28	1.1945	0.0669	6 832	23	1.2127	0.1055	6 937
		Total	31 244	216			32 963	30 491	179			35 026	171			35 297
		LCL					31 569					33 372				33 375
Subsequent	Euro-direct	UCL					34 356					36 680				37 219
		EP	50 892	168	0.9891	0.0306	50 336	50 804	142	1.0261	0.0303	52 219	132	1.0522	0.0324	53 547
		JP	37 074	63	1.0222	0.0278	37 896	35 613	59	1.0396	0.0231	38 543	59	1.0599	0.0286	39 294
		OT	40 605	6	1.1339	0.1214	46 042	45 673	5 *	1.0351	0.0217	42 030	5 *	1.0605	0.0236	43 062
		US	52 555	47	0.9937	0.0373	52 224	56 888	38	1.0630	0.0582	55 866	35	1.0866	0.0673	57 108
All	Euro-direct	Total	181 126	284			186 496	188 978	244			188 658	231			193 011
		LCL					174 225					181 126				184 208
		UCL					198 771					196 191				201 814
		EP	34 184				35 100	35 345				37 119				38 035
		JP	5 979				5 822	5 656				5 973				5 902
All	PCT-IP	OT	6 464				6 872	5 841				7 319				7 402
		US	6 424				7 446	6 558				7 937				8 119
		Total	53 051				55 240	53 400				58 348				59 459
		LCL					53 263					56 277				57 101
		UCL					57 217					60 419				61 817
All	Euro-direct	EP	57 505				56 184	57 732				58 930				60 506
		JP	43 771				47 847	42 046				46 879				47 907
		OT	46 555				51 810	51 908				48 357				49 542
		US	57 437				56 238	62 514				61 114				62 060
		Total	205 268				212 079	214 200				215 280				220 015
Grand total	Total	LCL					199 189					207 504				210 991
		UCL					224 968					223 055				229 039
		EP	91 689				91 283	93 077				96 050				98 542
		JP	49 750				53 669	47 702				52 851				53 809
		OT	53 019				58 682	57 749				55 676				56 944
Growth from 2013	Implied % PCT-IP	US	63 861				63 684	69 072				69 051				70 179
		Total	258 319				267 319	267 600				273 628				279 473
		LCL					254 279					265 581				270 146
		UCL					289 359					281 675				288 800
							3.5%	3.6%				5.9%				8.2%
Deviation in % of forecast							79.3%	80.0%					78.7%			78.7%
							4.9%						2.9%			3.3%

Table 15: Forecasts for EPO filings – Random group, excluding companies with critical comments, broken down by residence bloc

Random group (excluding critical codes)
No subsidiary breakdown
Q-Indices
Euro-direct and PCT-IP filings combined

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014				2015				2016				
Filing type	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
First	All	Total	45 949	196	1.0280	0.0419	47 236	48 131	161	1.0895	0.0269	50 063	146	1.1280	0.0308	51 830
		LCL					43 353					47 419				48 695
		UCL					51 119					52 707				54 965
Subsequent	All	Total	212 370	307	1.0039	0.0174	213 204	219 469	265	1.0579	0.0193	224 670	250	1.0802	0.0208	229 394
		LCL					205 919					216 187				220 025
		UCL					220 489					233 153				238 763
Grand total		Total	258 319				260 440	267 600				274 733				281 224
		LCL					252 185					265 847				271 344
		UCL					268 695					283 618				291 103
Growth from 2013							0.8%	3.6%				6.4%				8.9%
Deviation in % of forecast							3.2%					3.2%				3.5%

Table 16: Forecasts for EPO filings – Random group, excluding companies with critical comments, no subsidiary breakdown (Euro-direct and PCT-IP filings combined)

5 Forecasts for Euro-PCT-RP applications

5.1 Summary of this year's forecasts for Euro-PCT-RP applications

The results for Euro-PCT-RP applications at the EPO were obtained from question (k) in **Part B** of the questionnaire (see **Annex I**). Forecasts for Euro-PCT-RP filings are calculated both for the Biggest group sample and the Random group sample, applying the Composite index and the Q-index, respectively. No separate questions on first filings and subsequent filings were asked regarding Euro-PCT-RP applications. Unless explicitly stated otherwise, the results for the Random group are based on the full version of the data set including cases with critical comments.

An overview of the main results of the forecasts for Euro-PCT-RP applications according to the different methods is given in terms of growth rates (**Table 17**) and in terms of absolute numbers of filings with RMSEF values (**Table 18**). Firstly, Euro-PCT-RP filings are estimated for the Biggest group with no subsidiary breakdown (**Table 19**) and broken down by residence bloc (**Table 20**). Then a series of tables gives forecasts for Euro-PCT-RP filings from the Random group. Q-indices for the Random group sample are calculated with no subsidiary breakdown using the full Random group data set (**Table 21**) and excluding companies with a critical code (**Table 22**). The same analysis is repeated for Euro-PCT-RP filings itemised by residence bloc using the full data set (**Table 23**) and again using only those respondents without critical codes (**Table 24**).

Estimates based on the Biggest group this year are in good agreement with the current expectation of actual Euro-PCT-RP filings in 2014 and, as has been the case for the past two years, the estimate without residence bloc breakdown is more precise.

Comparing the RMSEF of Random group forecasts, the analysis without residence bloc breakdown produces slightly better values and can thus be considered superior. The estimates without subsidiary breakdown, as shown in **Table 21**, thus continue to be preferred for Euro-PCT-RP applications. An important determinant of the differences in RMSEF, for the cases including critical codes, is the higher variance for the residence bloc breakdown, although the estimate according to the breakdown is also further from the outcome for 2014 than the estimate without breakdown.

In contrast to the previous two surveys, the recommended approach based on the Random group is in good alignment with expected true one-year growth. Consequently, true one-year growth lies firmly within the 95% confidence interval of the recommended forecast approach. For two year and three-year horizons, continued and similar year-on-year growth of 4% or 5% is expected.

Finally, this year estimates based on the Random group and those based on the Biggest group are generally in fair agreement for the entire forecast period of this survey, with better agreement for one-year growth than for three-year growth.

Comparison of forecasts: Growth from 2013
Euro-PCT-RP

Critical codes	Group	Breakdown	2014		2015		2016	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Including	Biggest	None	7.2%		6.9%		9.9%	
Including	Biggest	Residence bloc	9.1%		9.8%		13.3%	
Including	Random	None	5.2%	4.3%	9.9%	6.5%	14.1%	7.8%
Including	Random	Residence bloc	6.0%	5.1%	15.0%	8.6%	20.9%	11.4%
Excluding	Biggest	None	6.0%		6.6%		9.6%	
Excluding	Biggest	Residence bloc	8.8%		9.1%		12.6%	
Excluding	Random	None	4.3%	4.3%	8.9%	6.7%	12.7%	8.0%
Excluding	Random	Residence bloc	4.0%	5.1%	12.5%	9.0%	17.7%	12.3%
Actual Growth			5.3%					

Table 17: Overview of predicted growth rates for Euro-PCT-RP applications by forecasting method

Comparison of forecasts: Predicted total filings
Euro-PCT-RP
LCL/UCL indicates lower/upper 95% confidence limit

Critical codes	Group	Breakdown	2014				2015			2016		
			Predicted filings	LCL	UCL	RMSEF*	Predicted filings	LCL	UCL	Predicted filings	LCL	UCL
Including	Biggest	None	93 676				93 427			96 011		
Including	Biggest	Residence bloc	95 312				95 924			98 987		
Including	Random	None	91 959	87 971	95 947	2 035	95 984	89 733	102 235	99 695	91 953	107 437
Including	Random	Residence bloc	92 610	87 927	97 292	2 464	100 488	91 824	109 152	105 632	93 634	117 631
Excluding	Biggest	None	92 591				93 146			95 758		
Excluding	Biggest	Residence bloc	95 054				95 337			98 375		
Excluding	Random	None	91 117	87 172	95 061	2 201	95 137	88 802	101 471	98 507	90 602	106 411
Excluding	Random	Residence bloc	90 851	86 256	95 445	2 614	98 312	89 433	107 191	102 849	90 174	115 524
Actual Filings			92 007									

*) RMSEF: Root mean squared error of forecast

Table 18: Overview of predicted filing numbers for Euro-PCT-RP applications by forecasting method

Biggest group (including critical codes)
No subsidiary breakdown
Composite Indices

Patent Office	Filing route	Res. bloc	Year									
			2013	2014			2015			2016		
EPO	Euro-PCT-RP	Total	Actual filings	Cases 14	Index 14	Predicted filings	Actual filings	Cases 15	Index 15	Predicted filings	Cases 16	Index 16
			87 377	122	1.0721	93 676	92 007	108	1.0692	93 427	99	1.0988
Growth from 2013						7.2%	5.3%			6.9%		9.9%

Table 19: Forecasts for Euro-PCT-RP applications – Biggest group (no subsidiary breakdown)

Biggest group (including critical codes)
Breakdown by residence bloc
Composite indices

			Year												
			2013	2014				2015				2016			
Patent office	Filing route	Res. bloc	Actual filings	Cases 14	Index 14	Predicted filings	Actual filings	Cases 15	Index 15	Predicted filings	Cases 16	Index 16	Predicted filings		
EPO	Euro-PCT-RP	EP	37 094	71	1.0282	38 141	37 754	61	1.0261	38 063	55	1.0586	39 268		
		JP	15 305	29	1.0298	15 761	15 407	28	1.0506	16 079	28	1.0690	16 361		
		OT	10 683	1 *	1.0721	11 453	11 586	1 *	1.0692	11 423	1 *	1.0988	11 739		
		US	24 295	21	1.2331	29 957	27 260	18	1.2496	30 359	15	1.3015	31 619		
Total		Total	87 377	122		95 312	92 007	108		95 824	99		98 987		
Growth from 2013						9.1%	5.3%			9.8%			13.3%		

Table 20: Forecasts for Euro-PCT-RP applications – Biggest group (broken down by residence bloc)

Random group (including critical codes)
No subsidiary breakdown
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
Patent office	Filing route	Res. bloc	2013	2014				Actual filings	2015				2016			
			Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings		Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-PCT-RP	Total	87 377	352	1.0524	0.0221	91 959	92 007	305	1.0985	0.0332	95 984	290	1.1410	0.0396	99 695
		LCL					87 971					89 733				91 953
		UCL					95 947					102 235				107 437
Growth from 2013							5.2%	5.3%								14.1%
Deviation in % of forecast							4.3%									7.8%

Table 21: Forecasts for Euro-PCT-RP applications – Random group (no subsidiary breakdown)

Random group (excluding critical codes)
No subsidiary breakdown
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
Patent office	Filing route	Res. bloc	2013	2014				2015				2016				
			Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-PCT-RP	Total	87 377	325	1.0428	0.0221	91 117	92 007	280	1.0888	0.0339	95 137	265	1.1274	0.0409	98 507
		LCL					87 172					88 802				90 602
		UCL					95 061					101 471				106 411
Growth from 2013							4.3%	5.3%				8.9%				12.7%
Deviation in % of forecast							4.3%					8.9%				8.0%

Table 22: Forecasts for Euro-PCT-RP applications – Random group, excluding cases with critical comments (no subsidiary breakdown)

Random group (including critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (Predicted filings - LCL)/Predicted filings

			Year													
			2013		2014				2015				2016			
Patent Office	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-PCT-RP	EP	37 094	205	1.0240	0.0286	37 986	37 754	174	1.0307	0.0371	38 232	164	1.0704	0.0400	39 706
		JP	15 305	70	1.0421	0.0324	15 949	15 407	68	1.0853	0.0304	16 611	68	1.0981	0.0325	16 807
		OT	10 683	10	0.9395	0.1174	10 037	11 586	9	1.0718	0.1352	11 450	10	1.1567	0.1436	12 357
		US	24 295	67	1.1788	0.0587	28 638	27 260	54	1.4075	0.1115	34 195	48	1.5132	0.1499	36 763
Total		Total	87 377	352			92 610	92 007	305			100 488	290			105 632
		LCL					87 927					91 824				93 634
		UCL					97 292					109 152				117 631
Growth from 2013							6.0%	5.3%				15.0%				20.9%
Deviation in % of forecast							5.1%					8.6%				11.4%

Table 23: Forecasts for Euro-PCT-RP applications – Random group (broken down by residence bloc)

Random group (excluding critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (Predicted filings - LCL)/Predicted filings

			Year													
Patent Office	Filing route	Res. bloc	2013	2014				2015				2016				
			Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-PCT-RP	EP	37 094	187	1.0267	0.0292	38 084	37 754	157	1.0309	0.0386	38 241	147	1.0684	0.0417	39 633
		JP	15 305	68	1.0428	0.0328	15 959	15 407	66	1.0866	0.0307	16 631	66	1.0996	0.0329	16 829
		OT	10 683	9	0.8804	0.1205	9 405	11 586	8	0.9653	0.1222	10 313	9	1.0275	0.1235	10 977
		US	24 295	61	1.1279	0.0594	27 401	27 260	49	1.3636	0.1211	33 128	43	1.4575	0.1680	35 410
Total		Total	87 377	325			90 851	92 007	280			98 312	265			102 849
		LCL					86 256					89 433				90 174
		UCL					95 445					107 191				115 524
Growth from 2013							4.0%	5.3%				12.5%				17.7%
Deviation in % of forecast							5.1%					9.0%				12.3%

Table 24: Forecasts for Euro-PCT-RP applications – Random group, excluding cases with critical comments (broken down by residence bloc)

5.2 Comparison with previous Patent Filings Surveys

Figure 8 and **Table 25** compare the forecast results of previous surveys since 2003 for Euro-PCT-RP applications, based on the Random group without subsidiary breakdown. As was done for Total filings (Euro-direct and PCT-IP filings) in **Section 3.2**, the **precision of predictions** from previous years' surveys can be evaluated by comparison with actual filing numbers, which are given in the last row of the respective tables. The forecast numbers are given as percentage values of the actual filings in brackets.

For 2004 to 2006, forecasts for Euro-PCT-RP filings range from 90% to 101% of actual filings, thus showing some apparent conservatism. From 2007 to 2009, forecasts range from 99% to 116% of actual filings, demonstrating a similar pattern as seen for Total filings (Euro-direct and PCT-IP filings) for the timeframe around the onset of the global financial crisis (see Table 4). Since 2010, forecasts have ranged from 96% to 102% of actual filings, indicating generally good precision for one, two and three-year growth.

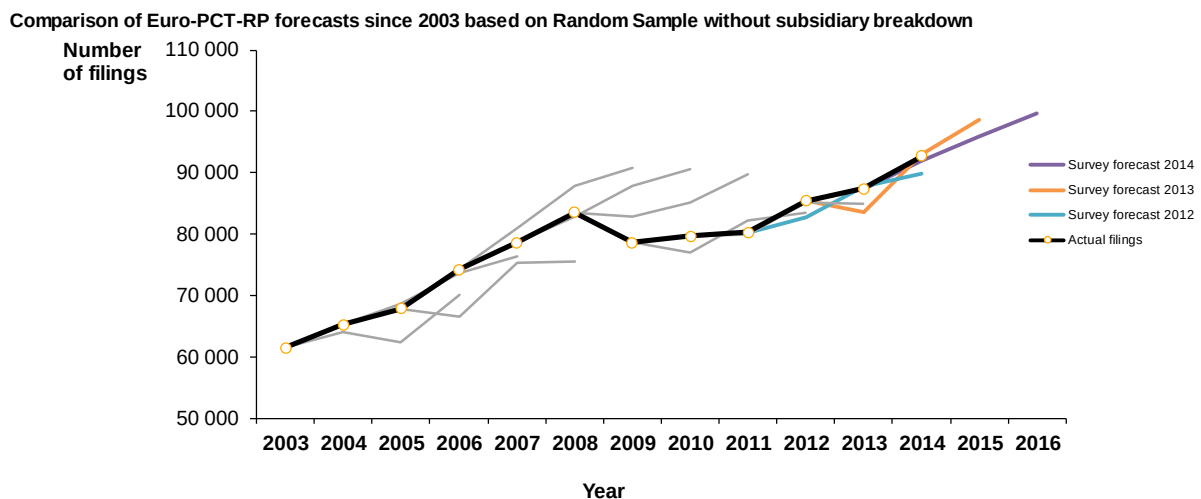


Figure 8: Comparison of forecasts for Euro-PCT-RP applications since 2003 (Random group with no subsidiary breakdown)

Number of filings* forecasted based on ...	Forecasting Year													
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
... 2004 survey (in % of actual filings) Lower confidence limit Upper confidence limit	61 494 (=actual)	63 964 (98%) 58 948 68 980	62 357 (92%) 54 492 70 222	70 061 (94%) 62 997 77 125										
... 2005 survey (in % of actual filings) Lower confidence limit Upper confidence limit		65 201 (=actual)	68 550 (101%) 64 799 72 300	73 542 (99%) 67 556 79 528	76 418 (97%) 69 045 83 790									
... 2006 survey (in % of actual filings) Lower confidence limit Upper confidence limit			67 888 (=actual)	66 621 (90%) 61 239 72 003	75 289 (96%) 70 575 80 003	75 438 (90%) 67 690 83 187								
... 2007 survey (in % of actual filings) Lower confidence limit Upper confidence limit				74 227 (=actual)	80 951 (103%) 75 440 86 463	87 796 (105%) 80 581 95 011	90 850 (116%) 82 977 98 722							
... 2008 survey (in % of actual filings) Lower confidence limit Upper confidence limit					78 610 (=actual)	82 835 (99%) 78 542 87 128	87 883 (112%) 82 659 93 106	90 488 (114%) 84 133 96 842						
... 2009 survey (in % of actual filings) Lower confidence limit Upper confidence limit						83 512 (=actual)	82 815 (105%) 79 723 85 907	85 085 (107%) 80 006 90 165	89 653 (112%) 83 818 95 488					
... 2010 survey (in % of actual filings) Lower confidence limit Upper confidence limit							78 593 (=actual)	77 044 (97%) 74 106 79 982	82 136 (102%) 78 735 85 537	83 366 (98%) 79 103 87 629				
... 2011 survey (in % of actual filings) Lower confidence limit Upper confidence limit								79 681 (=actual)	79 855 (99%) 76 616 83 093	85 232 (100%) 79 186 91 278	85 012 (97%) 74 080 95 944			
... 2012 survey (in % of actual filings) Lower confidence limit Upper confidence limit									80 270 (=actual)	82 810 (97%) 79 783 85 837	87 730 (100%) 83 678 91 783	89 747 (97%) 84 938 94 556		
... 2013 survey (in % of actual filings) Lower confidence limit Upper confidence limit										85 414 (=actual)	83 645 (96%) 80 480 86 810	93 057 (100%) 89 422 96 692	98 534 (N/A) 91 225 105 844	
... 2014 survey (in % of actual filings) Lower confidence limit Upper confidence limit											87 378 (=actual)	91 959 (99%) 87 971 95 947	95 984 (N/A) 89 733 102 235	99 695 (N/A) 91 953 107 437
Actual filings	61 494	65 201	67 888	74 227	78 610	83 512	78 593	79 681	80 270	85 414	87 378	92 712	N/A	N/A

*) Euro-PCT-RP

Table 25: Comparison of forecasts for Euro-PCT-RP applications since 2003 (Random group with no subsidiary breakdown). Precision values (value of point estimate in % of true value) in brackets

6 Forecasts for Total EPO Applications

For the first time in this survey, the data were also used to estimate growth in Total applications made at the EPO, as determined by the sum of Euro-direct and Euro-PCT-RP applications.

Since no distinction between first and subsequent applications was made in the survey for Euro-PCT-RP applications, the forecast approaches shown here for Total EPO applications do not distinguish between first and subsequent applications. Within the context of this chapter, this also applies to Euro-direct applications, even though Euro-direct applications were ascertained separately as first and subsequent applications. Please see **Section 4** for Euro-Direct forecasts distinguishing between first and subsequent applications. Unless explicitly stated otherwise, the results for the Random group are based on the full version of the data set including cases with critical comments.

An overview of the main results of the forecasts for Total EPO applications according to the different methods is given in terms of growth rates (**Table 26**) and in terms of absolute numbers of filings with RMSEF values (**Table 27**). Initially, Total EPO applications are estimated for the Biggest group with no subsidiary breakdown (**Table 28**) and broken down by residence bloc (**Table 29**). Then a series of tables give forecasts for Total EPO applications based on the Random group. Q-indices for the Random group sample are calculated with no subsidiary breakdown using the full Random group data set (**Table 30**) and excluding companies with a critical code (**Table 31**). The same analysis is repeated with Total EPO applications broken down by residence bloc using the full data set (**Table 32**) and again using only those respondents without critical codes (**Table 33**).

Table 26 shows that estimates based on the Biggest group are generally in good agreement with the corresponding estimates based on the Random group for one-year growth. Random group estimates are more optimistic than the Biggest group for two and three-year growth of Total EPO applications.

Comparing the RMSEF of Random group forecasts, the analysis without residence bloc breakdown clearly results in a lower RMSEF, driven both by a point estimate which is better aligned with the current expectation of true one-year growth and by a lower standard error of the forecast. The estimate without subsidiary breakdown, as shown in **Table 30**, is thus the preferred estimate for Total EPO applications. In terms of one-year growth, this forecast can be characterised by a 95% confidence interval which easily encompasses expected actual one-year growth of Total applications. These forecasts for Total EPO applications are 147 417 for 2014, 155 248 for 2015, and 159 787 for 2016.

Comparison of forecasts: Growth from 2013
Euro-direct and Euro-PCT-RP

Critical codes	Group	Breakdown	2014		2015		2016	
			Growth rate	Deviation*	Growth rate	Deviation*	Growth rate	Deviation*
Including	Biggest	None	6.5%		7.4%		9.1%	
Including	Biggest	Residence bloc	6.9%		8.7%		10.5%	
Including	Random	None	5.0%	3.3%	10.6%	4.5%	13.8%	5.3%
Including	Random	Residence bloc	7.3%	6.4%	16.3%	8.0%	21.2%	9.3%
Excluding	Biggest	None	6.2%		7.8%		9.6%	
Excluding	Biggest	Residence bloc	7.3%		9.1%		10.9%	
Excluding	Random	None	4.5%	3.4%	9.8%	4.6%	12.9%	5.5%
Excluding	Random	Residence bloc	6.6%	8.2%	14.9%	9.5%	19.4%	10.7%
Actual Growth			3.5%					

*) **Deviation** corresponds to the distance from the forecasted filings to the lower 95% confidence limit (as % of the forecasted filings)

Table 26: Overview of predicted growth rates for Total applications at the EPO by forecasting method

Comparison of forecasts: Predicted total applications
Euro-direct and Euro-PCT-RP
LCL/UCL indicates lower/upper 95% confidence limit

Critical codes	Group	Breakdown	2014				2015				2016			
			Predicted filings	LCL	UCL	RMSEF*	Predicted filings	LCL	UCL		Predicted filings	LCL	UCL	
Including	Biggest	None	149 492				150 760				153 167			
Including	Biggest	Residence bloc	150 188				152 695				155 206			
Including	Random	None	147 417	142 516	152 318	3 208	155 248	148 255	162 242		159 787	151 254	168 321	
Including	Random	Residence bloc	150 686	141 033	160 339	7 220	163 299	150 283	176 314		170 175	154 331	186 018	
Excluding	Biggest	None	149 131				151 435				153 891			
Excluding	Biggest	Residence bloc	150 690				153 164				155 672			
Excluding	Random	None	146 774	141 829	151 720	2 870	154 255	147 150	161 361		158 545	149 811	167 278	
Excluding	Random	Residence bloc	149 670	137 468	161 872	7 545	161 374	146 028	176 719		167 671	149 691	185 651	
Actual Total Applications			145 407											

*) **RMSEF**: Root mean squared error of forecast

Table 27: Overview of predicted filing numbers for total applications at the EPO by forecasting method

Biggest group (including critical codes)
No subsidiary breakdown
Composite Indices

			Year										
			2013	2014				2015			2016		
Patent Office	Filing route	Res. bloc	Actual filings	Cases 14	Index 14	Predicted filings	Actual filings	Cases 15	Index 15	Predicted filings	Cases 16	Index 16	Predicted filings
EPO	Euro-direct	Total	53 051	104	1.0521	55 816	53 400	83	1.0807	57 333	79	1.0774	57 155
EPO	Euro-PCT-RP	Total	87 377	122	1.0721	93 676	92 007	108	1.0692	93 427	99	1.0988	96 011
Grand total		Total	140 428			149 492	145 407			150 760			153 167
Growth from 2013						6.5%	3.5%			7.4%			9.1%

Table 28: Forecasts for total applications at the EPO – Biggest group (no subsidiary breakdown)

Biggest group (including critical codes)
Breakdown by residence bloc
Composite indices

			Year										
Patent office	Filing route	Res. bloc	2013		2014		2015			2016			
			Actual filings	Cases 14	Index 14	Predicted filings	Actual filings	Cases 15	Index 15	Predicted filings	Cases 16	Index 16	Predicted filings
EPO	Euro-direct	EP	34 184	64	1.0239	35 002	35 345	51	1.0706	36 596	49	1.0627	36 327
		JP	5 979	18	0.9421	5 633	5 656	15	0.9988	5 972	15	0.9308	5 565
		OT	6 464	1 *	1.0521	6 801	5 841	1 *	1.0807	6 986	1 *	1.0774	6 964
		US	6 424	21	1.1581	7 440	6 558	16	1.1234	7 217	14	1.1461	7 363
		Total	53 051	104		54 876	53 400	83		56 770	79		56 219
EPO	Euro-PCT-RP	EP	37 094	71	1.0282	38 141	37 754	61	1.0261	38 063	55	1.0586	39 268
		JP	15 305	29	1.0298	15 761	15 407	28	1.0506	16 079	28	1.0690	16 361
		OT	10 683	1 *	1.0721	11 453	11 586	1 *	1.0692	11 423	1 *	1.0988	11 739
		US	24 295	21	1.2331	29 957	27 260	18	1.2496	30 359	15	1.3015	31 619
		Total	87 377	122		95 312	92 007	108		95 924	99		98 987
Grand total	Total	EP	71 278			73 143	73 099			74 660			75 595
		JP	21 284			21 393	21 063			22 051			21 926
		OT	17 147			18 254	17 427			18 408			18 703
		US	30 719			37 397	33 818			37 576			38 982
		Total	140 428			150 188	145 407			152 695			155 206
Growth from 2013						6.9%	3.5%			8.7%		10.5%	

Table 29: Forecasts for total applications at the EPO – Biggest group (broken down by residence bloc)

Random group (including critical codes)
No subsidiary breakdown
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014					2015				2016			
Patent office	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-direct	Total	53 051	278	1.0454	0.0262	55 458	53 400	242	1.1171	0.0270	59 264	222	1.1327	0.0305	60 092
		LCL					52 608					56 129				56 503
		UCL					58 308					62 400				63 861
EPO	Euro-PCT-RP	Total	87 377	352	1.0524	0.0221	91 959	92 007	305	1.0985	0.0332	95 984	290	1.1410	0.0396	99 695
		LCL					87 971					89 733				91 953
		UCL					95 947					102 235				107 437
Grand total		Total	140 428				147 417	145 407				155 248				159 787
		LCL					142 516					148 255				151 254
		UCL					152 318					162 242				168 321
Growth from 2013																
Deviation in % of forecast							5.0%	3.5%				10.6%				13.8%
							3.3%					4.5%				5.3%

Table 30: Forecasts for total applications at the EPO – Random group (no subsidiary breakdown)

Random group (excluding critical codes)
No subsidiary breakdown
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

			Year													
			2013	2014				2015				2016				
Patent office	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-direct	Total	53 051	257	1.0491	0.0273	55 658	53 400	222	1.1144	0.0278	59 119	203	1.1317	0.0315	60 038
		LCL					52 675					55 899				56 325
		UCL					58 641					62 338				63 751
EPO	Euro-PCT-RP	Total	87 377	325	1.0428	0.0221	91 117	92 007	280	1.0888	0.0339	95 137	265	1.1274	0.0409	98 507
		LCL					87 172					88 802				90 602
		UCL					95 061					101 471				106 411
Grand total		Total	140 428				146 774	145 407				154 255				158 545
		LCL					141 829					147 150				149 811
		UCL					151 720					161 361				167 278
Growth from 2013																
Deviation in % of forecast																

Table 31: Forecasts for total applications at the EPO – Random group, excluding cases with critical comments (no subsidiary breakdown)

Random group (including critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (Predicted filings - LCL)/Predicted filings

			Year													
			2013	2014				2015				2016				
Patent Office	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-direct	EP	34 184	195	1.0181	0.0282	34 803	35 345	170	1.0826	0.0249	37 009	156	1.1056	0.0245	37 795
		JP	5 979	37	1.0299	0.0466	6 158	5 656	34	1.0973	0.0596	6 561	34	1.0284	0.0731	6 149
		OT	6 464	6	1.5237	0.3795	9 849	5 841	6	1.7565	0.3810	11 354	6	1.9037	0.3742	12 305
		US	6 424	40	1.1311	0.0515	7 266	6 558	32	1.2278	0.0663	7 887	26	1.2910	0.0946	8 293
		Total	53 051	278			58 076	53 400	242			62 811	222			64 542
		LCL					49 635					53 097				54 196
EPO	Euro-PCT-RP	EP	37 094	205	1.0240	0.0286	37 986	37 754	174	1.0307	0.0371	38 232	164	1.0704	0.0400	39 706
		JP	15 305	70	1.0421	0.0324	15 949	15 407	68	1.0853	0.0304	16 611	68	1.0981	0.0325	16 807
		OT	10 683	10	0.9395	0.1174	10 037	11 586	9	1.0718	0.1352	11 450	10	1.1567	0.1436	12 357
		US	24 295	67	1.1788	0.0587	28 638	27 260	54	1.4075	0.1115	34 195	48	1.5132	0.1499	36 763
		Total	87 377	352			92 610	92 007	305			100 488	290			105 632
		LCL					87 927					91 824				93 634
Grand total	Total	EP	71 278				72 789	73 099				75 241				77 501
		JP	21 284				22 107	21 063				23 172				22 956
		OT	17 147				19 886	17 427				22 804				24 662
		US	20 719				35 904	33 818				42 082				45 056
		Total	140 428				150 686	145 407				163 299				170 175
		LCL					141 033					150 283				154 331
Growth from 2013																
Deviation in % of forecast																

Table 32: Forecasts for total applications at the EPO – Random group (broken down by residence bloc)

Random group (excluding critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (Predicted filings - LCL)/Predicted filings

			Year													
			2013		2014				2015				2016			
Patent Office	Filing route	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Actual filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
EPO	Euro-direct	EP	34 184	179	1.0203	0.0290	34 877	35 345	154	1.0784	0.0256	36 863	141	1.1046	0.0254	37 760
		JP	5 979	36	1.0174	0.0456	6 083	5 656	33	1.0807	0.0586	6 462	33	1.0119	0.0733	6 050
		OT	6 464	4	1.5915	0.4665	10 287	5 841	4	1.8036	0.4593	11 658	4	1.9274	0.4409	12 459
		US	6 424	38	1.1786	0.0558	7 572	6 558	31	1.2576	0.0693	8 079	25	1.3315	0.1005	8 553
		Total	53 051	257			58 819	53 400	222			63 062	203			64 822
		LCL					47 515					50 546				52 070
EPO	Euro-PCT-RP	EP	37 094	187	1.0267	0.0292	38 084	37 754	157	1.0309	0.0386	38 241	147	1.0684	0.0417	39 633
		JP	15 305	66	1.0428	0.0328	15 959	15 407	66	1.0866	0.0307	16 631	66	1.0996	0.0329	16 829
		OT	10 683	9	0.8804	0.1205	9 405	11 596	8	0.9653	0.1222	10 313	9	1.0275	0.1235	10 977
		US	24 295	61	1.1279	0.0594	27 401	27 260	49	1.3636	0.1211	33 128	43	1.4575	0.1680	35 410
		Total	87 377	325			90 851	92 007	280			98 312	265			102 849
		LCL					86 256					89 433				90 174
Grand total	Total	EP	71 278				72 962	73 099				75 103				77 383
		JP	21 284				22 043	21 063				23 092				22 879
		OT	17 147				19 693	17 427				21 971				23 436
		US	30 719				34 973	33 818				41 207				43 963
		Total	140 428				149 670	145 407				161 374				167 671
		LCL					137 468					146 028				149 691
Growth from 2013							6.6%				14.9%				19.4%	
Deviation in % of forecast							8.2%				9.5%				10.7%	

Table 33: Forecasts for total applications at the EPO – Random group, excluding cases with critical comments (broken down by residence bloc)

7 Conclusions and outlook

In terms of Total filings (Euro-direct + PCT-IP), the 2014 survey predicts moderate growth for 2014 of +3.3% and is in excellent agreement with actual filing growth from 2013 to 2014, currently expected to be at +3.6%. While Total filings are expected to increase from all residence blocs from 2013 to 2014, applicants from the US and the EP residence blocs continue to be least optimistic. For 2015 and 2016, the recommended survey scenario anticipates year-on-year growth of 5.8% followed by 2.5%, respectively.

On the whole, this year's survey predicts stable growth in Total filings at roughly +3% per annum for the entire forecast period.

The variability in one-year growth forecasts is similar to last year's but higher than one-year variability seen in the surveys from 2010 to 2012, indicating some heterogeneity in expectations among respondents. Variability of two year and three-year forecasts is generally lower than one-year variability and also lower than analogous variations in the previous survey. Of course, the stability of forecasts for the past two survey years should not lead to the conclusion that long-term observed growth is guaranteed to be close to this year's two and three-year forecasts.

For Euro-PCT-RP filings, the recommended forecast predicts +5.2% one-year growth up to 2014. This is in reasonable agreement with expected true growth from 2013 to 2014 of 6.1%. Growth is expected to remain stable for the two and three-year horizons, with 9.9% two-year and 14.1% three-year growth estimates based on the recommended forecast for the Random group.

The new estimates of Total EPO applications predict +5.0% growth up to 2014, which is fairly well aligned with the actual growth of +3.5%, thus providing a novel indicator for expected EPO workload. The growth up to 2015 is expected to be at +10.5%, and up to 2016 at +13.8%, both compared to 2013.

The EPO uses the forecasts of this survey to allocate its resources and capacities in order to optimise the patent examination process. We would therefore like to thank all participants for their valuable time and input. We realise that the diligent and full completion of the questionnaire is a time-consuming process. In order to be able to continue with a well-founded resource allocation process at the EPO, we would like to appeal to all applicants that might be approached in the future to kindly answer the questions as far as they possibly can.

Please see the Annexes for information on the survey methodology and analysis of individual responses (Part A, Annexes I to III); and for further results (Part B, Annexes IV to IX). The further results include forecasts broken down by mega clusters (Annex IV); forecasts for applications at other patent offices (Annex V); respondents' profiles and analyses of company economic attributes, such as R&D budgets, inventions, inventors, first filings, and SME status (Annex VI). Applicants were also asked to provide some details on their European patent portfolio, as well as on their patent trading and licensing activities, and their usage of patent intermediaries (Annex VII). Annex VIII reports on possible correction factors accounting for new applicants and applicants ceasing to file at the EPO. Finally, Annex IX gives details on this year's survey population and sample sizes.

ANNEXES PART A: SURVEY METHODOLOGY AND ANALYSIS OF INDIVIDUAL RESPONSES

8 ANNEX I: Methodological approach, data collection procedure, and questionnaire

8.1 Underlying population and target persons

The **underlying population** of the Patent Filings Survey comprises applicants who filed a patent application (excluding divisional filings) at the EPO in 2013. These applicants are mainly companies, but there are also some educational organisations and private inventors. The applicants come from all over the world, but are mostly residents of Europe, the US, and Japan.

The following table shows the distribution of the applicant population in 2013, broken down by residence bloc⁹.

Residence bloc	Applicants (population)	%
EPC countries	21 431	53.8%
Japan	3 101	7.8%
USA	9 136	22.9%
Other countries	6 184	15.5%
Total	39 852	100.0%

Table 34: Applicant population size in 2013

The following table shows the probability distributions of the same applicant population in terms of number of filings made per applicant, with separate distributions shown per bloc of origin and overall.

⁹ These are applicants for Euro-direct (excluding divisional filings) and/or Euro-PCT-RP.

class	lb	ub	EP	JP	OT	US	TOTAL
1	1	1	0.67	0.48	0.72	0.64	0.66
2	2	2	0.14	0.14	0.14	0.14	0.14
3	3	3	0.06	0.08	0.05	0.06	0.06
4	4	5	0.05	0.08	0.04	0.06	0.05
5	6	9	0.03	0.06	0.03	0.04	0.04
6	10	19	0.02	0.06	0.01	0.03	0.03
7	20	39	0.01	0.05	0.01	0.01	0.01
8	40	and higher	0.01	0.05	0.01	0.01	0.01

Table 35: Grouped bloc-wise probabilities of existence of specific filing counts in 2013

The probability values in this table are almost the same as those in the previous two surveys.

Details of each applicant selected were provided by the EPO, including the name of the company/person, address, and further information from the EPO database, such as number of filings at the EPO in 2013.

The **target persons** within companies are the head of the intellectual property department, an in-house or external patent agent, a member of the R&D department, or a member of management. Especially in the case of smaller sized applicants, this may well turn out also to be the proprietor.

8.2 Questionnaire

The questionnaire used for data collection covers the following key topics and is printed below. Parts A, B, and C are broadly similar to the previous questionnaire used in 2013.

- **Current and future filings (Part B¹⁰)**, split by
 - First and subsequent filings
 - Different procedures: Euro-direct, PCT international and national/regional phase, and national procedures
 - Different countries: Germany, United Kingdom, Japan, the US, Republic of Korea, People's Republic of China, and Other countries
- **Research and development budget as well as patenting activities (Part C)**, split by the 14 joint cluster organisational groupings used for examinations at the EPO. There is also a 15th box for "Other area(s)". In addition, the number of inventions considered for patent applications and the proportion of R&D expenditure spent on activities that might lead to first patent filings.
- **Details of patent portfolio (Part D)**: Total number of European patents in the portfolio across different time periods, source of acquiring European patents over the past five years, indication if the monetary value of the European patent portfolio is monitored, and monetary estimate of total value of European patents, where possible.
- **Details on activities on the patent market (Part E)**: Type of own entity on the patent market, activity as patent seller or buyer, types of entities to which European patents were sold/licensed or from which they were bought/licensed over the past five years, and share of current European patent portfolio represented by patents bought within the past five years.
- **Company details**, such as organisation type (**Part A**), number of employees and inventive staff (**Part C**), size of annual turnover (**Part C**), whether company is an SME (**Part C**).
- General **comments** regarding the questionnaire (**Part F**).

Basic results of **Sections D** and **E** are documented in **Annex VII**.

¹⁰ As in 2013, an option was provided to give information in the form of growth rates rather than actual numbers. Growth rates on a year-by-year basis were a permissible alternative because previous experience had shown that some interviewees had difficulties calculating growth rates from a single base year. However, for this report we adopted the convention of indicating growth rates with respect to the base year (in this case 2013).

Also, respondents were asked to fill in "zero" rather than leave the field blank for filing types and years with no activity. Follow-up calls were undertaken systematically in case certain forecasts were left blank. These actions resulted in a higher base of useful answers to calculate growth rates. Applicants were also asked whether they were able to provide all the filing information asked for in the upper matrix of Section B of the questionnaire.

Compared to last year, there were changes in Part C and more substantial changes in sections D and E of the questionnaire:

Section C:

- a) The position of the question concerning the status as an SME was moved above the cluster grid.
- b) The question when an applicant started applying at the EPO was deleted.

Section D: This section again deals with European patents in the portfolio.

- a) The question to understand the importance of European patents in the portfolio was removed.
- b) A new question to understand the source for acquiring European patents within the past five years was added.
- c) A new question was added to ask whether the monetary value of the respondent's European patent portfolio is currently monitored, and the question on the monetary value of the European patent portfolio was slightly modified.

Section E: New questions were added to understand different kinds of activities on the patent market:

- a) Type of own entity in terms of activity on the patent market, and its role as a patent seller or buyer.
- b) Types of entities to which European patents were sold/licensed or from which European patents were bought/licensed over the past five years, and the share of European patents bought within the past five years within the current European patent portfolio.

The questionnaire was accompanied by an **official letter of recommendation from the EPO** to motivate respondents to participate. This letter contained information on the background of the study, the target group and data protection, a contact person at the EPO in cases of doubt, and stated that the results would be published on the internet. The letter also stated that guesses are welcome in case no exact figures can be retrieved. In addition, a **cover letter from Ipsos** provided information on the survey procedure.

Both letters and the questionnaire were personalised, i.e. the company name, the address, the name of the contact person, and an identification number were printed on each questionnaire and reference letter. To cover the requirements of the contact persons, the letters and questionnaires were available in English, French, German, Japanese, Chinese (Simplified as well as Traditional), Italian, and Spanish as in previous years. In addition, in 2014, there was an American English language questionnaire version which was sent to North American applicants. There were only minor language modifications compared to the British English version.

Since there were changes to the questionnaire, it was pre-tested amongst eighteen respondents (English and German versions). For this purpose, the correct contact persons were researched and contacted by telephone. If they agreed to take part in the survey, the draft questionnaire was sent and discussed by phone in a follow-up call. This meant that Ipsos not only received their answers but also had a follow-up talk about the questionnaire as well. The pre-test interviews resulted in some changes in wording. The answers given in the pre-test interviews have been included in the analysis as far as possible.

The English version of the questionnaire is displayed below:

 Europäisches Patentamt European Patent Office Office européen des brevets	Ipsos-ID / GROUP FA LEITER PATENTABTL ABTEILUNG STRASSE ORT LAND	Please return to the EPO: +49-89-2399-1333 filingsurvey@epo.org
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Questionnaire

for Patent Filings Survey

We assure you that all the information you provide will be treated as strictly confidential by the EPO as well as by Ipsos, and will be used solely for the purposes of neutral, general statistical evaluation.

Please respond only in respect of the company/company part mentioned to you over the phone by Ipsos, e.g. your branch or subsidiary. If, however, this is not possible, we would welcome your responses in respect of whatever larger or smaller company part that you can speak for.

For which company/company part will you answer the questionnaire?

- ☐ the company/company part mentioned by Ipsos
- ☐ smaller company/company part, please specify: _____
- ☐ bigger company/company part, please specify: _____

Please answer the whole questionnaire for the same company/company part.

A. Contact Details

Should the information given above on your company details be incorrect, please provide us with corrected information below:

Contact Name: _____	Position: _____
Phone Number: _____	E-mail Address: _____
Organisation Name: _____	Organisation Address: _____

Please indicate the nature of the entity for which you will answer the following questions in Sections B to F of this questionnaire. Please cross the box that applies.

Type:

- ☐ Private enterprise/commercial sector

Public sector

- ☐ Government-performed R&D
- ☐ Higher educational sector
- ☐ Other public sector

- ☐ Other, please specify: _____

A summary of the results of the survey will be published in early 2015 at
<http://www.epo.org/service-support/contact-us/surveys.html>.
 Please give your E-mail address in Section A above and we will let you know then.

B. Estimation of your levels of patenting activity throughout the world

Please give information on numbers of your patent filings in the two tables below. In case you are unable to give actual figures, indicate anticipated yearly growth rates as percentages (i.e. 2014 compared with 2013; 2015 compared with 2014; 2016 compared with 2015).

Please indicate the numbers of first filings¹ and subsequent filings (claiming priority of an earlier application) with breakdowns by patent types and countries, that you filed in the last calendar year and that you expect to file in the present and future calendar years. Please enter "0" if you have no applications in a year/procedure, and a "X" if you do not know or do not want to tell.

		Filed 2013		Expected 2014		Expected 2015		Expected 2016	
		First filings ¹	Subsequent filings	First filings ¹	Subsequent filings	First filings ¹	Subsequent filings	First filings ¹	Subsequent filings
European patent applications under the EPC (excluding PCT) ²		(a)							
International applications under the PCT (International Phase)		(b)							
National applications (excluding EPC and PCT) to the Patent Offices of these countries	Germany	(c)							
	United Kingdom	(d)							
	Japan	(e)							
	United States ³	(f)							
	Republic of Korea	(g)							
	People's Republic of China	(h)							
	Other countries	(i)							
Worldwide Total First Filings		(j)							

1 A first filing is a patent application that, according to the Paris Convention for the Protection of Industrial Property, confers a right of priority for a period of twelve months for the purpose of filing patent applications in other countries or systems, with respect to the same invention.

2 Exclude from the counts any divisional applications.

3 Include provisional filings at USPTO in the cells for first filings of this row, and exclude all kinds of continuations.

Were you able to complete the table above with all the requested information regarding your activities?

☐ Yes

☐ No

Please indicate the numbers of your PCT applications that entered the regional/national phase at the listed offices during the last calendar year, and also those that you expect to enter the regional/national phase in the present and future calendar years.

PCT applications entering the regional/national phase at:	Entered 2013	Expected 2014	Expected 2015	Expected 2016
European Patent Office (EPO) (k)				
United States Patent and Trademark Office (USPTO) (l)				
Japan Patent Office (JPO) (m)				
German Patent and Trade Mark Office (DPMA) (n)				
China State Intellectual Property Office (SIPO) (o)				
Korean Intellectual Property Office (KIPO) (p)				

C. Your activities in total and in various sectors

Can you give us more information on your business activities, including turnover, staff, inventions, R&D budget as well as first patent filings? This will help EPO to develop its detailed plans.

Please indicate ...

(a)	the approximate size of your <u>annual turnover</u> (total sales less rebates and taxes) in 2013 (specify currency):	
(b.1)	the approximate <u>total number of staff</u> employed at your organisation at the end of 2013:	
(b.2)	the number of these staff directly <u>involved in making inventions</u> that might be patented:	
(b.3)	the total number of <u>distinct inventions</u> in 2013 that led your organisation to consider making patent applications:	

(c) Is your company one of the Small and Medium sized enterprises (SMEs) under the EU definition?

Yes ☐

No ☐

Don't know ☐

NB: Essentially, the European Union defines a SME as follows: A private enterprise with a headcount less than 250, AND: EITHER a turnover less than or equal to 50 million Euro OR a balance sheet total less than or equal to 43 million Euro. The entity should not cross these limits after taking account of other enterprises that it controls or is controlled by.

We are interested in classifying your activities in terms of technical domains according to organisational groupings of examination departments at the European Patent Office. Please complete the following table as far as you can, by indicating...

(d) ...which of the following technical domains you believe contain(s) the main area(s) of your business. Please tick appropriate box(es).	(e) ...the approximate size of your R&D budget 2013 per domain (specify currency)	(f) ...the number of first patent filings that you actually made per domain in 2013 throughout the world ⁴ . (Count each filing only once.)
☐ Audio, Video and Media		
☐ Biotechnology		
☐ Civil Engineering; Thermodynamics (including engines and pumps)		
☐ Computers		
☐ Electricity and Semiconductor Technology		
☐ Electrical and Electronic Technology		
☐ Handling and Processing		
☐ Medical and Consumer Technology (including agriculture)		
☐ Industrial Chemistry		
☐ Applied Physics		
☐ Polymers		
☐ Pure and Applied Organic Chemistry (including pharmaceuticals)		
☐ Telecommunications		
☐ Vehicles and General Technology (including transporting mechanisms, lighting)		
☐ Other area(s), please specify: _____		
TOTALS		

⁴ The Total for first patent filings provided at the bottom of this column should correspond to the number of worldwide total first filings provided in **Section B** of the questionnaire, **line (j)**.

(g) **What proportion of your overall R&D expenditure is spent specifically on activities that might lead to first patent filings?**

Proportion of overall R&D expenditure:

%

D. Details of European patent portfolio

In the following, “**European patents**” is to include **patent applications** that are still under consideration **at the EPO** as well as **EPO patents that have been granted** and are still maintained in at least one EPC contracting state's national office. Let one European patent grant count as one patent, even when validated later on at several national offices. **DO NOT** include licenses obtained from other holders of European patents.

(a) **Indicate the total number of European patents (including divisionals) in your portfolio at the end of the following years. (Note that the same patents may remain for several years in the portfolio.) (Please enter “0” in each box where there was no portfolio):**

Year:	2000	2005	2010	2011	2012	2013
Number of European patents in portfolio:						

(b) **How have you acquired European patents during the last 5 years? Please tick all that apply.**

☐ Own patents through own R&D

Purchased patents...

☐ ... directly from other entities

☐ ... at patent auctions

☐ ... via a consortium

☐ Merged and/or acquired (parts of) other companies

☐ Other, please specify: _____

A patent portfolio represents **assets** that can be **valued in several ways**, such as the added value of sales of products, expected licensing revenue, value to be realised on sale of the patents, etc. Please answer the following questions about the monetary value of the European patents in your portfolio.

(c.1) **Do you currently monitor the monetary value of your European patent portfolio?**

Yes ☐

No ☐

Don't know ☐

Comments:

(c.2) **If possible, please estimate the monetary value of your European patent portfolio. A guess is acceptable, whether or not you answered “Yes” at (c.1).**

Monetary value of European patents in portfolio (please specify currency):

E. Patent Intermediaries

Over the last years there is a growing market for patents in Europe. Several actors are participating on this market:

(1) **Patent Development Entities**, that are primarily developing their patent portfolios organically through in-house research and

(2) **Patent Enforcement Agents** and/or **Intermediaries** that offer enforcement and negotiation services for patent owners.

(a) Which of the following <u>applies best to your entity</u> ? Please tick the ONE option only that applies best to your business line.	(b) Indicate your <u>activity as a patent seller or buyer</u> for your option selected in (a). DO NOT include licenses.		
	You are Seller	You are Buyer	You are neither
Patent Development Entity			
Operating entity (develop patents to support commercialisation of products or processes manufactured by the entity itself) ☐ →	☐	☐	☐
Non-operating entity (develop patents but not being able to produce them, e.g. independent inventors, universities etc.) ☐ →	☐	☐	☐
Other patent development entity, please specify: ☐ →	☐	☐	☐
Patent Enforcement Agent and/or Intermediary			
Broker (assist patent sellers and buyers) ☐ →	☐	☐	☐
Private / Public fund (trade patents with the aim to facilitate their usage) ☐ →	☐	☐	☐
Defensive aggregator (trade patents with the goal of licensing out) ☐ →	☐	☐	☐
Offensive aggregator (trade patents with the goal of asserting against companies bringing products to the market) ☐ →	☐	☐	☐
Other agent and/or intermediary, please specify: ☐ →	☐	☐	☐

(c) For each of the following entities, please indicate whether you have sold or licensed European patents to them, or bought or licensed European patents from them, in the past 5 years.

	You sold to...	You licensed to...	You bought from...	You licensed from...
1. Independent inventors	☐	☐	☐	☐
2. Universities, research organisations	☐	☐	☐	☐
3. Operating companies	☐	☐	☐	☐
4. Brokers	☐	☐	☐	☐
5. Private / Public funds	☐	☐	☐	☐
6. Defensive aggregators	☐	☐	☐	☐
7. Offensive aggregators	☐	☐	☐	☐

(d) Only if you bought any European patents in the last 5 years as indicated in your answer to (c) above, what share of your current European patent portfolio do these purchases represent?

Share of current European patent portfolio:

%

F. Further comments:

Please comment on any matters concerning this questionnaire (continue on a separate sheet if necessary):

Thank you very much for your cooperation.

8.3 Data collection procedure

As in previous years, data collection was done through a **combination of telephone and mail interviews**, and consisted of three steps.

8.3.1 International search for up-to-date telephone numbers

Updated telephone numbers were sought for the 2 840 EPO applicant addresses (Biggest and Random samples).

The following sources were used to search for telephone numbers:

- Internet search engines
- Websites of the companies on the internet
- Special business pages on the internet
- Phone directories of the relevant countries

As in previous years, up-to-date telephone numbers could not be found for all applicants in the gross sample. It was difficult to research telephone numbers particularly for private inventors, but also for companies in the US and UK, and applicants in the "Other countries" category. All in all, it was not possible to find (correct) telephone numbers for a total of 183 addresses.

8.3.2 Telephone contact interviews

Following the research step, telephone contact interviews were conducted with applicants whose current telephone number had been obtained. The contact interviews consisted of the following steps:

- Identifying the target person within the company or organisation who could answer the questions in the questionnaire
- Introducing the background and the purpose of the survey to the target person and requesting his/her participation
- Recording the name and e-mail address or, where required, fax number of the target person, or recording their reason for declining, where applicable

Due to the complexity of the topics, all participants received the questionnaire in writing to enable them to look up the required figures and provide reasonable estimates. In 71 cases (mainly Japan), the questionnaire and the accompanying letters were sent via fax only. However, the majority of applicants preferred to receive the documents via e-mail (1 924 cases). Only five applicants received the documents via fax as well as e-mail. In ten cases, the documents were sent by postal mail, as fax delivery did not work.

The main contacting phase, i.e. sending the personalised questionnaires and accompanying letters to the participants, started on **5th May, 2014**, directly after the main interviewer briefings.

From 28th July until 22nd August, there was a summer break in European countries, as in previous years. During this time, fieldwork was not completely stopped at any point; nevertheless, the interviewers only conducted previously agreed calls, while incoming questionnaires were collected as usual.

8.3.3 Main interviews

The target respondents were offered several modes for returning a completed questionnaire: e-mail, fax, telephone, and postal mail. Principally, the respondents were asked to send their questionnaire to the EPO. If this did not suit their need for data protection, they could return the questionnaire directly to Ipsos. In this case, the identity was not made known to the EPO. Alternatively, the respondents could opt for a telephone interview.

Most questionnaires were completed by the target respondents themselves and sent back to the EPO by e-mail or fax. Compared to last year, e-mail response stayed on a high level (316 in 2009 vs. 496 in 2010 vs. 560 in 2011 vs. 631 in 2012 vs. 598 in 2013 vs. 603 in 2014). A few responses (28) were collected directly through a follow-up telephone call. Compared to previous years, the number of fax responses dropped considerably, from 90 in 2012 and 99 in 2013 to only 25 in 2014. The reason for this may well be that fax is no longer a preferred mode of reply. However, at one point, there was also a technical problem at the EPO for forwarding questionnaires to Ipsos via their fax number, so that a certain number of fax replies were not delivered at all. Ipsos tried to identify and call back such applicants in the sample, but this was not possible with all of them.

Proactive fieldwork was finished by 18th September, 2014. However, to increase the number of responses, all complete questionnaires received by 30th September, 2014 were included in the analysis, as well as one additional very late answer from the end of October 2014.

The following table shows the distribution of responses received by the EPO and by Ipsos in 2014:

Return Type	Questionnaires sent to EPO							Questionnaires sent to Ipsos						
	2012	2013	2014	EPC	US	JP	OT	2012	2013	2014	EPC	US	JP	OT
E-mail	482	454	437	267	66	92	12	149	144	166	95	33	29	9
Fax/letter	84	58	11	7	2	2	-	6	41	14	12	2	-	-
Phone	-	-	-	-	-	-	-	36	46	28	26	1	1	-
Total	566 75%	512 69%	448 68%	274	68	94	12	191 25%	231 31%	208 32%	133	36	30	9

Table 36: The distribution of responses received by the EPO and by Ipsos

In total, **656 interviews** were realised in 2014. The number of responses was lower than last year (743 interviews in 2013, 757 interviews in 2012, 782 interviews in 2011, 804 interviews in 2010, 702 interviews in 2009, 772 interviews in 2008, 747 in 2007, and 772 in 2006).

Of these 656 participants in 2014, 158 also took part in the 2013 survey (according to raw capitalised names for both Random and Biggest groups, including boost samples and both special request samples). This rate of cases overlapping with the previous year's survey has consolidated at 24% in 2014 (overlap with 2013) after growing continuously for the past three years, from 10% in 2010 (overlap with 2009), 15% in 2011 (overlap with 2010), 18% in 2012 (overlap with 2011) to 23% in 2013 (overlap with 2012).

Cases overlapping with the 2013 survey are split by region as follows:

	Total	EPC	US	JP	OT
<i>Base: total number of interviews 2014</i>	656	407	104	124	21
Number of 2014 survey respondents also having participated in the 2013 survey	158 24%	83 20%	13 13%	60 48%	2 10%

Table 37: Cases overlapping for 2013 and 2014, split by region

The following table shows the total number of applicants that were selected for the survey, the number of applicants who dropped out for various reasons, the final number of responses received for the total net number of applicants, and the split into Biggest and Random groups.

	Total**		Biggest		Random	
	n	%	n	%	n	%
Total gross sample	2 840	100.0	415	100.0	2 785	100.0
Addresses not found	183	6.4	1	0.2	181	6.5
Addresses found	2 657	93.6	414	99.8	2 604	93.5
Dropouts (1)	702	26.4	81	19.6	694	26.7
Adjusted sample	1 955	73.6	333	80.4	1 910	73.3
Dropouts (2)	1 299	48.9	178	43.0	1 272	48.8
Total responses/ response rate*	656	24.7	155	37.4	638	24.5

(1) Number of losses: company was identical with/included in another one already identified in the sample; an appropriate contact was not found or could not be reached; contact was never available; company is being restructured or never available, etc.

(2) Number of refusals: questionnaire not returned; no time available for dealing with the matter; no interest in filling in the questionnaire; company policy; data too confidential; not able to collect requested data, etc.

*) Calculation: total responses over addresses found (response rate 2, see section 7.9.3)

**) Including additional addresses requested by EPO joint cluster managers/aggregator addresses

Table 38: Overview of samples and responses received

During the main interview phase, the respondents were, if necessary, contacted several times through follow-up telephone calls, in order to realise both a high response rate and a high response quality. These follow-up calls aimed to:

- Arrange appointments with target persons who were difficult to reach
- Remind respondents about the questionnaire
- Clarify questions and help respondents complete the questionnaire
- Collect the responses by telephone, where appropriate.

All telephone contact interviews and, where applicable, main interviews were conducted centrally by the Ipsos Call Centre in Munich. This facilitated efficient and reliable survey coordination.

All interviewers involved were either native speakers of the required languages, or spoke those languages fluently. Many of them already had prior experience with patent-related topics or other/previous EPO surveys. All 16 interviewers received a detailed briefing about the study and the contents of the questionnaire, in order to prepare them for any questions from the target persons. Delegates from the EPO attended the initial briefing of the interviewers.

The 2014 questionnaire was again available in multiple languages.

8.4 Experiences during fieldwork

During fieldwork, the complexities of company structures were considered in order to avoid data overlaps. Multiple contacts with one and the same department through different company subsidiaries were avoided as far as possible, e.g. by carefully checking the gross sample for companies with identical or similar names.

As introduced in 2010, the fieldwork in 2014 started about a month earlier than the start dates in 2009 or the years before. This enabled the fieldwork staff to progress better with initiating contacts/conducting reminder calls with the respondents prior to the summer break. In recent years' surveys, including this one, respondents tended to take longer to send back their replies so that a considerable number of follow-up calls were needed to motivate contact persons.

The following table shows the average number of days required from questionnaire dispatch to respondents until receipt of their valid response in comparison for several survey years. It shows a continuous increase from 2008 to 2011 with following ups and downs on a high level in the years 2012 to 2014.

	2008	2009	2010	2011	2012	2013	2014
Average number of days required from dispatch to receipt	27	29	35	38	43	37	41

Table 39: Average number of days required from questionnaire dispatch to respondents until receipt of response

As in previous years, the contact phase was particularly difficult in the US. Again, there was an increasing difficulty to identify target persons within the companies, because there is an extended use of mailbox systems and often a policy not to put any phone call through unless a correct name of a contact person can be provided.

Nevertheless, response rates for the Biggest and Random groups in the US increased compared to 2013 (Biggest group: 13 US interviews in 2013 compared to 26 in 2014; Random group: 72 US interviews in 2013 compared to 101 in 2014). Interviewers succeeded better to establish contact with US applicants. Firstly, this was achieved by making more use of applicant-specific inventor names which the EPO provided¹¹ together with the sample to be used as a “door-opener” to be put forward by the help desk or to ask for a contact on a mailbox. This made up for approximately 50 additional contacts with US applicants. Secondly, interviewers more often contacted US applicants via e-mail or online forms instead of phone this year. This also helped to make the first contacts. Both measures proved to be useful for US applicants and should be applied again in future surveys.

However, since 2010, the situation that interviewers only got through if they had the name of the contact person has not only been encountered in the US, but also in other countries. The fact that there was no appropriate contact found (including mailbox systems) is the most important reason for loss and increased considerably in 2014. This is also the most prevalent dropout reason for applicants from China where the response rate decreased nearly to zero. That the relevant contact was never available was another major reason for losses that gains importance. As a result, the total number of losses increased considerably from 2013 to 2014.

In terms of refusals after the first contact was established, more and more respondents tend simply not to send back the questionnaire without any feedback at all or without giving any specific reason. This seemed to be a major problem in Germany this year. Also, many applicants indicated not to have the time to answer the questions. Some applicants that had participated in past years explained that they did not want to take part in the current year. Others found the questionnaire too difficult to fill in and more complicated than expected. Moreover, some applicants were not willing to participate in the survey as they did not recognise its benefits. However, the total number of refusals dropped slightly from 2013 to 2014.

Taking together the forecasts of increased numbers of losses and decreased numbers of refusals, overall response rates turned out to be lower in 2014 than they had been in 2013. For more details refer to the non-response analysis in **Section 8.9** below.

¹¹ The inventor names were found in the PATSTAT database of published patent applications, after linking the capitalised applicant names to that database.

8.5 Questionnaire checks

Each returned questionnaire was checked in detail and corrected according to special rules agreed with the EPO. In cases where answers were not comprehensible, respondents were contacted again for clarification, if possible. Wherever reasonable, additional verbal information provided by the respondents was quantified and used to fill in missing figures in the questionnaire. Also, some missing general company information (e.g. turnover, number of employees) was researched and taken from web pages on the internet. All relevant modifications were recorded on a separate change list.

Rules were also applied to ensure that the answers given to the questions were correctly transcribed and interpreted in the electronic database. In cases where percentage growth rates were given instead of real figures, these were converted into equivalent filing figures on which the analyses were based. Rules were given concerning the interpretation of zero, to ensure correct interpretation where zero was given either as a figure or as an indicator of no change compared to the base year.

Technical areas that were noted verbally in the "Others" line of Part C were allocated to one of the 14 joint clusters ex post, where possible, usually by looking up company activities on the WIPO PATENTSCOPE website (www.wipo.int/patentscope).

8.6 Plausibility rules

To ensure that the answers given in the questionnaire were logical and consistent, some plausibility rules were set up. The rules covered the following topics:

General rules:

- The worldwide total of first filings (line j of **Section B**) was compared with the sum of the first filings reported for Euro-direct/European patent applications under the EPC (excluding PCT) (line a), PCT-IP/international applications under the PCT (international phase) (line b), and national applications (lines c, d, e, f, g, h, and i) as well as with the total number of first filings given in Part C/question f. If missing or implausible, the worldwide total of first filings was calculated according to the figures provided, or otherwise the total was deleted. The calculated sum can be interpreted as an estimate of the worldwide total of first filings.
- We presume that first filings are most often filed at the applicant's home country office. Therefore, there should not only be Euro-direct (line a) or PCT-IP (line b) first filings, but also first filings at national offices.
- In addition, for non-EPC-respondents (US, JP, CN, etc.), the number of first filings at the EPO (Euro-direct, line a) should not be much higher than the number of first filings at the respective home office in the same year. In addition, a non-EPC-respondent should not have more first filings at the EPO than subsequent filings at the EPO one year later.

Specific rules for "critical codes" that can lead to removal from the analysis:

Some plausibility checks resulted in "critical codes" in the electronic database that identify an answer scenario as being dubious if the following rules were not met:

- The numbers in any field under subsequent filings should be comparable to (say, not more than three times as high as) the number under worldwide total first filings (line j) for the previous year.
- The numbers for PCT-NP/Euro-PCT-RP applications (PCT applications that entered the national/regional phase) in any field for 2015 and 2016 (lines k, l, m, n, o, or p) should be comparable to (say, not more than three times as high as) the combined figures under PCT-IP first filings and subsequent filings (line b) in 2013 and 2014, respectively.
- Any scenario that gave the impression of being dubious due to other reasons.

Specific rules resulting in an analysis as combined filings only:

In addition, a check was made whether there was any evidence that respondents had not distinguished between first and subsequent filings. Such cases were analysed as combined filings only. This refers to the following rules:

- When a respondent indicated a more substantial number of first filings for offices that are not the home office, there should be subsequent filings in the following year. If there are only figures provided for the first filings column, this may indicate that the respondent did not distinguish between first and subsequent filings but put them together.
- When a non-EPC respondent indicated subsequent filings at the home office (national office of applicant residence), but no subsequent filings in other countries/procedures. This may also indicate that first and subsequent filings were put together.
- When there was a specific comment by the respondent that first and subsequent filings could not be distinguished (no such case in 2014).
- When a respondent indicated PCT-IP first filings 2013, but no PCT-IP subsequent filings in any year, and the EPO filing database shows zero PCT-IP first filings at the same time, this may indicate that first and subsequent PCT-IP filings were put together. We presume that applicants rarely file PCT-IP as first filings only, with no PCT-IP subsequent filings. (New rule for 2014.)

Such suspected combined answers could not properly be allocated or partitioned between first and subsequent filings, and unfortunately, could not be used for the more detailed analyses as they are calculated for this report. They were marked with a comment code in the data set and were included only at a higher level of aggregation with first and subsequent filings combined.

The following table shows the distribution of such cases in total (Biggest and Random groups put together) and broken down by residence bloc. While the problem of missing subsequent filings is slightly more relevant for applicants from the US, JP, and Other countries than for EP applicants, a missing differentiation of PCT-IP first and subsequent filings is most prevalent in the US.

	Total	EP	US	JP	OT
<i>Total number of interviews</i>	656	407	104	124	21
Cases without subsequent filings entered, but first filings	27 4%	9 2%	6 6%	9 7%	3 14%
Cases with subsequent filings at home office only	17 3%	0 0%	7 7%	9 7%	1 5%
Cases without PCT-IP subsequent filings entered, but PCT-IP first filings	35 5%	20 5%	11 11%	4 3%	0 0%

Table 40: Distribution of cases that can be analysed at a higher level of aggregation only

8.7 Follow-up calls

In the previous years' surveys, it was noticed that some respondents sent back the questionnaire without providing most of the details crucial for forecasting EPO patent applications (Section B, first matrix table and question (k) on Euro-PCT-RP). As in previous years, follow-up calls were set up to collect the missing information in a more systematic and structured manner, which provided useful input in Section B for a higher completeness of answers. Hence, in 2014, it was again decided to focus efforts on reconnecting or following-up with such respondents, and collecting the information in Section B as completely as possible for EPO procedures (lines (a) and (b) and, which was new in 2014, also (k) of the questionnaire).

Certain rules (referring to Section B, first and second matrix table) were set up to undertake these follow-up calls. A follow-up call was made for cases that ...

- **Provided only base year filings but no forecast** for one or more of the EPO procedures (a), (b) and (k) **for 2014** (2015 and 2016 only asked for if a follow-up call was done anyway)
- **Did not provide any base year figures** (2013) for EPO procedures (a) and/or (b) and/or (k)
- **Did not have at least one EPO application** in line (a) or (k) in base year 2013 (as sampling was restricted to such applicants at the EPO in 2013)
- **Indicated percentage growth rates for 2014-2016 based on zeros or blanks** (Growth rates indicate that respondent wanted to communicate some information. So this information needed to be checked in order to be meaningful.)

In total, 235 questionnaires led to a follow-up process to get the missing information. However, about 300 calls were required to handle these 235 questionnaires. This means a considerable effort was made to reach the 235 respondents, as there were drop-outs for various reasons such as contact not being reachable, number being busy, re-directed to a mailbox, etc.

Structure of reasons for follow-up calls

Table 41 shows that the key reason for undertaking the follow-up calls was blank responses to questions related to the estimation of future patenting activities at the EPO in 2014 (76%). Other reasons were related to implausible statements regarding sampling conditions, etc.

Reasons for follow-up calls	
<i>Base: questionnaires requiring a follow-up call</i>	235
BLANK for EPO filings in (a) and/or (b) and/or (k) for 2013 and 2014	55%
BLANK for EPO filings in (a) and/or (b) and/or (k) for 2014	21%
No EPO filings (zero or BLANK) neither in (a) nor in (k) for 2013	11%
First and second matrix in Part B scores are the same ¹	6%
Others	6%

1 Same figures for filings at the EPO or national offices in one and the same year in both tables may be dubious and may result from a misunderstanding of procedures. This, however, was no systematic rule for a follow-up call.

Table 41: Reasons for follow-up calls

Results of follow-up calls

The follow-up calls had a 43% success rate (gaps from 102 respondents out of 235 were filled in). However, this rate has decreased compared to last year when it was 67% (gaps from 169 respondents out of 252 were filled in). It depends, of course, on the willingness and capability of respondents to provide additional figures, but also on reachability and time needed by respondents to return the questionnaire which both has worsened since 2012 and led to a lack of time to proceed with follow-up calls in all relevant cases.

The following two tables show the results of follow-up calls in terms of changes done by the respondents.

Results of follow-up calls	Changes made	No changes	Not reached/ lack of time
BLANK for EPO filings in (a) and/or (b) and/or (k) for 2013 and 2014	40%	17%	43%
BLANK for EPO filings in (a) and/or (b) and/or (k) for 2014	48%	14%	38%
No EPO filings (zero or BLANK) neither in (a) nor in (k) for 2013	31%	12%	50%

Table 42: Results of follow-up calls

As a result, follow-up calls still increased the completeness of answers for the EPO procedures Euro-direct (line (a)) and PCT-IP filings (line (b)) compared to 2011 when no such calls were conducted. However, compared to 2012 and 2013, the less successful follow-up calls led to less complete data in the end.

Euro-direct (a) and PCT-IP (b): Completeness of responses – by year	2011	2012	2013	2014
<i>Base: total interviews achieved</i>	782	757	743	656
Filled (a) first two years (FF+SF) (2010/11; 2011/12; 2012/13; 2013/2014)	55%	77%	77%	69%
Filled (a) for first two forecasting years (FF+SF) (2011/2012; 2012/2013; 2013/2014; 2014/2015)	51%	64%	65%	60%
Filled (a) for all years (FF+SF)	49%	61%	62%	57%
Filled (b) first two years (FF+SF) (2010/11; 2011/12; 2012/13; 2013/2014)	53%	75%	76%	66%
Filled (b) for first two forecasting years (FF+SF) (2011/2012; 2012/2013; 2013/2014; 2014/2015)	49%	61%	65%	58%
Filled (b) all years (FF+SF)	46%	58%	62%	54%
Filled both (a) and (b) first two years (FF+SF) (2010/11; 2011/12; 2012/13; 2013/2014)	49%	72%	74%	64%
Filled both (a) and (b) for first two forecasting years (FF+SF) (2011/2012; 2012/2013; 2013/2014; 2014/2015)	46%	59%	62%	55%
Filled both (a) and (b) for all years (FF+SF)	43%	56%	59%	52%

Table 43: Completion level for Euro-direct and PCT-IP after follow-up calls by year

With regard to completeness of responses for Euro-PCT-RP applications (line (k) in 2014), the level from 2013 to 2014 remained stable, although follow-up calls were done more systematically in 2014 for this procedure.

Euro-direct (a) and Euro-PCT-RP (k): Completeness of responses – by year	2011	2012	2013	2014
<i>Base: total interviews achieved</i>	782	757	743	656
Filled (k) first two years (2010/11; 2011/12; 2012/13; 2013/2014)	75%	73%	78%	79%
Filled (k) for first two forecasting years (2011/2012; 2012/2013; 2013/2014; 2014/2015)	68%	63%	68%	69%
Filled (k) for all years	64%	58%	64%	64%
Filled both (a) and (k) first two years (FF+SF) (2010/11; 2011/12; 2012/13; 2013/2014)	50%	63%	69%	62%
Filled both (a) and (k) for first two forecasting years (FF+SF) (2011/2012; 2012/2013; 2013/2014; 2014/2015)	46%	52%	57%	53%
Filled both (a) and (k) for all years (FF+SF)	44%	49%	55%	49%

Table 44: Completion level of responses for Euro-direct and Euro-PCT-RP after follow-up calls by year

With regard to positions of the respondents within companies, **Table 45** and **Table 46** show the completeness of answers regarding questions B (a) and (b) or B (a) and (k) respectively, according to the recorded positions of the respondents within their companies. Apart from the Others group, it seems that respondents from top management (particularly those from non-EPC countries) give less complete answers for all EPO procedures/years than staff from the patent or IP or technical departments do.

Euro-direct (a) and PCT-IP (b): Completeness of responses 2014 – by position	Total	Top man- age- ment	Senior patent/IP/ tech dept.	Other patent/IP/ tech dept.	Patent/IP attorney, legal dept.	Others
<i>Base: total interviews achieved</i>	656	65	145	248	91	45
Filled (a) first two years (FF+SF) (2013/2014)	69%	57%	76%	71%	75%	60%
Filled (a) for first two forecasting years (FF+SF) (2014/2015)	60%	51%	64%	62%	65%	53%
Filled (a) for all years (FF+SF)	57%	49%	59%	60%	57%	53%
Filled (b) first two years (FF+SF) (2013/2014)	66%	54%	74%	68%	68%	60%
Filled (b) for first two forecasting years (FF+SF) (2014/2015)	58%	52%	66%	60%	58%	49%
Filled (b) all years (FF+SF)	54%	48%	60%	58%	51%	49%
Filled both (a) and (b) first two years (FF+SF) (2013/2014)	64%	49%	70%	67%	67%	56%
Filled both (a) and (b) for first two forecasting years (FF+SF) (2014/2015)	55%	46%	60%	59%	57%	47%
Filled both (a) and (b) for all years (FF+SF)	52%	42%	54%	57%	49%	47%

Table 45: Completion level for Euro-direct and PCT-IP after follow-up calls in 2014 by positions of the respondents within companies

Euro-direct (a) and Euro-PCT-RP (k): Completeness of responses 2014 – by position	Total	Top management	Senior patent/IP/tech dept.	Other patent/IP/tech dept.	Patent/IP attorney, legal dept.	Others
<i>Base: total interviews achieved</i>	656	65	145	248	91	45
Filled both (a) and (k) first two years (FF+SF) (2013/2014)	62%	49%	68%	64%	68%	49%
Filled both (a) and (k) for first two forecasting years (FF+SF) (2014/2015)	53%	43%	57%	55%	60%	40%
Filled both (a) and (k) for all years (FF+SF)	49%	42%	52%	53%	54%	38%

Table 46: Completion level for Euro-direct and Euro-PCT-RP after follow-up calls in 2014 by positions of the respondents within companies

8.8 Respondents' reactions to the questionnaire

As usual, the questionnaire required a high level of commitment from the respondents. Some respondents found the questionnaire too complex, time-consuming and difficult to understand. Often it was not possible to fill in all information requested.

Again, there was a significant time lag between the initial contact and the response which actually increased again in 2014 compared to 2013 (see **Table 39**). So a substantial number of additional calls (in many cases 8 to 12 calls) were required to remind and encourage respondents to complete the questionnaire, and to assist respondents with explanations about special terms in the questions.

In general, some respondents had the following difficulties when responding to the questionnaire:

- The data required are not available.
 - Data are not recorded in the required structure.
 - Some organisations do not record the requested data.
 - Data are only available for a larger/another part of the company than that requested.
 - Data are not available because the company is currently under transition.
- The data are confidential.
- Some questions or terminology used in the questionnaire were not clear.
- Some questions were seen as not being relevant to their organisation.

8.9 Non-response analysis and response rates

8.9.1 Address qualification

In 2014, it was possible to obtain 414 telephone numbers for 415 Biggest addresses (nearly 100%) through the international research procedure. This is about the same level as in 2013. In the Random group (including target group overlap), the percentage of telephone numbers found was smaller than that of the Biggest group and also remained about the same as last year (94% in 2014 vs. 94% in 2013 vs. 96% in 2012 vs. 94% in 2011 vs. 89% in 2010 vs. 95% in 2009).

8.9.2 Losses

In 2014, 8% of the addresses found for the Biggest group were identical with, or included in, another applicant in the sample. A further 12% had to be classified as non-systematic losses, which is more than in 2013 when it was 5%. Addresses were classified as non-systematic losses in cases of general drop-out not due to a refusal of the company or contact person (reasons such as no appropriate contact found/mailbox system, no availability, technical problems or language problems, or the company does no longer exist, etc.).

In the Random group, 6% of the addresses found were identical to, or included in, another applicant in the sample. Compared to 2013, this rate is about on the same level, as a result of the EPO's sampling method which eliminates duplicates in the gross samples to a large extent. Another 20% were non-systematic losses. As in the Biggest group, this share is higher than in previous years and has been constantly increasing (2013: 14%, 2012: 9%).

For both groups put together, the main reasons for losses were the facts that it becomes harder and harder to find the appropriate contact within the company and that interviewers face increasing difficulties in getting through mailbox systems, or that the contact was never available.

As a result, a first contact was established for 80% of the 415 Biggest group gross addresses (= "adjusted sample B"), which is less than in 2013 (89%). In the Random group, this rate is lower than in the Biggest group as usual (69% of 2 785 gross addresses), but also lower than in the previous year (75% in 2013). However, while EPC countries and Japan show rather high shares of established contacts similar to those of the Biggest group (EPC: 81% / Japan: 84%), the US (53%) and some other countries that gain importance to the EPO (e.g. China, 46%) show rather low quotas this year.

In absolute numbers, the useable number of contacts in the Random sample (adjusted sample B) was lower than in 2013 and 2012 (1 910 in 2014 compared to 2 076 addresses in 2013 and 2 268 addresses in 2012).

8.9.3 Response rates

As in previous years, in 2014 the general response rate was higher in the Biggest group than in the Random group. In terms of addresses found, **Table 38** shows that the overall response rate was 25%; 37.4% in the Biggest group and 24.5% in the Random group.

In the following more detailed **Table 47** and **Table 48**, response rates are primarily in terms of percentages against adjusted sample B (equivalent to "adjusted sample" in Table 38) ("response rate 1"). Alternative response rates against the numbers of addresses found ("response rate 2") include duplicates (according to names/addresses) and non-systematic losses in the denominator and are therefore lower than response rate 1.

Referring to the adjusted sample B (response rate 1), the overall response rate was 47% in the Biggest group and 33% in the Random group. If one disregards losses and uses the adjusted sample B as base, there is a minor improvement in the Biggest group compared to the previous two years (2013: 45%, 2012: 44%, 2011: 46%, 2010: 54% response rate). In the Random group, the level remains fairly stable compared to 2013 and 2012 (2013: 35%, 2012: 33%, 2011: 37%, and 2010: 43%).

However, in terms of response rate 2, which includes losses and identical cases and is calculated over addresses found, the response rate dropped in both target groups because the number of losses increased: In the Biggest group, response rate 2 dropped from 40% in 2013 to 37% in 2014; in the Random group, it dropped from 28% in 2013 to 25% in 2014. The main reasons for drop-out still are refusals, primarily "silent" refusals, e.g. respondents simply not sending back the questionnaire without indicating any specific reason. But the number of losses increased considerably, as already described above, especially the difficulty to get into contact with a suitable contact person within the applicant organisation, while the number of identical addresses has remained fairly consistent since 2013.

In terms of regions, response rate 1 improved for the US (both Biggest and Random groups), while it dropped across all the other groups – Japan, EPC countries, and the "Others" group (both Biggest and Random groups).

For **EPC countries** in the Biggest group, the response rates as well as the number of successful interviews are on a rather similar level to 2013 (86 interviews in 2013 compared to 83 interviews in 2014).

The response rate 1 for EPC countries in the Random group decreased from 44% in 2013 to 37% in 2014 (response rate 2: 32%), and now is back again on the 2012 level (38%). Higher than average response rates were achieved for some EPC countries such as Austria (53%), the Netherlands (53%), and Belgium (46%). On the other hand, response rates for Italy (30%), UK (27%), and Spain (22%) were below average. With regard to absolute numbers of interviews, the level of interviews achieved dropped for EPC countries in the Random group compared to 2013 (397 interviews achieved in 2014 vs. 480 interviews in 2013).

In **Japan**, the response rates decreased in 2014 in both sample groups: 56% (response rate 2: 49%) in the Biggest group (2013: 70%), and 50% (response rate 2: 43%) in the Random group (2013: 58%).

For the **US**, response rate 1 improved from 18% in the Biggest group in 2013 to 41% in 2014, and also in the Random group from 13% in 2013 to 21% in 2014. In terms of response rate 2, the increase turns out to be less pronounced, but it is still evident (increase from 14% to 27% in the Biggest group, and from 9% to 12% in the Random group). The reason for this discrepancy is a considerable increase of losses among US applicants in 2014, while the number of refusals decreased. As already described, there were some field methods that proved to be effective in 2014 to get responses from US applicants.

For the “**Others**” countries of the Biggest group, response rate 1 further decreased from 21% in 2013 to 13% in 2014 (response rate 2: 7%), and of the Random group from 22% in 2013 to 16% in 2014 (response rate 2: 9%).

The third columns from the right in both **Table 47** and **Table 48** show the numbers of responses achieved from blocs of residence and countries of origin. In addition, **Table 49** shows the numbers of responses by origin from the combined samples. Reasons for non-response are explained in **Table 50** (combined sample in comparison to 2013).

Bloc	Country	Addresses in gross sample ¹	Addresses not found	Addresses found	Included in/identical with other applicant ²	Adjusted sample A	Number of losses ²	Adjusted sample B	Number of refusals ³	Number of interviews	Response rate 1 ⁴	Response rate 2 ⁵
EPC	AT	5	0	5	1	4	0	4	2	2	50%	40%
EPC	BE	7	0	7	0	7	0	7	4	3	43%	43%
EPC	CH	20	0	20	1	19	2	17	8	9	53%	45%
EPC	DE	83	0	83	7	76	3	73	44	29	40%	35%
EPC	DK	7	0	7	0	7	0	7	3	4	57%	57%
EPC	FI	6	0	6	0	6	0	6	2	4	67%	67%
EPC	FR	29	0	29	3	26	0	26	11	15	58%	52%
EPC	GB	8	0	8	0	8	0	8	5	3	38%	38%
EPC	IT	5	0	5	1	4	1	3	2	1	33%	20%
EPC	NL	12	0	12	3	9	0	9	3	6	67%	50%
EPC	SE	12	0	12	0	12	1	11	6	5	45%	42%
EPC	Others	5	0	5	0	5	0	5	3	2	40%	40%
EPC	Total	199	0	199	16	183	7	176	93	83	47%	42%
JP	JP	89	0	89	4	85	7	78	34	44	56%	49%
US	US	97	1	96	11	85	22	63	37	26	41%	27%
OT	CN	8	0	8	0	8	4	4	4	0	0%	0%
OT	KR	12	0	12	1	11	4	7	5	2	29%	17%
OT	TW	2	0	2	0	2	1	1	1	0	0%	0%
OT	Others	8	0	8	0	8	4	4	4	0	0%	0%
OT	Total	30	0	30	1	29	13	16	14	2	13%	7%
Total	Total	415	1	414	32	382	49	333	178	155	47%	37%

1 Without addresses requested by EPO joint cluster managers/aggregator addresses

2 Both columns sum up to Dropouts (1) in **Table 38**

3 This column refers to Dropouts (2) in **Table 38**

4 Calculation: number of interviews over adjusted sample B

5 Calculation: number of interviews over addresses found

Table 47: Non-response statistics – Biggest group (incl. overlapping members of the Random group)

Bloc	Country	Addresses in gross sample ¹	Addresses not found	Addresses found	Included in/identical with other applicant ²	Adjusted sample A	Number of losses ²	Adjusted sample B	Number of refusals ³	Number of interviews	Response rate 1 ⁴	Response rate 2 ⁵
EPC	AT	55	1	54	7	47	2	45	21	24	53%	44%
EPC	BE	40	0	40	0	40	3	37	20	17	46%	43%
EPC	CH	109	2	107	7	100	10	90	61	29	32%	27%
EPC	DE	430	8	422	23	399	17	382	243	139	36%	33%
EPC	DK	34	1	33	1	32	2	30	18	12	40%	36%
EPC	ES	34	4	30	0	30	7	23	18	5	22%	17%
EPC	FI	27	2	25	0	25	2	23	13	10	43%	40%
EPC	FR	168	11	157	16	141	11	130	78	52	40%	33%
EPC	GB	105	11	94	4	90	9	81	59	22	27%	23%
EPC	IT	117	7	110	1	109	20	89	62	27	30%	25%
EPC	NL	56	4	52	4	48	3	45	21	24	53%	46%
EPC	SE	48	4	44	4	40	3	37	21	16	43%	36%
EPC	Others	83	16	67	2	65	13	52	32	20	38%	30%
EPC	Total	1 306	71	1 235	69	1 166	102	1 064	667	397	37%	32%
JP	JP	288	9	279	19	260	18	242	122	120	50%	43%
US	US	918	50	868	57	811	329	482	381	101	21%	12%
OT	AU	18	1	17	0	17	4	13	10	3	23%	18%
OT	CA	35	9	26	0	26	7	19	16	3	16%	12%
OT	CN	57	5	52	4	48	22	26	25	1	4%	2%
OT	IL	18	4	14	1	13	6	7	4	3	43%	21%
OT	KR	53	7	46	3	43	16	27	21	6	22%	13%
OT	SG	6	0	6	1	5	2	3	2	1	33%	17%
OT	TW	25	3	22	2	20	14	6	5	1	17%	5%
OT	Others	61	22	39	2	37	16	21	19	2	10%	5%
OT	Total	273	51	222	13	209	87	122	102	20	16%	9%
Total	Total	2 785	181	2 604	158	2 446	536	1 910	1 272	638	33%	25%

1 Without addresses requested by EPO joint cluster managers/aggregator addresses

3 This column refers to Dropouts (2) in Table 38

4 Calculation: number of interviews over adjusted sample B

2 Both columns sum up to Dropouts (1) in Table 38

5 Calculation: number of interviews over addresses found

Table 48: Non-response statistics – Random group (incl. overlapping members of the Biggest group)

Bloc	Country	Biggest (incl. target group overlap) ¹	Random (incl. target group overlap) ¹	Biggest & Random / net number of interviews ²
EPC	AT	2	24	24
EPC	BE	3	17	17
EPC	CH	9	29	29
EPC	DE	29	139	145
EPC	DK	4	12	13
EPC	ES	0	5	5
EPC	FI	4	10	11
EPC	FR	15	52	52
EPC	GB	3	22	22
EPC	IT	1	27	28
EPC	NL	6	24	25
EPC	SE	5	16	16
EPC	Others	2	20	20
EPC	Total	83	397	407
JP	JP	44	120	124
US	US	26	101	104
OT	AU	0	3	3
OT	CA	0	3	4
OT	CN	0	1	1
OT	IL	0	3	3
OT	KR	2	6	6
OT	TW	0	1	1
OT	Others	0	3	3
OT	Total	2	20	21
Total	Total	155	638	656

1 Without addresses requested by EPO joint cluster managers/aggregator addresses

2 Including addresses requested by EPO joint cluster managers/aggregator addresses

Table 49: Respondent structure

	2013 ¹		2014 ¹	
No. of addresses in gross sample – TOTAL	2814	100%	2822	100%
Addresses not found	176	6%	181	6%
Included in/identical with other applicant	159	6%	160	6%
No. of losses – TOTAL²	356	13%	540	19%
Appropriate contact not found/mailbox system	158	6%	290	10%
Contact never available	74	3%	151	5%
Technical problems (fax, e-mail address not working)	16	1%	32	1%
Company is never available	51	2%	21	1%
Company is being restructured	18	1%	17	1%
Company no longer exists	17	1%	12	0%
Language problems	7	0%	8	0%
Contact is sick/on vacation	8	0%	8	0%
Company will be liquidated	6	0%	1	0%
No. of refusals – TOTAL²	1381	49%	1290	46%
Did not return questionnaire	740	26%	610	22%
No time	148	5%	146	5%
No reason given	64	2%	141	5%
Not interested	174	6%	90	3%
Company policy	58	2%	67	2%
Not able to identify/collect data	65	2%	62	2%
Data too confidential	47	2%	53	2%
No name policy ³	25	1%	43	2%
Questionnaire too complicated	11	0%	13	0%
External attorney costs/too expensive	17	1%	9	0%
Participated in other EPO survey	3	0%	4	0%
Questionnaire too long	10	0%	3	0%
Data security	16	1%	1	0%

1 Without addresses requested by EPO joint cluster managers/aggregator addresses

2 The list below is a selection of reasons only.

3 Blocking operators in case no correct contact name is available

Table 50: Reasons for non-response compared to 2013 – Biggest and Random groups

8.9.4 Item non-response

Apart from the overall response rates, the different sections of the questionnaire were filled in with varying completeness, i.e. there are different response rates for different parts of the questionnaire. The completion rates of the questionnaire were 99% for part B (same level as in 2013), 98% for part C (96% in 2013), 86% for part D, and 74% for Part E. In **Table 51**, the percentages indicating completeness show the number of respondents with at least one answer in the respective part/question based on the number of total interviews achieved (not to be mixed up with response rates based on gross addresses or addresses found as indicated above). These gratifyingly high percentages hide cases where not all questions were answered for one part.

	Total¹		Biggest (incl. overlap)²		Random (incl. overlap)²	
<i>Base: no. of interviews</i>	656		155		638	
Part B overall	648	99%	153	99%	634	99%
Part B: at least one of Ba or Bb in at least one year	638	97%	152	98%	621	97%
Part B: at least one of Ba or Bb in at least one of 2014-16	592	90%	144	93%	575	90%
Part B: at least one of Ba or Bb in 2014	586	89%	143	92%	569	89%
Part B: at least one of Ba or Bb in 2015	511	78%	122	78%	497	78%
Part B: at least one of Bk in at least one year	597	91%	145	94%	581	91%
Part C overall³	640	98%	152	98%	622	97%
Part C technical domain (Cd)	603	92%	137	88%	586	92%
Part C R&D budget (Ce)	304	46%	70	45%	294	46%
Part C Filings 2013 (Cf) ⁴	635	97%	152	98%	618	97%
Part D overall³	564	86%	133	86%	546	86%
Part E overall³	488	74%	113	73%	472	74%

1 Including addresses requested by EPO joint cluster managers/aggregator addresses

2 Without addresses requested by EPO joint cluster managers/aggregator addresses

3 Verbal comments are not included in counts

4 Cases with transfer of total worldwide filings from Part B to Part C are included here

Table 51: Partial response rates – Biggest and Random groups

In **total** (Biggest and Random groups), out of 656 complete interviews, 638 responses (728 in 2013) provided information on either **Euro-direct or PCT-IP** (B(a) or B(b)) for at least one year/first or subsequent filings. A lower number (592) provided figures for at least one forecasting year for 2014 to 2016 for either Euro-direct or PCT-IP filings. As the overall number of interviews went down compared to 2013, this has further reduced compared to previous years (673 in 2013, 696 in 2012, and 715 in 2011). There is no effect of follow-up calls to be seen here because they seem to have been most successful if the respondent already had given some figure(s) on a certain procedure and only needed to complete the respective data row.

597 respondents (664 in 2013) gave figures for **Euro-PCT-RP applications** (B(k)).

603 respondents (642 in 2013) provided information on the **technical area** they are active in. However, 177 of these respondents noted their technical area(s) in the “Others” line (193 in 2013). Where possible (in 173 cases), these responses were allocated to one of the 14 joint clusters by Ipsos after data were collected. 304 responses (337 in 2013, 295 in 2012, 338 in 2011, 314 in 2010, and 239 in 2009) were used for the **analysis of R&D budgets** (C(e)).

In the **Biggest Group** (including overlap), out of 155 complete interviews, 152 cases provided information on either **Euro-direct or PCT-IP** (B(a) or B(b)) for at least one year/first or subsequent filings (equivalent response rate 2 over addresses found: 37%, which is about the same as the rate in the previous year: 39%). Of these, 144 responses provided figures for at least one forecasting year for 2014 to 2016 for either Euro-direct or PCT-IP filings. 145 responses provided information on **Euro-PCT-RP applications** B(k) (equivalent response rate 2: 35%, which is about the same as in 2013). For Section C, 152 respondents answered at least one question (equivalent response rate 2: 37%; which is fewer respondents than in 2013: 163, but fairly similar to 2012: 149), and 70 responses were used for the **analysis of R&D budgets** C(e) – equivalent response rate 2: 17%, compared to 20% in 2013). 133 respondents provided answers to **Section D** questions (equivalent response rate 2: 32%), while 113 respondents provided information on **Section E** (equivalent response rate 2: 27%).

In the **Random Group** (including overlap), out of 638 complete interviews, 621 responses provided information on either **Euro-direct or PCT-IP** (B(a) or B(b)) for at least one year/first or subsequent filings (equivalent response rate 2: 24%, which is slightly lower than in the previous year). Of these, 575 responses provided figures for at least one forecasting year for 2014 to 2016 for either Euro-direct or PCT-IP filings. 581 responses supplied information on **Euro-PCT-RP applications** B(k) (equivalent response rate 2: 22%, compared to 25% in 2013). For Section C, 622 respondents answered at least one question (equivalent response rate 2: 24%, compared to 27% in 2013), and 294 responses were used for the **analysis of R&D budgets** C(e) (equivalent response rate 2: 11%, compared to 13% in 2013). 546 respondents answered **Section D** questions (equivalent response rate 2: 21%, compared to 24% in 2013), while 472 respondents provided information on **Section E** (equivalent response rate 2: 18%, compared to 24% in 2013).

9 Annex II: Verbal comments received from participants

9.1 Multiple comments

Table 52 below lists a selection of additional verbal comments that were received several times (excluding answers to open-ended comment sections which are not considered here). Numbers refer to the number of times a specific comment was received. Sometimes the same respondent made identical comments in several parts of the questionnaire. The comments may refer to more than one of the questions in the particular part mentioned. Comments given in Part F sometimes explicitly referred to other parts of the questionnaire and are counted there.

Questionnaire part:	B	C	D	E	F	Total
	<i>Absolute frequency of comments</i>					
No answer / data not available / not collecting data in requested structure/ do not know	15	63	56	10	9	153
Confidential		5	2		10	17
Difficult to provide figures / hard to estimate / estimation only	2	8	1		1	12
Unclear question / terminology / difficult to answer				3	9	12
Total	17	76	59	13	29	194

Table 52: Numbers of multiple verbal comments

9.2 Individual comments (selection)

9.2.1 Individual comments on patenting strategy and development

- In principle, we have decided not to apply for patents any longer in the future.
- We have not yet started commercialising technology. We have 2 applied patents of which the first released and the second is releasing soon and a third will be applied for this year.
- My business purely develops packaging IP with a view to future licensing or sale.
- Since the change of the German patent law, first filings at the EPO are no longer necessary. Subsequent or regional phase filings at the EPO are not relevant for us at the moment because of the very high procedural cost at the EPO and because of EPO practices to assess unity (even according to the new EPO rules).
- The questionnaire does not seem to include sections on patents developed by the company on behalf of third parties as part of R&D funded projects (participation of the company to third-party patents as inventor).

- [Our company] is being substantively re-structured at the moment, therefore there will not be any filings in the next years.
- In the past years, we only filed one patent per year (priority in Germany) and mostly did a subsequent filing at the EPO. We do not plan for direct EP first filings in the future, only subsequent EP filings to cover the UK and France. Also, we have never done PCT applications.
- Countries vary every year including EP applications. [X] per month are new applications in the US and the rest are foreign filings to beat the one-year deadline from the original filing.

9.2.2 Individual comments on monitoring the value of European patent portfolio

- The value of the patent portfolio is monitored by [another subsidiary in another country].
- We monitor the value from different aspects such as legal strength, value of market covered, growth potential, and strategic value.
- A patent valorisation takes place only on a case-by-case basis; we are planning to implement a regular valorisation of the entire portfolio.
- The monetary value is based on the charges that can be achieved in the market (by licences or purchases).
- We keep the number of patents, but we don't appraise monetary value.
- We monitor the patent portfolio in order to assess the value of the product on the market.
- We don't patent for this reason. It is for defence and freedom to operate.
- This is not possible to answer for our industry. A high proportion of our sales are protected by patents; but it is hard to project a value on European patents alone.
- We have a large number of assets coming and going from the portfolio and valuation of a single patent is a complex matter. So we cannot place a value on the entire portfolio.
- We intend to do this in the future (and are in a process of evaluating how to do this).
- We track what our patent portfolio generated, [but] not discriminated by countries.
- We trace the income from licencing agreements, sales, and spin-offs.
- It is difficult to evaluate the value of the patent portfolio.
- Too early stage in product development.
- We do not calculate the monetary value of the entire portfolio but we do, of course, consider the value of specific patents or groups of patents as they relate to marketed products, or where we are contemplating licensing a patent or a part of the patent portfolio.

9.2.3 Individual comments on EPC system/EPO quality

- With regard to cost we would appreciate a language-independent discounting rule for SMEs.
- We are active in the high technology sector and concentrate on key markets. If there are alternative relevant patenting procedures we, of course, use the more cost-efficient and client-friendly variant (such as the German Patent and Trade Mark Office).
- The patent system is much too expensive for small inventors and companies; this for sure results in a substantial loss. It should be simplified at lower cost.
- This questionnaire seems to indicate that the EPO is distracted from what should be its primary goal of providing timely examination at a reasonable cost. The EPO's combination of escalating yearly annuity fees and ever-increasing examiner response times provides a systematic reward to the EPO for being slow and unresponsive. The EPO stands alone among its peers in this regard. This combined with the EPO's obvious lack of resolve to acknowledge and address the problem, gives me pause to reconsider the value proposition offered by the EPO versus bypassing the EPO and filing directly at national offices instead.
- Request to EPO: inspect patents more quickly; cost for inspection is too expensive. Please reduce the cost to apply for patents.
- It is a big disadvantage that EPO examiners do not communicate with applicants in case there is anything unclear, etc. With more communication misunderstandings could be avoided. This is much better at the US Patent Office.

10 Annex III: Analytical methodology

This Annex explains the methodology used for forecasting growth in EPO filings. While different forecast approaches employing no breakdown or specific breakdown types (e.g. residence bloc breakdown or different filing types such as Euro-Direct or PCT-IP) are shown within the report, the core methodology used remains the same.

10.1 Estimates of growth for the Biggest group via the Composite index

For the Biggest group, a straightforward growth index is constructed by dividing the sum of intended filings in a given year by the sum of filings made in the base year. Thus

$$CI_r = \frac{\sum_{i=1}^n x_{i,r}}{\sum_{i=1}^n A_i}$$

is the composite growth index for a group of applicants $i=1, \dots, n$ in year r , where $x_{i,r}$ is the intended number of filings reported by the i -th respondent for the year r of interest, and A_i is the known number of filings made by the i -th respondent in the base year.

10.2 Estimates of growth for the Random group via the Q-index

For the Random group, a weighted average is made of the individual growth rates determined per respondent after logarithmic transformation. The Q-index is the exponent of this weighted average.

If $x_{i,r}$ is the intended number of filings reported by the i -th respondent for the year r of interest, and A_i is the known number of filings made by the i -th respondent in the base year, then

$$l_{i,r} = \frac{x_{i,r}}{A_i}$$

is the individual growth index for applicant i in year r . The Q-index averages these individual growth indices on a logarithmic scale using Poisson weights q_i (see following section), and is calculated as

$$Q_r = \exp \left[\frac{\sum_{i=1}^n q_i \log(l_{i,r})}{\sum_{i=1}^n q_i} \right].$$

The logarithmic transform was introduced in the Applicant Panel Survey 2002 report, Annex IV.

10.3 Poisson weighting of Random group forecasting results

The established method used in this report to analyse the Random group involves Poisson weights that take account of the probability of inclusion of the respondent within the sample asked, as measured via the number of filings made in the base year according to the EPO database.¹²

The Poisson weight for each respondent is calculated as

$$q_i = \frac{A_i}{1 - e^{-n^+ \left(\frac{A_i}{A}\right)}}$$

where n^+ is the number of extractions made for sampling purposes, A is the total number of recorded filings in the base year, and A_i is the known number of applications made by the i -th sampled applicant in the base year. For this year's sample, $A = 140\,312$ (excluding divisional filings) and $n^+ = 4\,100$. The US booster sample was treated as if they had been members of the main Random group, and they were weighted accordingly.

10.4 Assessing variability of estimates and calculating confidence intervals

The variability of $\log(Q_r)$ is given by its raw variance

$$Var(\log(Q_r)) = \frac{\sum_{i=1}^n (\log(l_{i,r}) - \log(Q_r))^2 q_i^2}{(\sum_{i=1}^n q_i)^2},$$

which is then corrected by applying a finite population correction based on the proportion $FPC = \frac{A_b}{A}$ of filings present in the sample, where A_b is the number of base year filings accounted for in the survey, and A is the total number of known filings at the EPO for the base year. Thus

$$VAR_{FPC\ corrected} = Var(\log(Q_r)) * (1 - FPC)$$

is the FPC-corrected variance, the square root of which is reported as the standard error of growth estimates in tables throughout this report. Depending on the breakdown employed for a specific forecast, either a global FPC or a residence-specific FPC is used to calculate this corrected variance.

¹² See Applicant Panel Survey 2001 report, Annex III; and Applicant Panel Survey 2002 report, Section IV.1, Annex IV.

Finite population correction (FPC) values were obtained from the EPO database counts of Euro-direct and Euro-PCT-RP filings of respondents in the Random group as follows:

Residence bloc	FPC
Total	0.24
EP	0.26
JP	0.40
OT	0.03
US	0.19

Table 53: Finite population correction values by residence bloc

The FPC values shown here were used in the current analysis. In fact, these FPC values are conservative because they are based on database counts for filings by respondents, while the reported counts for base year filings by the respondents can be somewhat higher (see **Annex IX**, where numbers of applications are higher for applicants responding than for applicants asked, although, of course, the numbers of applicants responding are smaller than the numbers of applicants asked). This year's FPC values are moderately lower than those from the previous two years (the total FPC value has dropped to 0.24 from 0.27 for the previous survey). When compared to last year, the drop in FPC values provides anecdotal evidence of increased difficulty in successfully recruiting respondents from the JP and OT residence blocs. FPC values were calculated based on Total filings excluding divisional filings, since this was the population of filings on which the sampling mechanism was based.

Please see the Applicant Panel Survey 2006 report, Annex VI, for a detailed explanation and derivation of the finite population correction applied throughout this report.

The corrected variance estimates are then used to estimate confidence intervals for the predicted number of filings $\widehat{A}_r = A_b * Q_r$, where A_b is the number of base year filings. A 95% confidence interval for $\widehat{A}_r$ is calculated as

$$\widehat{A}_r \pm 2 * (\widehat{A}_r * \sqrt{\exp(VAR_{FPC \text{ corrected}})^2 - \exp(VAR_{FPC \text{ corrected}})}) .$$

For a detailed explanation of the derivation of confidence intervals for the predicted number of filings, please see the Applicant Panel Survey 2003 report, Annex IV.

10.5 Assessment of forecast quality using the root mean squared error of the forecast (RMSEF)

As introduced in the 2011 survey report, all forecast approaches with filings forecasts from the Random group are analysed in terms of the root mean squared error of the forecast (RMSEF), defined as

$$RMSEF(\hat{f}) = \sqrt{[bias(\hat{f})]^2 + Var(\hat{f})},$$

where $bias(\hat{f})$ is the difference between the forecast and the actual number of Total filings for year one (2014 in this survey); and $Var(\hat{f})$ is the variance of the forecast that is calculated as the Poisson weighted sum of squared differences from the actual number of Total filings.

10.6 Winsorization

Some of the forecast approaches in this survey, including this year's recommended forecast, were performed using a winsorized version of applicant responses.¹³ Using this method, individual applicant growth indices are adjusted by reigning in the most extreme growth indices after logarithmic transformation. Indices that fall below the 5% percentile and indices that lie above the 95% percentile are replaced by the growth index at the respective percentile. The adjusted data are then used for carrying out Q-index calculations according to the various breakdown scenarios.

When using winsorized data, standard errors of Q-index-based growth rate estimates are adjusted to take account of the winsorization by applying an inflation factor of

$$\frac{(n-1)}{(n-2k-1)},$$

where n is the number of sample cases overall, and k is the number of sample cases effected by the winsorization process at each end.¹⁴

10.7 Amalgamation of joint clusters into mega clusters

At the EPO, operations with respect to patent filings are organised according to industry segments, also called *joint clusters*. In the questionnaire Part C, respondents are invited to give some information broken down according to these classes. Joint-cluster-specific filing estimates help the EPO anticipate industry-specific trends and dynamics. For purposes of aggregating enough sample responses to give better forecasts by technical areas, the 14 joint clusters have been amalgamated into five larger groups in this report. These *mega*

¹³ Cf. Applicant Panel Survey 2005 report, Section 7.5.

¹⁴ Tukey and McLaughlin (1963): Less vulnerable confidence and significance procedures based on a single sample: Trimming and winsorization, *Sankhyā: The Indian Journal of Statistics, Series A*, vol. 25, no. 3, pp 331-352.

clusters each define a hopefully fairly homogenous group of industries. Through this amalgamation, each of the 14 joint clusters is assigned to just one of the mega clusters. The assignment is given in **Table 54**.

This ensures that an applicant's growth estimate retains the same overall leverage, regardless of the number of mega clusters the applicant may be active in. Specifically, the total Poisson weight obtained for each respondent is distributed across all active mega clusters based on the proportion of filings per mega cluster as obtained from answers to questions C(f) of this year's survey. Thus, even though a respondent's growth estimates may influence more than one mega cluster, the total weight, and thus influence, of a respondent is always equal to the original Poisson weight.

When deriving the standard error for mega-cluster-based analyses, a correction is made to avoid distortions caused by multiple mega cluster classifications. For the Random group, this correction takes into account the average multiplicity of mega clusters per responding applicant in this year's survey of 1.56¹⁵, and widens the confidence limits by multiplying standard errors by 1.25 (the square root of 1.56). As previously for the calculation of standard errors, a finite population correction is also applied. This has the compensatory effect of narrowing the confidence limits.

Growth estimates, broken down by mega cluster, are given in **Annex IV**. Additional analyses are also provided using mega cluster breakdowns in **Annex VI** and **Annex VII**.

Mega Cluster	Joint Cluster
Electricity	Electricity and Semiconductor Technology Electrical and Electronic Technology Applied Physics
ICT	Audio, Video & Media Computers Telecommunications
Inorganic Chemistry	Industrial Chemistry Polymers
Organic Chemistry	Biotechnology Pure & Applied Organic Chemistry
Traditional	Civil Engineering; Thermodynamics Handling & Processing Medical and Consumer Technology Vehicles & General Technology

Table 54: Amalgamation of joint clusters into mega clusters

¹⁵ See Section 12.1 for details of this calculation.

ANNEXES PART B: FURTHER RESULTS

11 Annex IV: Forecasts broken down by mega clusters

The forecasts for EPO filings were analysed with primary breakdowns by mega cluster (see **Annex III, Section 10.7**). For the Biggest group sample, the composite indices were calculated, while for the Random group sample, Q-indices were calculated.

11.1 Results broken down by mega cluster only

The forecasts of filings by filing type, filing route and mega cluster for the Biggest group are shown in **Table 55**. The analogous forecasts for the Random group, broken down by mega cluster, are given in **Table 56**.

This analysis is useful for business planning as it provides growth rate estimates for groups of individual EPO examining departments of the various primary combinations of first, subsequent, Euro-direct, and PCT-IP filings.

Biggest group (including critical codes)
Breakdown by EPO mega cluster
Composite indices

			Year					
			2014		2015		2016	
Filing type	Filing route	Cluster	Cases 14	Index 14	Cases 15	Index 15	Cases 16	Index 16
First	Euro-direct	Electricity	33	1.0780	26	1.1487	24	1.1816
		Organic Chemistry	19	0.9485	17	0.9827	16	1.0008
		Inorganic Chemistry	23	0.9856	20	1.0099	16	1.0016
		ICT	21	1.2140	15	1.1019	14	1.1127
		Traditional	49	1.0058	40	1.0691	37	1.0999
First	PCT-IP	Electricity	20	1.3127	17	1.3034	16	1.3146
		Organic Chemistry	12	1.0307	9	1.0362	8	1.0413
		Inorganic Chemistry	17	1.2867	16	1.2846	14	1.2933
		ICT	12	1.1726	8	1.2340	7	1.2356
		Traditional	28	0.6128	24	1.0856	23	1.1144
Subsequent	Euro-direct	Electricity	38	0.9759	31	1.0467	30	1.0392
		Organic Chemistry	11	1.0098	8	1.0551	8	1.0574
		Inorganic Chemistry	25	0.9280	20	0.9899	17	0.9552
		ICT	19	1.0063	12	1.0658	12	1.0640
		Traditional	54	1.0415	43	1.0720	41	1.0673
Subsequent	PCT-IP	Electricity	44	0.9533	37	1.0023	35	1.0191
		Organic Chemistry	28	1.0193	23	1.0605	23	1.0901
		Inorganic Chemistry	38	0.9559	32	0.9846	29	1.0003
		ICT	24	1.0023	17	0.9768	16	0.9792
		Traditional	69	0.9856	58	1.0427	55	1.0671

Table 55: Forecasts for EPO filings at the EPO – Biggest group, broken down by mega cluster

Random group (including critical codes)
Breakdown by EPO mega cluster
Q-indices

S.E. indicates standard error of logarithm

Filing type	Filing route	Cluster	Year								
			2014			2015			2016		
			Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
First	Euro-direct	Electricity	59	1.0708	0.1099	48	1.1042	0.0910	45	1.1535	0.0967
		Organic Chemistry	46	1.0421	0.0643	40	1.0887	0.0584	36	1.1164	0.0574
		Inorganic Chemistry	39	0.8850	0.1509	32	0.9743	0.1647	26	0.9529	0.1838
		ICT	33	1.2419	0.1100	24	1.2753	0.1303	24	1.2913	0.1296
		Traditional	111	1.0298	0.0693	90	1.1141	0.0656	83	1.1656	0.0841
First	PCT-IP	Electricity	38	1.2102	0.1183	34	1.1408	0.0716	34	1.2046	0.0804
		Organic Chemistry	23	1.1221	0.2851	18	1.2783	0.2301	18	1.3516	0.2258
		Inorganic Chemistry	30	0.9808	0.1826	24	1.0713	0.2382	22	1.0050	0.2015
		ICT	24	0.7598	0.2511	17	0.9636	0.0950	17	0.9823	0.1029
		Traditional	62	0.9618	0.1203	53	1.0795	0.0432	49	1.0902	0.0526
Subsequent	Euro-direct	Electricity	90	1.0428	0.0413	74	1.1467	0.0613	71	1.1381	0.0669
		Organic Chemistry	31	1.1272	0.1629	24	1.0488	0.0306	24	1.0605	0.0347
		Inorganic Chemistry	51	0.9489	0.0890	40	1.0498	0.1001	39	1.0299	0.0989
		ICT	48	1.0974	0.0613	36	1.1568	0.0900	35	1.1182	0.0921
		Traditional	144	1.0743	0.0588	118	1.1797	0.0635	111	1.2051	0.0759
Subsequent	PCT-IP	Electricity	106	0.9892	0.0457	90	1.0659	0.0440	86	1.0680	0.0464
		Organic Chemistry	77	1.0282	0.0340	70	1.0903	0.0444	67	1.1521	0.0429
		Inorganic Chemistry	81	0.9356	0.0947	68	0.9524	0.1072	63	0.9761	0.1191
		ICT	51	0.9881	0.0341	40	0.9849	0.0406	38	0.9962	0.0445
		Traditional	177	1.0047	0.0545	154	1.0558	0.0554	147	1.0858	0.0596

Table 56: Forecasts for EPO filings at the EPO – Random group, broken down by mega cluster

Taken together, **Table 55** and **Table 56** suggest that first filings at the EPO may grow particularly from Electricity and ICT. Subsequent filings seem to be steady in all areas, at least when Euro-direct are taken together with PCT-IP.

11.2 Results broken down by both mega cluster and residence bloc

The data of the Random group were also analysed with a simultaneous breakdown by mega cluster and residence bloc. The results are shown in **Table 57**.

Random group (including critical codes)
Breakdown by mega cluster and residence bloc ("Other" incorporated into EP)
Q-indices
First, Subsequent, Euro-direct and PCT-IP filings combined

Filing type	Filing route	mega cluster	Res. bloc	Year								
				2014			2015			2016		
				Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
First+Subsequent	Euro-direct+PCT-IP	Electricity	EP/OT	70	1.0440	0.0275	62	1.1167	0.0299	56	1.1482	0.0363
			JP	25	0.9260	0.0506	25	0.9719	0.0533	25	0.9766	0.0550
			US	16	0.9564	0.1592	12	0.8656	0.1425	11	0.8860	0.1379
First+Subsequent	Euro-direct+PCT-IP	Organic Chemistry	EP/OT	44	1.0093	0.0480	39	1.1303	0.0733	37	1.1728	0.0700
			JP	20	1.1445	0.0725	19	1.2163	0.0654	19	1.2538	0.0649
			US	12	1.1260	0.1077	12	1.2429	0.0923	11	1.3647	0.1114
First+Subsequent	Euro-direct+PCT-IP	Inorganic Chemistry	EP/OT	38	0.8795	0.1496	34	0.9136	0.1766	30	0.9303	0.1884
			JP	25	1.0065	0.0517	23	1.1131	0.0513	23	1.1486	0.0618
			US	15	0.9658	0.0953	12	1.0992	0.0657	10	1.1405	0.0874
First+Subsequent	Euro-direct+PCT-IP	ICT	EP/OT	37	1.0218	0.0412	31	1.0491	0.0587	28	1.0761	0.0680
			JP	13	0.9128	0.0671	12	0.9046	0.1017	12	0.8764	0.1353
			US	13	1.1699	0.0916	9	1.1427	0.1265	9	1.1052	0.1324
First+Subsequent	Euro-direct+PCT-IP	Traditional	EP/OT	139	1.0231	0.0408	122	1.1194	0.0446	110	1.1410	0.0488
			JP	46	1.0660	0.0372	42	1.1428	0.0626	42	1.1724	0.0787
			US	22	0.9785	0.0875	19	1.1513	0.1145	15	1.2685	0.1256

Table 57: Forecasts for EPO filings at the EPO – Random group, broken down by residence bloc and mega cluster

Strong growth is seen from the US for all mega clusters except Electricity. Europe is steady except perhaps for Inorganic Chemistry, and Japan is a bit weak on Electricity and ICT.

11.3 Forecasts for Euro-PCT-RP applications broken down by mega cluster

Growth rate estimates for Euro-PCT-RP applications were also estimated after breaking down by mega cluster, but combining filing types and first filings with subsequent filings. The results of this analysis are shown in **Table 58**.

Random group (including critical codes)
Breakdown by EPO mega cluster
Q-indices

S.E. indicates standard error of logarithm

			Year								
Patent office	Filing route	Cluster	2014			2015			2016		
			Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
EPO	Euro-PCT-RP	Electricity	111	1.1060	0.0674	96	1.2024	0.0867	90	1.2519	0.0996
		Organic Chemistry	90	0.9477	0.0418	76	0.9956	0.0773	70	1.0654	0.0723
		Inorganic Chemistry	88	1.0358	0.0615	75	1.0918	0.0692	72	1.1062	0.0759
		ICT	53	1.0656	0.0406	43	1.1078	0.0597	41	1.1000	0.0657
		Traditional	197	1.0767	0.0423	168	1.0923	0.0642	162	1.1433	0.0764

Table 58: Forecasts for Euro-PCT-RP applications – Random group (broken down by mega cluster)

For all time frames under review, growth in the Electricity cluster is anticipated to be the strongest, with the Organic Chemistry cluster being the weakest.

12 Annex V: Forecasts for applications at other patent offices

12.1 Worldwide first filings

Intentions regarding worldwide future patent filings were obtained from question (j) in **Part B** of the questionnaire (**Annex I**). As was attempted for the first time two years ago, an estimate of total worldwide first filings is again made in this report, based on the worldwide first filings growth rate estimates obtained from the respondents. The sample that was employed in this survey, while representative of EPO applicants, does not match all the applicants that apply at the various other national and regional offices, because they include some entities that do not apply to the EPO. Care should thus be taken when interpreting these numbers. What is shown here is essentially the attitude of EPO applicants towards their worldwide first filing expectations.

"2013 Actual filings" that are used as base year data for the projections are based on information from WIPO that appeared in December 2014.¹⁶ The definition that was chosen for first patent filings is a proxy equivalent to the one that is used in the IP5 Statistics Report¹⁷. An assumption is made that the domestic national filings reported from each patent office are equivalent to first filings. In order to estimate numbers of first filings from EPC states, domestic national filings from the national offices of the 38 EPC contracting states are summed and added to the numbers of Euro-direct first filings at the EPO coming from residents. Some simplifying assumptions were applied to calculate the 2013 base year counts from this source, so that numbers that will appear in the next published version of the IP5 Statistics Report may vary slightly from these numbers.

Table 59 shows the results without further breakdown, whereas **Table 60** shows the results broken down by residence bloc. Filings growth from 2013 to 2014 cannot be checked because returns from the patent offices for 2014 have not been collected and published by the WIPO yet.

As was the case last year, estimates based on a residence bloc breakdown are more optimistic than estimates without breakdown. Based on the residence bloc breakdown estimate, worldwide filings are expected to grow at +3.9% in 2014, +7.2% in 2015, and +13.8% in 2016, each time vs. 2013. Differences in growth expectations can be observed between residence blocs, with the US and Others (including China and Korea) residence blocs again growing most dynamically, as was the case last year.

¹⁶ See <http://www.wipo.int/ipstats/en/wipi/>. The data are extracted from "Table A47: Patent applications by patent office and origin, 2013". Residence bloc breakdowns are augmented by exchanges between patent offices.

¹⁷ See Fig. 3.4 in the IP5 Statistics Report 2013 edition, at www.fiveipoffices.org/stats.html

The biggest source of worldwide first filings growth is China (**702 245** in 2013, +32% vs. **533 245** in 2012). This cannot be expected to be captured by our estimate for the Others bloc, because there are no useful survey responses from China.

Random group (including critical codes)
No subsidiary breakdown
Q-Indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

		Year												
		2013	2014				2015				2016			
Filing type	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings
Worldwide Total First Filings	Total	1 600 541	440	0.9962	0.0142	1 594 397	380	1.0327	0.0133	1 652 913	349	1.0710	0.0145	1 714 162
	LCL					1 549 986				1 609 848				1 665 534
	UCL					1 638 809				1 695 977				1 762 790
Growth from 2013						-0.4%				3.3%				7.1%

Table 59: Forecast for worldwide first filings, no breakdown – Random group

Random group (including critical codes)
Breakdown by residence bloc
Q-indices

S.E. indicates standard error of logarithm
LCL/UCL indicates lower/upper 95% confidence limit
Deviation in % of forecast means (predicted filings - LCL)/predicted filings

		Year													
		2013		2014				2015				2016			
Filing type	Res. bloc	Actual filings	Cases 14	Q-index 14	S.E. 14	Predicted filings	Cases 15	Q-index 15	S.E. 15	Predicted filings	Cases 16	Q-index 16	S.E. 16	Predicted filings	
Worldwide Total First Filings	EP	134 105	285	0.9722	0.0184	130 378	242	1.0236	0.0178	137 273	219	1.0572	0.0191	141 776	
	JP	252 391	77	1.0295	0.0120	259 827	69	1.0582	0.0169	267 077	69	1.0763	0.0229	271 656	
	OT	949 122	12	1.0497	0.0494	996 332	8	1.0929	0.0537	1 037 273	7	1.1730	0.0718	1 113 346	
	US	264 923	66	1.0460	0.0424	277 113	61	1.0344	0.0339	274 038	54	1.1114	0.0319	294 431	
	Total	1 600 541	440			1 663 650	380			1 715 662	349			1 821 210	
	LCL					1 563 910				1 604 275				1 662 395	
	UCL					1 763 391				1 827 050				1 980 025	
Growth from 2013						3.9%				7.2%				13.8%	

Table 60: Forecast for worldwide first filings, broken down by residence bloc – Random group

Figure 9 shows estimated one-year worldwide first filings growth, along with 95% confidence intervals based on the surveys, in comparison with actually observed growth. Historically, despite not being the primary aim of this survey, the forecasts of total worldwide first filings growth have performed quite well when measured against observed growth. However, the moderate growth in worldwide filings predicted by this survey from 2011 onwards has been contradicted by strong observed growth in 2012 and 2013.¹⁸ This may indicate that the recent stronger worldwide first filings growth may have mainly been due to applications that did not involve applicants to the EPO.

¹⁸ Further investigations about estimating worldwide first filings using the EPO patent filings survey data can be found in Dannegger, F. and Hingley, P., "Predictive accuracy of survey-based forecasts for numbers of filings at the European Patent Office", World Patent Information (2013), 35:187-200.

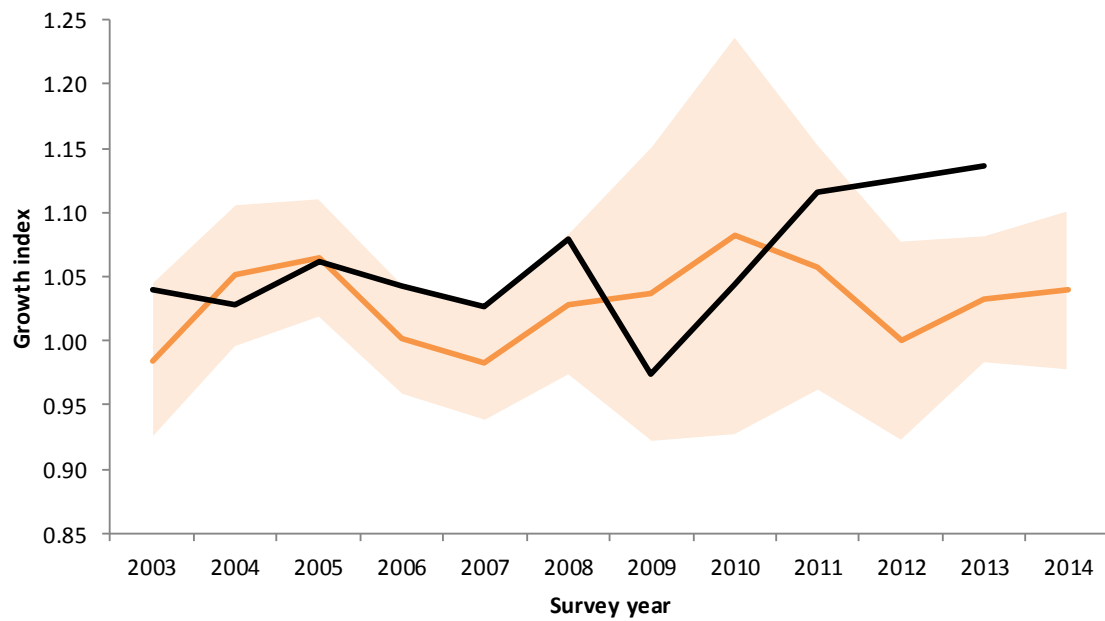


Figure 9: Comparison of forecasts for one-year worldwide first filings growth since 2003. Orange line indicates forecast, orange bands the corresponding confidence intervals. Black line indicates observed true growth.

12.2 Patent filings at specific national offices

Intentions regarding future patent filings at specific national offices were obtained from questions (c) to (h) and (k) to (o) in **Part B** of the questionnaire (**Annex I**).

Estimated growth rates for national applications by country, based on the Random group, are presented in **Table 61** and **Table 62**. The tables are limited to calculated growth rates with standard errors.

The filing intentions at national offices of the companies that applied at the EPO in 2013 vary considerably from country to country. But in many cases, the 95% confidence limits for the growth indices (obtained via a normal approximation as the point estimate of growth $\pm 1.96 \times$ standard error) for 2014 are not significantly different from 1 (no change). China was expected to have the highest significant national first filings growth in 2014. Over the three-year horizon of this survey, China is anticipated to experience 55% first filings growth, although this information was only obtained for non-resident applicants in China in this survey. **Table 62** suggests a strong contribution to first filings growth in China from applicants residing in Japan.

Random group (including critical codes)
No breakdown
Q Indices

				Year								
Filings type	Filing route	Nation	Res. bloc	2014			2015			2016		
				Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
First	National	Germany (c)	Total	111	1.0209	0.0543	97	0.9831	0.0516	87	1.0192	0.0547
		United Kingdom (d)	Total	51	0.9551	0.0521	41	1.0843	0.0349	37	1.1444	0.0488
		Japan (e)	Total	92	0.9486	0.0492	84	0.9747	0.0589	83	0.9935	0.0640
		United States (f)	Total	169	0.9182	0.0525	143	0.9448	0.0480	135	0.9575	0.0526
		Republic of Korea (g)	Total	18	0.9472	0.1269	17	1.3283	0.1356	16	1.3137	0.1440
		China (h)	Total	52	1.2360	0.0709	48	1.3358	0.1173	44	1.5536	0.1706
		Other Countries (i)	Total	120	0.9104	0.0836	90	0.9900	0.1064	87	1.0114	0.1120
Subsequent	National	Germany (c)	Total	440	0.9962	0.0163	380	1.0327	0.0152	349	1.0710	0.0166
		United Kingdom (d)	Total	73	1.0465	0.1269	56	1.0918	0.1024	55	1.1759	0.0970
		Japan (e)	Total	43	1.1533	0.0546	34	1.2790	0.0838	33	1.4166	0.1293
		United States (f)	Total	130	1.0952	0.0463	116	1.1595	0.0487	113	1.1835	0.0514
		Republic of Korea (g)	Total	214	0.9735	0.0278	184	1.0236	0.0295	176	1.0778	0.0302
		China (h)	Total	102	0.9692	0.0594	86	1.0271	0.0588	83	1.0588	0.0593
		Other Countries (i)	Total	164	1.0817	0.0282	147	1.1514	0.0347	140	1.2002	0.0429

Table 61: Detailed forecasting results for national applications (excluding PCT), no breakdown – Random group

Random group (including critical codes)
Q Indices, Breakdown by residence bloc

Filings type	Filing route	Nation	Res. bloc	Year								
				2014			2015			2016		
				Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
First	National	Germany (c)	EP	94	0.9777	0.0522	86	0.9658	0.0551	78	0.9926	0.0555
			JP	1	1.0209 *	0.0543 *	0	0.9831 *	0.0516 *	0	1.0192 *	0.0547 *
			OT	1	1.0209 *	0.0543 *	1	0.9831 *	0.0516 *	0	1.0192 *	0.0547 *
			US	15	1.3661	0.2063	10	1.1527	0.0980	9	1.3334	0.0964
		United Kingdom (d)	EP	30	1.0208	0.0332	26	1.0889	0.0466	22	1.1635	0.0602
			JP	6	0.8252	0.1775	4	1.0843 *	0.0349 *	4	1.1444 *	0.0488 *
			OT	1	0.9551 *	0.0521 *	0	1.0843 *	0.0349 *	0	1.1444 *	0.0488 *
			US	14	0.9447	0.0742	11	1.0439	0.0529	11	1.0721	0.0730
		Japan (e)	EP	6	0.7595	0.0619	6	0.7644	0.0675	5	0.9935 *	0.0640 *
			JP	77	1.0309	0.0167	69	1.0624	0.0227	69	1.0793	0.0289
			OT	0	0.9486 *	0.0492 *	0	0.9747 *	0.0589 *	0	0.9935 *	0.0640 *
			US	9	0.7110	0.1414	9	0.9331	0.0791	9	0.9555	0.0904
		United States (f)	EP	81	0.8533	0.0741	66	0.9105	0.0671	63	0.9180	0.0744
			JP	26	1.0491	0.0669	24	1.0663	0.0778	24	1.0968	0.0862
			OT	5	0.9182 *	0.0525 *	4	0.9448 *	0.0480 *	3	0.9575 *	0.0526 *
			US	57	1.0207	0.1107	49	0.9696	0.0916	45	0.9852	0.0964
		Republic of Korea (g)	EP	5	0.9472 *	0.1269 *	4	1.3283 *	0.1356 *	4	1.3137 *	0.1440 *
			JP	4	0.9472 *	0.1269 *	4	1.3283 *	0.1356 *	4	1.3137 *	0.1440 *
			OT	2	0.9472 *	0.1269 *	2	1.3283 *	0.1356 *	2	1.3137 *	0.1440 *
			US	7	1.4220	0.2576	7	1.9586	0.3624	6	1.8908	0.4456
		China (h)	EP	20	1.1757	0.0751	21	1.2773	0.1126	20	1.4047	0.1497
			JP	14	1.5866	0.1643	12	1.6169	0.2777	12	1.7250	0.2962
			OT	2	1.2360 *	0.0709 *	1	1.3358 *	0.1173 *	0	1.5536 *	0.1706 *
			US	16	1.1781	0.1746	14	1.4249	0.3443	12	2.0666	0.4948
		Other Countries (i)	EP	83	0.8420	0.1050	61	0.9114	0.1332	58	0.9159	0.1358
			JP	11	1.0521	0.0598	10	1.1400	0.0714	10	1.1862	0.0832
			OT	4	0.9104 *	0.0836 *	2	0.9900 *	0.1064 *	2	1.0114 *	0.1120 *
			US	22	1.1125	0.1194	17	1.2185	0.1050	17	1.3058	0.1104
Subsequent	National	Germany (c)	EP	32	0.9722	0.0214	242	1.0236	0.0206	219	1.0572	0.0222
			JP	15	1.0295	0.0140	69	1.0582	0.0197	69	1.0763	0.0267
			OT	5	0.9962 *	0.0163 *	8	1.0929	0.0624	7	1.1730	0.0834
			US	21	1.0460	0.0493	61	1.0344	0.0394	54	1.1114	0.0371
		United Kingdom (d)	EP	19	0.7788	0.1537	23	0.9279	0.0802	23	1.0365	0.0803
			JP	7	1.3168	0.1294	12	1.1444	0.1224	12	1.1729	0.1294
			OT	3	1.0465 *	0.1269 *	5	1.0918 *	0.1024 *	5	1.1759 *	0.0970 *
			US	14	1.4400	0.2202	16	1.5148	0.2822	15	1.5998	0.3026
		Japan (e)	EP	51	1.0774	0.0552	15	1.2671	0.1180	14	1.4471	0.2003
			JP	47	1.3552	0.0632	5	1.2790 *	0.0838 *	5	1.4166 *	0.1293 *
			OT	3	1.1533 *	0.0546 *	3	1.2790 *	0.0838 *	3	1.4166 *	0.1293 *
			US	29	1.2010	0.0886	11	1.3411	0.1294	11	1.4391	0.1487
		United States (f)	EP	106	1.0563	0.0597	46	1.1153	0.0603	46	1.1322	0.0629
			JP	49	1.1400	0.0685	46	1.1802	0.0569	46	1.2144	0.0623
			OT	8	1.0667	0.1893	3	1.1595 *	0.0487 *	3	1.1835 *	0.0514 *
			US	51	1.1400	0.1408	21	1.2443	0.1834	18	1.2692	0.2002
		Republic of Korea (g)	EP	44	0.9192	0.0346	92	0.9926	0.0384	87	1.0703	0.0358
			JP	31	1.0646	0.0475	44	1.0952	0.0562	44	1.1033	0.0591
			OT	5	0.9735 *	0.0278 *	5	1.0236 *	0.0295 *	6	1.1525	0.0994
			US	22	1.0458	0.0757	43	1.0321	0.0796	39	1.0593	0.0974
		China (h)	EP	80	0.9373	0.0889	38	0.9704	0.0791	37	1.0310	0.0839
			JP	47	1.0005	0.1123	28	1.1377	0.1069	28	1.1548	0.1099
			OT	5	0.9692 *	0.0594 *	4	1.0271 *	0.0588 *	4	1.0588 *	0.0593 *
			US	32	1.0468	0.0599	16	1.1140	0.0909	14	1.0217	0.0906
		Other Countries (i)	EP	74	1.1069	0.0427	74	1.1757	0.0530	70	1.2482	0.0656
			JP	45	1.0667	0.0491	43	1.1037	0.0501	43	1.1030	0.0535
			OT	6	1.2282	0.0942	5	1.1514 *	0.0347 *	5	1.2002 *	0.0429 *
			US	33	1.0135	0.0584	25	1.1124	0.0580	22	1.1531	0.0695

Table 62: Detailed forecasting results for national applications (excluding PCT), broken down by residence bloc – Random group

Forecasts based on the Random group for PCT-NP applications at DPMA (German Patent Office), JPO, KIPO SIPO, and USPTO are displayed without further breakdown in **Table 63**, and with a residence bloc breakdown in **Table 64**. The tables are also limited to calculating growth indices in these cases.¹⁹

¹⁹ Counts for base year 2013 are also provided in some cases by WIPO as of December 2014 (similarly to worldwide first filings in Section 12.1 above). Forecasts in terms of absolute future levels of such filings are not given due to the possible lack of representativeness of the sample.

The following comments apply to **Table 64**. Growth up to 2016 is forecast to be most dynamic at DPMA (German Office), followed by SIPO, USPTO, JPO and KIPO (except to KIPO from EPC). The table suggests that the high growth at DPMA up to 2016 will mostly be from US and EPC-based applicants. From EPC, this is a higher apparent growth rate than for Euro-PCT-RP applications at the EPO up to 2016 that was shown in **Table 23**. Again it should be noted that these growth rate estimates apply only to the population from which the sample was selected, namely applicants to the EPO for Euro-direct and Euro-PCT-RP filings in 2013.

Random group (including critical codes)
No subsidiary breakdown
Q-indices

		Year								
		2014			2015			2016		
Patent Office	Filing route	Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
DPMA	PCT-NP	92	1.2480	0.1004	75	1.2310	0.0773	72	1.3189	0.0863
JPO	PCT-NP	225	1.0455	0.0291	199	1.0758	0.0355	192	1.0816	0.0398
KIPO	PCT-NP	202	0.9890	0.0585	179	0.9751	0.1147	173	0.9160	0.1724
SIPO	PCT-NP	260	1.0800	0.0288	228	1.1263	0.0357	217	1.1446	0.0419
USPTO	PCT-NP	297	1.0239	0.0260	259	1.0712	0.0319	249	1.0947	0.0352

Table 63: Detailed forecasting results for PCT applications entering the national phase, without further breakdown – Random group

Random group (including critical codes)
Breakdown by residence bloc
Q-indices

			Year								
			2014			2015			2016		
Patent Office	Filing route	Res. bloc	Cases 14	Q-index 14	S.E. 14	Cases 15	Q-index 15	S.E. 15	Cases 16	Q-index 16	S.E. 16
DPMA	PCT-NP	EP	44	1.2335	0.1183	36	1.3006	0.1197	36	1.3502	0.1265
		JP	20	1.5666	0.2883	19	1.1463	0.0844	19	1.1831	0.0931
		OT	3	1.0453	0.0658	3	1.0944	0.0908	3	1.1778	0.1135
		US	25	1.0035	0.1454	17	1.1251	0.0619	14	1.4802	0.2049
JPO	PCT-NP	EP	111	1.0597	0.0428	93	1.0755	0.0543	91	1.0692	0.0621
		JP	60	1.0884	0.0443	61	1.1061	0.0434	61	1.1266	0.0472
		OT	6	0.7617	0.3086	6	1.1223	0.1510	6	1.2172	0.1799
		US	48	0.9856	0.0531	39	1.0238	0.0714	34	1.0369	0.0832
KIPO	PCT-NP	EP	97	0.9434	0.0960	84	0.9023	0.1872	79	0.7917	0.2856
		JP	60	1.0240	0.0501	57	1.0416	0.0610	58	1.0476	0.0629
		OT	3	1.0731	0.0226	3	1.1855	0.0213	3	1.2816	0.0389
		US	42	1.0862	0.0518	35	1.1484	0.0548	33	1.2005	0.0698
SIPO	PCT-NP	EP	131	1.0309	0.0408	113	1.0495	0.0536	106	1.0559	0.0642
		JP	69	1.1727	0.0551	66	1.2183	0.0569	66	1.2390	0.0583
		OT	7	0.9095	0.1725	7	1.0030	0.1890	7	1.0671	0.2275
		US	53	1.1490	0.0723	42	1.3362	0.0870	38	1.3944	0.1026
USPTO	PCT-NP	EP	164	1.0122	0.0372	142	1.0287	0.0489	134	1.0549	0.0544
		JP	73	1.0763	0.0403	71	1.1259	0.0392	71	1.1317	0.0401
		OT	9	0.9287	0.1302	7	1.0952	0.1459	8	1.1325	0.1698
		US	51	1.0000	0.0695	39	1.1957	0.0564	36	1.2352	0.0612

Table 64: Detailed forecasting results for PCT applications entering the national phase, broken down by residence bloc – Random group

13 Annex VI: Respondents' profiles

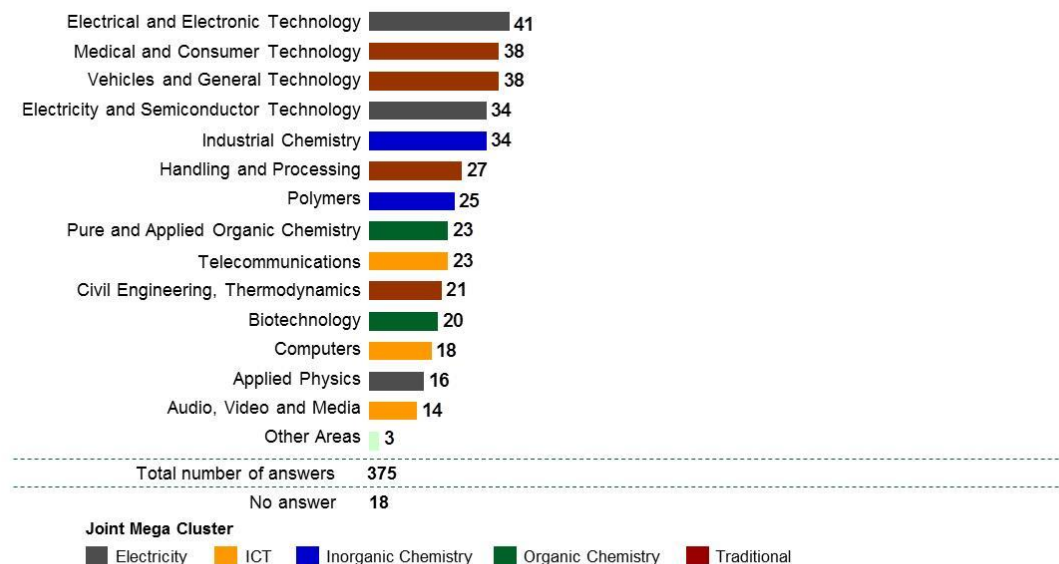
In **Section C** of the questionnaire, respondents were asked to indicate the profile of the company, including the number of persons employed, the joint clusters that best describe the applicant's business along with corresponding R&D and patenting activity, and whether the applicant is a small or medium-sized enterprise (SME). The results from these questions are analysed in this Annex.

Section 13.1 provides an overview of the sample composition in terms of EPO joint clusters and mega clusters. In **Sections 13.2 to 13.4**, distributions for numbers of employees per applicant are shown. **Section 13.5** then provides summary statistics of more extensive indicators for company size and economic activity in various breakdown scenarios.

13.1 EPO joint clusters & mega clusters

All applicants in the survey were asked to describe themselves in terms of membership of one or more of the EPO joint clusters (questionnaire **Part C**, question (d)). The following figures provide an overview of the sample composition in terms of joint clusters for the Biggest and Random groups. Also, a separate table is provided under the random group to see the spread of the US boost sample over the 14 clusters.

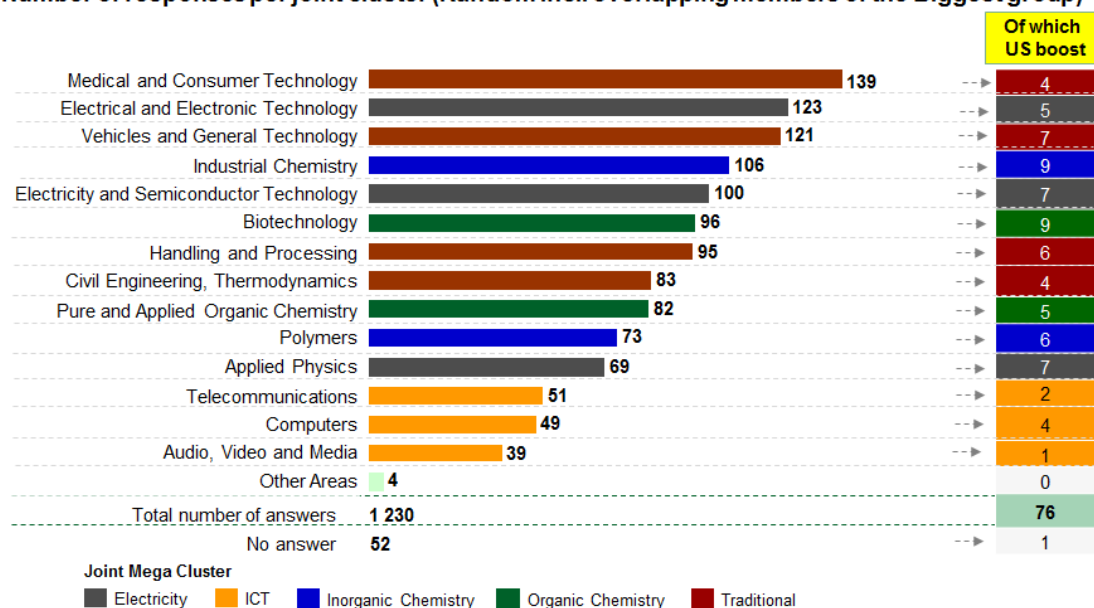
Number of responses per joint cluster (Biggest incl. overlapping members of the Random group)



Base: n = 155, all respondents of the Biggest group incl. overlapping members of the Random group, multiple answers possible, absolute numbers of responses (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by EPO)

Figure 10: Number of responses per joint cluster (Biggest group including overlapping members of the Random group)

Number of responses per joint cluster (Random incl. overlapping members of the Biggest group)



Base: n = 638, all respondents of the Random group incl. US boost and incl. overlapping members of the Biggest group, multiple answers possible, absolute numbers of responses (unweighted, including ex-post cluster allocation, excluding deliberately selected addresses by EPO)

Base: n = 29, all respondents of the US Boost

Figure 11: Number of responses per joint cluster (Random group including overlapping members of the Biggest group)

MC*	Joint Cluster	Total	Bloc			
			EP	US	JP	OT
Ele	1. Electricity and Semiconductor Tech.	100	54	17	27	2
	2. Electrical and Electronic Technology	123	65	22	33	3
	3. Applied Physics	69	42	14	11	2
ICT	4. Audio, Video and Media	39	17	9	11	2
	5. Computers	49	27	14	8	0
	6. Telecommunications	51	25	6	19	1
InoC	7. Industrial Chemistry	106	52	20	30	4
	8. Polymers	73	37	14	21	1
OrC	9. Biotechnology	96	52	25	17	2
	10. Pure and Applied Organic Chemistry	82	45	11	24	2
Trad	11. Civil Engineering, Thermodynamics	83	60	14	8	1
	12. Handling and Processing	95	63	12	20	0
	13. Medical and Consumer Technology	139	83	23	31	2
	14. Vehicles and General Technology	121	66	19	33	3
	Other areas	4	2	0	2	0
	No answer	52	32	7	8	5

* Mega Clusters: Ele = Electricity ICT = ICT InoC = Inorganic Chemistry
OrC = Organic Chemistry Trad = Traditional

Base: n = 638/397/101/120/20, corresponding to total/EP/US/JP/OT, all respondents of the Random group, including overlapping members of the Biggest group, absolute numbers of respondents (unweighted, including ex-post cluster allocation)

Table 65: Number of responses per joint cluster (Random group including overlapping members of the Biggest group), broken down by bloc

Figure 12 and **Figure 13** show the distribution of responses in the Biggest and Random groups combined with the number of joint clusters chosen. In terms of the five mega clusters (for the amalgamation of joint clusters into joint mega clusters see **Annex III, Section 10.7**), the average number of mega clusters per respondent is 1.79 for the Biggest group respondents (1.95 in 2013), and 1.56 for the Random group respondents (1.58 in 2013).

Number of joint clusters per respondent (Biggest incl. overlapping members of the Random group)

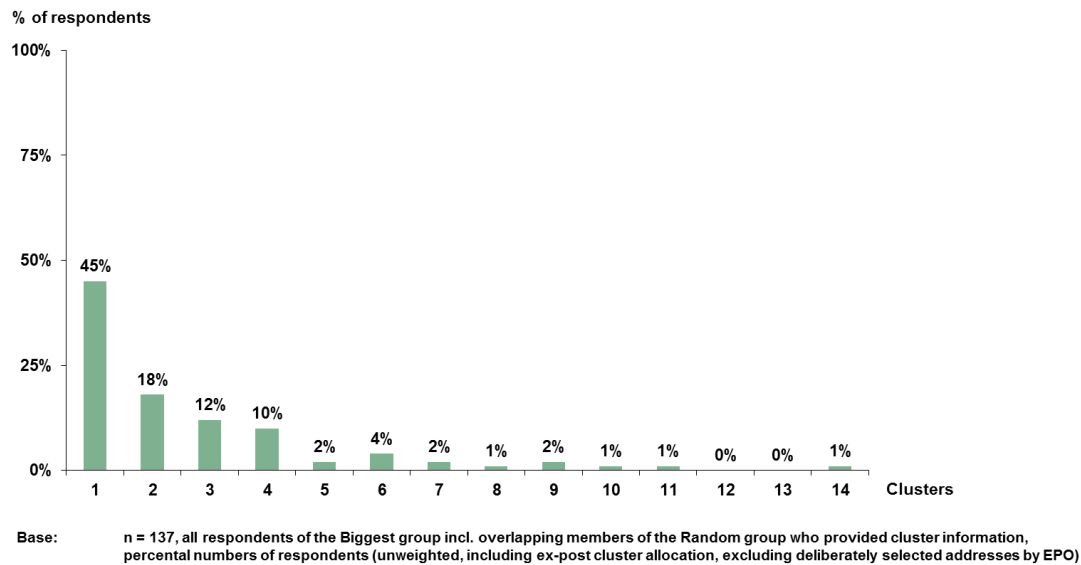


Figure 12: Number of joint clusters selected per respondent (Biggest group including overlapping members of the Random group)

Number of joint clusters per respondent (Random incl. overlapping members of the Biggest group)

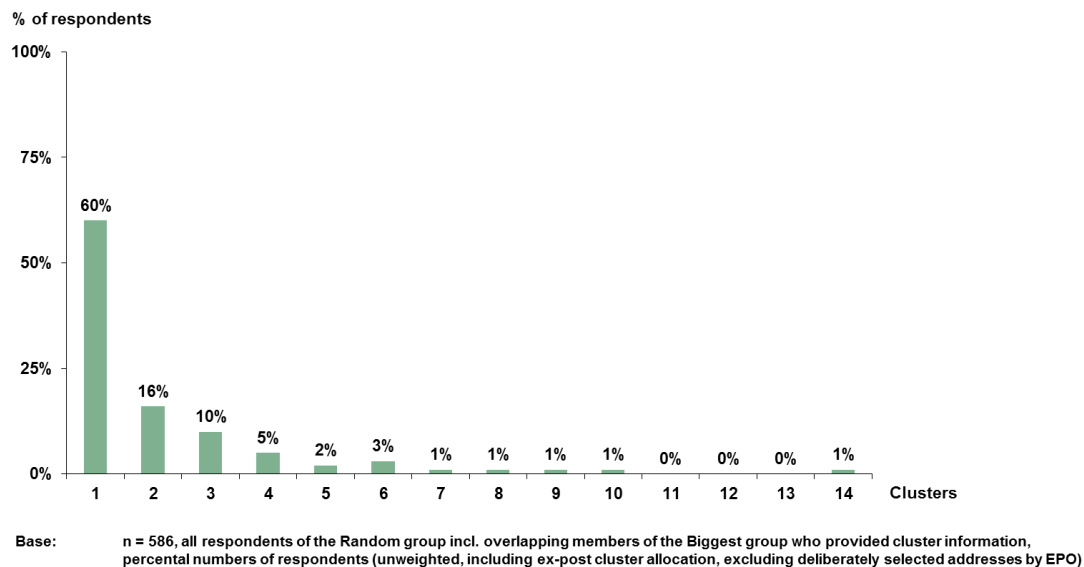


Figure 13: Number of joint clusters selected per respondent (Random group including overlapping members of the Biggest group)

Table 66 and **Table 67** below indicate which combinations of joint clusters and mega clusters are cited most frequently. In each case, there is a two-way matrix describing the cluster combinations selected by the interviewees of the Biggest group (**Table 66**), and Random group (**Table 67**). While the upper right hand triangle of the tables shows absolute numbers of respondents that indicate the respective combination, the lower left hand triangle gives a normalised mutual information statistic (NMI) that indicates to what degree each pair of clusters overlaps. The NMI involves the numbers of respondents that indicated both clusters compared to the total numbers of respondents that indicated either one or the other cluster. The NMI is calculated as

$$NMI_{ij} = \frac{[ab]}{\sqrt{(a*b)}},$$

where a is the number of occurrences of cluster i , b is the number of occurrences of cluster j , and $[ab]$ is the number of occurrences of both clusters i and j .

Both tables indicate pairwise combinations, but this picture is not absolutely complete, as **Figure 12** and **Figure 13** show that respondents sometimes indicated activities in more than two joint clusters.

Basically, the tables show relatively high degrees of overlap between joint clusters that are grouped together in one and the same mega cluster. For both Biggest and Random groups, this applies to joint cluster combinations within the mega clusters Electricity, ICT, Inorganic Chemistry, and Organic Chemistry, though it is not so prevalent within the mega cluster Traditional which is composed of more diverse joint clusters. Nevertheless, this outcome gives support to the mega cluster groupings as they are used for this analysis.

In addition, there are also higher degrees of overlap between some single joint clusters that are allocated to different mega clusters. So the ICT clusters Computers and Telecommunications overlap with Electricity clusters, the Organic Chemistry cluster Pure and Applied Organic Chemistry overlaps with Inorganic Chemistry clusters, and the Traditional cluster Medical and Consumer Technology overlaps with Organic Chemistry clusters. Also, in the Biggest group, the Traditional clusters Civil Engineering and Handling and Processing overlap with Electricity clusters.

In general and as expected, overlapping scores turn out to be lower in the Random group than in the Biggest group, as smaller applicants more often indicate activity in one joint cluster only. But it should be noted that no weighting has been applied to the Random group in **Table 67** so as to make sure it better emulates the distributions from which to draw conclusions on the applicant population as a whole.

		Electricity			ICT			Inorganic Chemistry		Organic Chemistry		Traditional			
MC*	Joint Cluster	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Ele	1. Electricity and Semiconductor Tech.	34	21	11	8	13	11	10	10	6	8	9	13	12	12
	2. Electrical and Electronic Technology	0.56	41	12	10	13	14	8	9	6	5	12	13	14	16
	3. Applied Physics	0.47	0.47	16	4	4	5	9	8	7	6	9	12	10	9
ICT	4. Audio, Video and Media	0.37	0.42	0.27	14	7	11	4	2	3	3	3	5	6	3
	5. Computers	0.53	0.48	0.24	0.44	18	12	5	4	4	4	6	6	8	4
	6. Telecommunications	0.39	0.46	0.26	0.61	0.59	23	6	4	3	4	4	8	8	6
InoC	7. Industrial Chemistry	0.29	0.21	0.39	0.18	0.20	0.21	34	17	9	14	7	10	11	5
	8. Polymers	0.34	0.28	0.40	0.11	0.19	0.17	0.58	25	8	12	6	9	11	8
OrC	9. Biotechnology	0.23	0.21	0.39	0.18	0.21	0.14	0.35	0.36	20	10	6	9	13	4
	10. Pure and Applied Organic Chemistry	0.29	0.16	0.31	0.17	0.20	0.17	0.50	0.50	0.47	23	4	7	11	3
Trad	11. Civil Engineering, Thermodynamics	0.34	0.41	0.49	0.17	0.31	0.18	0.26	0.26	0.29	0.18	21	12	10	11
	12. Handling and Processing	0.43	0.39	0.58	0.26	0.27	0.32	0.33	0.35	0.39	0.28	0.50	27	14	11
	13. Medical and Consumer Technology	0.33	0.35	0.41	0.26	0.31	0.27	0.31	0.36	0.47	0.37	0.35	0.44	38	8
	14. Vehicles and General Technology	0.33	0.41	0.36	0.13	0.15	0.20	0.14	0.26	0.15	0.10	0.39	0.34	0.21	38
Normalised Mutual Information (NMI)															

Absolute numbers of respondents
(unweighted, without "other" mentions)

* Mega Clusters: Ele = Electricity ICT = ICT InoC = Inorganic Chemistry OrC = Organic Chemistry Trad = Traditional

Base: n = 137, all respondents of the Biggest group, incl. overlapping members of the Random group, who provided cluster information (including ex-post cluster allocation, excluding addresses specifically selected by the EPO)

Table 66: Number of responses and overlap per joint cluster combination (two-way matrix, Biggest group including overlapping members of the Random group)

		Electricity			ICT			Inorganic Chemistry		Organic Chemistry		Traditional			
MC*	Joint Cluster	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Ele	1. Electricity and Semiconductor Tech.	100	51	30	18	26	24	30	26	24	23	18	27	27	23
	2. Electrical and Electronic Technology	0.46	123	42	20	27	30	27	29	26	21	29	30	29	32
	3. Applied Physics	0.36	0.46	69	14	18	15	24	20	29	24	20	23	28	17
ICT	4. Audio, Video and Media	0.29	0.29	0.27	39	12	19	11	10	10	8	8	11	13	9
	5. Computers	0.37	0.35	0.31	0.27	49	17	15	13	16	13	13	13	16	10
	6. Telecommunications	0.34	0.38	0.25	0.43	0.34	51	16	12	13	12	9	16	19	13
InoC	7. Industrial Chemistry	0.29	0.24	0.28	0.17	0.21	0.22	106	42	30	35	17	29	22	15
	8. Polymers	0.30	0.31	0.28	0.19	0.22	0.20	0.48	73	27	33	16	26	27	16
OrC	9. Biotechnology	0.24	0.24	0.36	0.16	0.23	0.19	0.30	0.32	96	43	14	21	43	9
	10. Pure and Applied Organic Chemistry	0.25	0.21	0.32	0.14	0.21	0.19	0.38	0.43	0.48	82	10	19	37	9
Trad	11. Civil Engineering, Thermodynamics	0.20	0.29	0.26	0.14	0.20	0.14	0.18	0.21	0.16	0.12	83	24	18	23
	12. Handling and Processing	0.28	0.28	0.28	0.18	0.19	0.23	0.29	0.31	0.22	0.22	0.27	95	25	21
	13. Medical and Consumer Technology	0.23	0.22	0.29	0.18	0.19	0.23	0.18	0.27	0.37	0.35	0.17	0.22	139	16
	14. Vehicles and General Technology	0.21	0.26	0.19	0.13	0.13	0.17	0.13	0.17	0.08	0.09	0.23	0.20	0.12	121
Normalised Mutual Information (NMI)															

Absolute numbers of respondents
(unweighted, without "other" mentions)

* Mega Clusters: Ele = Electricity ICT = ICT InoC = Inorganic Chemistry OrC = Organic Chemistry Trad = Traditional

Base: n = 586, all respondents of the Random group, incl. overlapping members of the Biggest group, who provided cluster information (including ex-post cluster allocation, excluding addresses specifically selected by the EPO)

Table 67: Number of responses and overlap per joint cluster combination (two-way matrix, Random group including overlapping members of the Biggest group)

13.2 Respondents from the Biggest group

Figure 14 shows that 65% of the responding applicants have 10 000 employees or more. Broken down by residence bloc, the distribution for number of employees in the Biggest group is shown in **Table 68**.

Number of employees

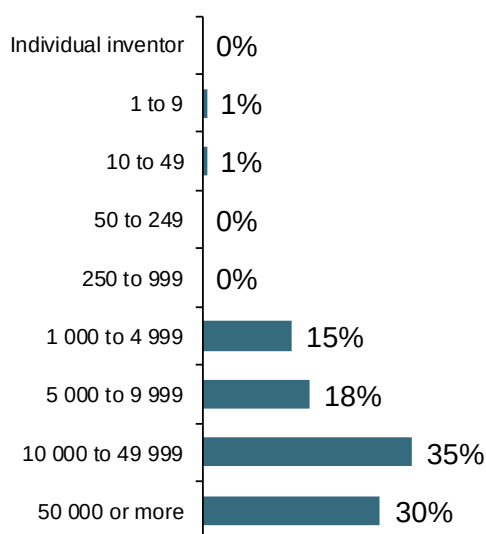


Figure 14: Biggest group by number of employees

Biggest group
By number of employees
Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Grand total	No. of cases
Total	0%	1%	1%	0%	0%	15%	18%	35%	30%	100%	133
EP	0%	1%	1%	0%	0%	11%	20%	38%	28%	100%	74
JP	0%	0%	0%	0%	0%	27%	20%	34%	20%	100%	41
OT	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%	1
US	0%	0%	0%	0%	0%	6%	6%	24%	65%	100%	17

Table 68: Biggest group by number of employees and residence bloc

13.3 Respondents from the Random group

Figure 15 shows that 29% of Random group applicants have a maximum of 249 employees and 91% are private enterprises.²⁰ Broken down by residence bloc, the distribution for number of employees in the Random group is shown in **Table 69**.

Number of employees

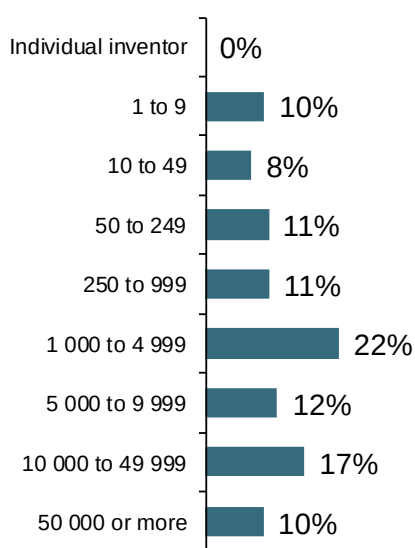


Figure 15: Random group by number of employees

Broken down by residence bloc, distributions of number of employees are shown in the following table:

²⁰ Considering sampling errors of surveys, the summary percentages from the unweighted Random group for a maximum of 249 employees are in agreement with those reported for the previous survey. For the weighted data in the following Section 13.4, the proportion of enterprises with a maximum of 249 employees is 68% this year, compared to 61% in previous survey.

Random group
By number of employees
Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Grand total	No. of cases
Total	0%	10%	8%	11%	11%	22%	12%	17%	10%	100%	536
EP	0%	11%	10%	13%	13%	21%	10%	15%	9%	100%	326
JP	0%	1%	0%	6%	10%	34%	18%	24%	7%	100%	115
OT	0%	13%	20%	7%	0%	13%	33%	13%	0%	100%	15
US	0%	18%	10%	10%	6%	14%	10%	14%	19%	100%	80

Table 69: Random group, broken down by persons employed and residence bloc

13.4 Estimated composition of the population of EPO applicants

Although the Random group is primarily designed to be a random sample drawn from the pool of applications, it can also be used to make inferences about the properties and composition of the population of EPO applicants, if a proper weighting scheme is used.

The weighting to estimate applicant population characteristics uses the extended structural weight approach described in the *Future Filings Survey 2010 report*²¹. These weights are based on the denominator of the Poisson weight and are then adjusted to match the sample to the population by bloc and size classes. The adjustment is achieved by using the sample response rate by size class per bloc of residence (SRSS).

Table 70 shows bloc-wise SRSS values based on filing count class. Filing count classes are defined by a range of filing counts from lower bound ("lb") to upper bound ("ub"). This year, as in the previous four years, bloc-specific SRSS values were used since there are pronounced differences in sample response rates between blocs.

class	lb	ub	EP	JP	OT	US	TOTAL
1	1	1	0.22	0.33	0.05	0.09	0.16
2	2	2	0.32	0.25	0.08	0.07	0.20
3	3	3	0.27	0.40	0.06	0.13	0.21
4	4	5	0.35	0.44	0.04	0.06	0.22
5	6	9	0.30	0.34	0.04	0.07	0.20
6	10	19	0.37	0.40	0.04	0.11	0.25
7	20	39	0.27	0.45	0.26	0.11	0.26
8	40	9999999	0.42	0.49	0.08	0.28	0.38
Total			0.30	0.42	0.07	0.11	0.23

Table 70: Bloc-wise SRSS values of the Random sample by filing count class

²¹ Cf. Future Filings Survey 2010 report, Section 11.4, p. 77.

The results in **Table 70** are consistent with **Table 48**, which also shows that the highest response rates are found from applicants residing in Japan and the EPC, with the US showing an improvement since the previous survey with respect to the smallest and biggest filers.

Extended structural weights are applied for estimating distributions for the whole applicant population. Some statistics resulting from the respondents' answers are given in **Table 72**, **Table 74**, and **Table 76** further below.

Regarding the number of employees, the weighted estimated distributions in the population are shown in **Table 71** and in the subsequent histograms.

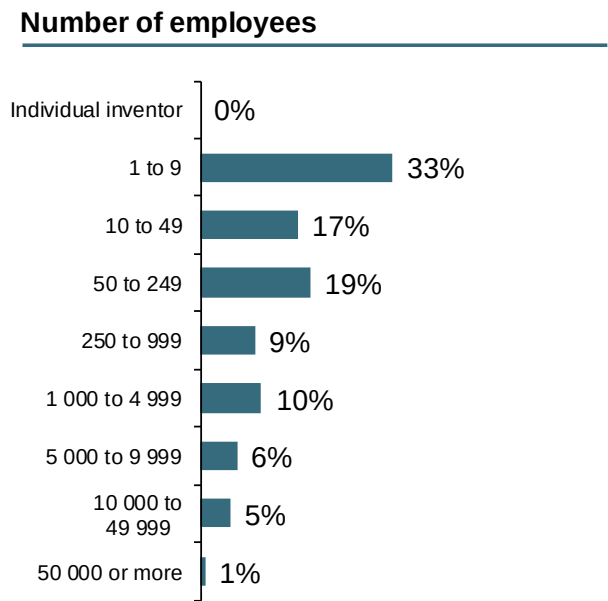


Figure 16: Estimated distribution of the EPO applicant population by number of employees

The inference for the whole applicant population is that 68% of applicants have a maximum of 249 employees and 92% are private enterprises. The distribution in **Figure 16** shows a strong contrast to the data for the Biggest group in **Figure 14**.

Separated by residence bloc, the estimated composition of the applicant distributions can be summarised as follows:

Number of employees

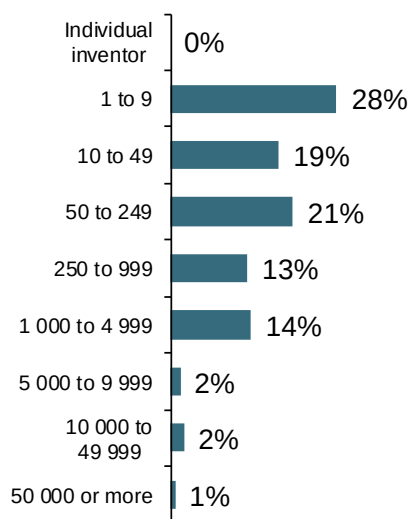


Figure 17: Estimated distribution of the EPO applicant population in the EPC (EP) residence bloc by number of employees

Number of employees

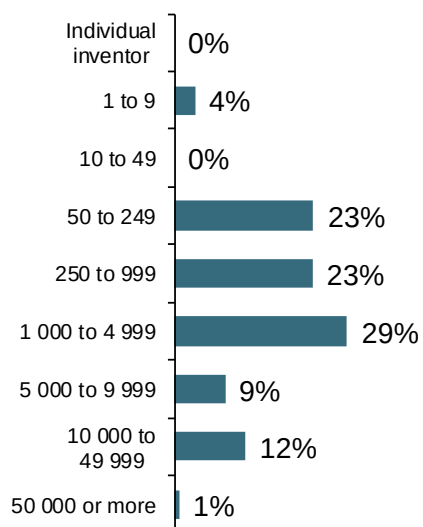


Figure 18: Estimated distribution of the EPO applicant population in the Japan (JP) residence bloc by number of employees

Number of employees

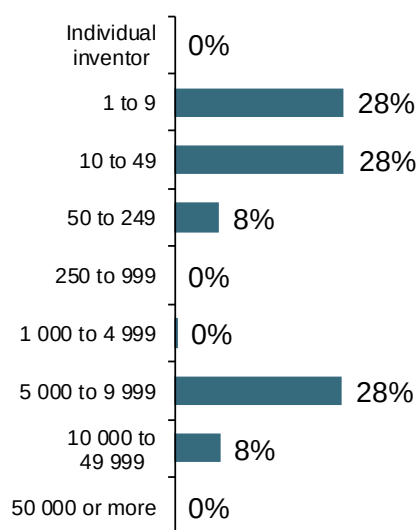


Figure 19: Estimated distribution of the EPO applicant population in the Others (OT) residence bloc by number of employees

Number of employees

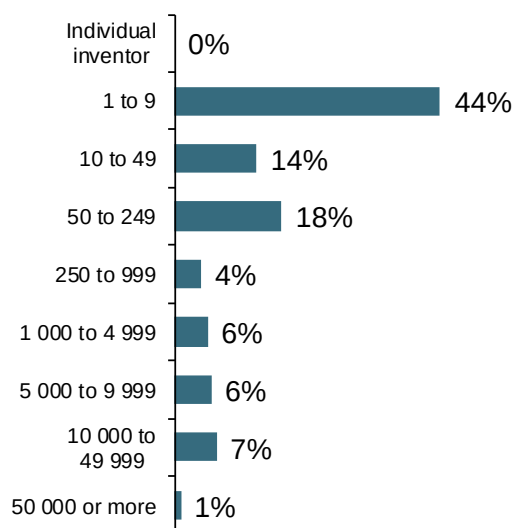


Figure 20: Estimated distribution of the EPO applicant population in the US residence bloc by number of employees

Notable differences can be inferred concerning company sizes of different residence blocs. Considering the proportions of applicants with fewer than 250 employees, this is 68% of applicants from the EP bloc (which is the same as for all applicants in **Figure 16**), 76% from the US bloc, and 64% from the OT bloc, while the industrial concentration in Japan means that only 27% have fewer than 250 employees. But "SMEness" depends on more criteria than number of employees, and some further analysis of SME proportions appears in the next section.

Broken down by residence bloc, the inferred distributions of numbers of employees are shown in the following table:

Estimation incorporating structural weights
By number of employees
Total and breakdown by residence bloc

Residence bloc	Individual inventor	1 to 9	10 to 49	50 to 249	250 to 999	1 000 to 4 999	5 000 to 9 999	10 000 to 49 999	50 000 or more	Total
Total	0.0%	32.7%	16.5%	18.7%	9.3%	10.4%	6.3%	5.2%	0.9%	100%
EP	0.0%	28.4%	18.5%	21.0%	13.2%	13.8%	1.8%	2.5%	0.9%	100%
JP	0.0%	3.5%	0.0%	23.3%	23.1%	28.9%	8.5%	11.8%	0.9%	100%
OT	0.0%	28.2%	28.3%	7.5%	0.0%	0.5%	27.9%	7.7%	0.0%	100%
US	0.0%	44.3%	13.6%	17.8%	4.5%	5.6%	6.1%	7.1%	1.0%	100%

Table 71: Estimated distribution of EPO applicants by number of employees and residence bloc

13.5 Analysis of economic attributes

In **Part C** of the questionnaire, applicants were asked to provide more detailed information about their R&D budgets; inventions; numbers of staff and staff involved in making inventions; turnover and numbers of first patent filings throughout the world (with splits by joint clusters for R&D budgets and first filings). All responses were given with respect to activities in 2013.

For the questions on R&D budget and turnover, currencies had to be specified by the respondents. Therefore, before analysing Part C, the numbers given for R&D budget and turnover were recalculated to euros. Interbank exchange rates current as of 20th September, 2014 were applied to the responses to those questions.

The tables in this section contain three groups of attributes. The first group contains (from left to right): number of employees, the proportion of applicants which are SMEs²², and based on this, the proportion of applications that are made by SMEs and the proportion of staff involved in making inventions. The second group contains the approximate R&D budget, the approximate proportion of R&D expenditure related to activities that may result in first filings, the number of worldwide first patent filings, and the total number of inventions considered for patent applications. The third and final group contains ratio type characteristics, namely: first patent filings by number of inventions, total turnover by first patent filing, and R&D budget by first patent filing.

Summary results for the attributes from the Biggest group and the Random group are shown in **Table 72**. Bearing in mind the asymmetry of some distributions among the population, particularly for variables that measure quantities related to the size of applicant companies, and also on the grounds of considering the robustness of the estimates, for the Random group it is considered more appropriate to compare the weighted medians rather than the weighted means. In order to convey the variability associated with the reported measures, 95% normal approximation confidence intervals for the weighted mean are given when reporting results for the Random group employing structural weights.²³ Also, for tables based on the Random group and employing structural weights, the "Weighted N" reported is the sum of standardised structural weights²⁴.

²² SME determination was made based on the applicant declaration as given by the answer to C(i). SME status was set to NA if the respondent indicated that he is answering on behalf of a smaller or larger entity. For numbers of patent applications, these were the counts of Euro-direct + Euro-PCT-RP filings in 2013 from the EPO database, as were also used for calculating Poisson weights.

²³ Calculation of confidence intervals is based on a normal approximation. Thus the confidence interval is calculated as the weighted mean ± 1.96 standard error of the weighted mean. For the binary variable "Proportion of SMEs among applicants", a dummy coding (0="not an SME", 1="SME") was used. For further details, see Cochran, W.G., "Sampling Techniques", Wiley, 1977, Chapter 3.

²⁴ Standardisation is performed so that the sum of standardised structural weights equals the unweighted sample size of the Random group. Since there are varying partial response rates to the questions, the sum of standardised structural weights still is not usually identical to the unweighted sample size.

Detailed tables are shown in unweighted and weighted versions for the Random group in **Table 73** to **Table 76**. These tables contain breakdowns by residence bloc and mega cluster.

For the analyses broken down by residence bloc, **Table 73** contains the unweighted analyses for the Random group, and **Table 74** contains the weighted results of the Random group. For the analyses itemised by mega cluster, **Table 75** contains the unweighted analyses for the Random group, and **Table 76** contains the weighted results of the Random group. Due to the intricate weighting mechanism with large weight spans, comparisons should be made with caution.²⁵ The distribution of the measured quantities within the applicant population shifts slightly from year to year due to sampling effects as well as due to changes in economic circumstances of the applicants.

Several of the columns in the tables report on the same statistics as in earlier reports. Consider the weighted results from the Random group as in **Table 74** and **Table 76**.

In the first group of attributes, the median number of employees has decreased (55 vs. 100 previously, see also **Figure 14** to **Figure 20**). The proportion of SMEs among applicants is considered to be better estimated by the mean proportion than by the median (not shown). The mean increased from 51% in the 2013 survey to 57% in the current survey (58% in the 2012 survey), but with wide 95% confidence limits (49% to 65%). Note that this proportion is lower than the mean proportion of applicants with less than 250 employees of approximately 68% that was shown in **Figure 16**. The estimates for the proportion of SMEs vary by residence bloc between Japan at 19% and Others at 53%, with EPC at 57% being second to the US at 67%. The proportion of applications made by SMEs (Total applications in 2013, being the sum of Euro-direct and Euro-PCT-RP) were estimated from the weighted analysis as 18% overall (19% in 2013) with 95% confidence limits ranging from 13% to 22%. The estimates vary by residence bloc between Japan at 3% and Others at 21%, EPC at 19%, and the US at 25%. Given the variability of the estimates as indicated by the current confidence limits, the survey's estimates concerning the share of SME applicants at the EPO as well as the share of EPO applications made by SME applicants has been reasonably stable for all surveys dating back to 2012. Proportions of inventive staff are at a median of 15% compared to 12% in 2013 (and 17% in 2012).

In the second group of attributes, the median R&D budget decreased again from EUR 1.2 million in the previous survey to EUR 0.6 million. A topic that is reported for the second time in the current tables is the proportion of overall R&D expenditure spent specifically on activities that might lead to patent filings. This is estimated at a median of 40%, which is inside the 95% confidence limits for the mean percentage (39% to 52%). The median number of first filings is 3 compared to 4 previously. The total number of patent inventions considered for patent applications remains at 3 as last year, with a mean of 34 (50 previously), reflecting a long upper tail to this distribution.

²⁵ The analyses were made using all data available for the groups concerned, while in surveys before 2007 some outliers were excluded.

In the third group of attributes, the median ratio of the number of first filings to the number of inventions is 1.0, the same as previously, while median turnover per first patent filing is roughly EUR 8 million. The median R&D expenditure per first filing decreased further to EUR 270 000 (compared to EUR 420 000 in the 2013 survey and EUR 450 000 in the 2012 survey).

All the results are rather variable, and an idea of this is given by the wide 95% confidence limits for most of the respective weighted means, although these can be presumed to be more variable than the weighted medians.

In **Section 13.4**, histograms were drawn to represent the distributions represented by the weighted means and medians for numbers of employees. Similar histograms could also be constructed for the other measures described in this section.

By sample group

Sample group	Statistic	Number of employees at the end of 2013	Proportion of SMEs among applicants	Proportion of applications made by SMEs	Proportion of staff directly involved in making inventions	Approximate R&D budget in 2013 [EUR]	Proportion of R&D expenditure spent on activities that might lead to first filings	Number of first patent filings throughout the world in 2013	Total number of inventions considered for patent application in 2013	First patent filings by number of inventions	Total turnover by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]
Biggest Unweighted	N	133	115	115	82	72	40	152	101	101	127	71
	MIN	2			0%	20 000	1%	6	3	0.2	7 133	2 386
	MAX	362 000			100%	7 375 705 000	100%	7 250	10 000	10.0	261 012 192	32 481 622
	MEDIAN	18 000			8%	283 692 906	65%	271	400	0.7	21 400 778	1 197 297
	MEAN	48 503	3%	1%	14%	909 356 334	55%	689	1 134	0.9	39 687 576	2 277 132
Random Unweighted	N	536	458	458	424	278	269	574	430	407	404	259
	MIN	1			0%	1 000	0%	1	1	0.1	835	1 000
	MAX	362 000			100%	7 375 705 000	100%	7 250	10 000	9.8	71 428 571 429	4 328 166 000
	MEDIAN	2 382			8%	25 000 000	35%	27	32	0.8	16 139 409	822 555
	MEAN	16 913	24%	1%	20%	371 224 664	42%	236	344	0.9	347 391 117	20 180 817
Random Weighted	WEIGHTED N	519	454	454	469	303	372	511	449	400	263	256
	MIN	1			0%	1 000	0%	1	1	0.1	835	1 000
	MAX	362 000			100%	7 375 705 000	100%	7 250	10 000	9.8	71 428 571 429	4 328 166 000
	MEDIAN	55			15%	582 292	40%	3	3	1.0	7 763 900	270 940
	MEAN	2 529	57%	18%	33%	39 001 559	46%	36	34	1.1	150 300 953	8 308 245
	MEAN 95% LB	1 802	49%	13%	26%	19 068 786	39%	10	25	0.9	17 136 643	0
	MEAN 95% UB	3 256	65%	22%	40%	58 934 331	52%	62	44	1.3	283 465 263	21 915 924

Table 72: Main statistics for the various sample groups

Random group
Unweighted

Residence bloc	Statistic	Number of employees at the end of 2013	Proportion of SMEs among applicants	Proportion of applications made by SMEs	Proportion of staff directly involved in making inventions	Approximate R&D budget in 2013 [EUR]	Proportion of R&D expenditure spent on activities that might lead to first filings	Number of first patent filings throughout the world in 2013	Total number of inventions considered for patent application in 2013	First patent filings by number of inventions	Total turnover by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]
EP	N	326	279	279	256	169	181	353	256	241	245	155
	MIN	1			0%	1 000	0%	1	1	0.1	3 750	1 000
	MAX	362 000			100%	4 500 000 000	100%	4 918	9 000	9.8	71 428 571 429	4 328 166 000
	MEDIAN	1 455			7%	14 000 000	25%	11	15	0.8	18 737 830	1 000 000
	MEAN	15 186	29%	2%	20%	287 442 087	38%	101	144	0.9	547 165 869	32 044 401
JP	N	115	99	99	86	54	25	112	90	86	103	54
	MIN	7			0%	570 400	1%	1	3	0.2	835	6 359
	MAX	320 725			50%	6 495 430 000	100%	7 250	9 619	2.5	235 115 031	34 794 400
	MEDIAN	4 800			8%	99 320 900	30%	225	200	0.8	8 442 895	404 661
	MEAN	16 994	5%	0%	12%	454 911 529	33%	643	758	0.8	22 598 124	1 999 016
OT	N	15	14	14	15	6	10	16	13	13	8	5
	MIN	2			0%	6 954	1%	1	1	0.1	34 771	6 954
	MAX	22 000			100%	212 640 000	90%	1 842	2 600	9.2	248 444 800	2 126 400
	MEDIAN	2 500			25%	2 790 008	37%	59	100	1.0	1 348 500	485 244
	MEAN	4 463	29%	2%	31%	39 657 879	38%	406	486	1.5	42 813 167	760 519
US	N	80	66	66	67	49	53	93	71	67	48	45
	MIN	1			0%	38 820	2%	1	1	0.1	19 410	4 215
	MAX	300 000			100%	7 375 705 000	100%	2 500	10 000	4.2	776 390 000	77 639 000
	MEDIAN	3 350			15%	13 975 020	70%	28	24	0.7	53 750 077	931 668
	MEAN	26 169	30%	1%	27%	608 562 734	63%	227	512	0.8	75 422 107	3 293 335
Total	N	536	458	458	424	278	269	574	430	407	404	259
	MEDIAN	2 382			8%	25 000 000	0	27	32	0.8	16 139 409	822 555
	MEAN	16 913	24%	1%	20%	371 224 664	0	236	344	0.9	347 391 117	20 180 817

Table 73: Main statistics for activities by residence bloc – Random group (unweighted)

Random group
Cases weighted with structural weight

Residence bloc	Statistic	Number of employees at the end of 2013	Proportion of SMEs among applicants	Proportion of applications made by SMEs	Proportion of staff directly involved in making inventions	Approximate R&D budget in 2013 [EUR]	Proportion of R&D expenditure spent on activities that might lead to first filings	Number of first patent filings throughout the world in 2013	Total number of inventions considered for patent application in 2013	First patent filings by number of inventions	Total turnover by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]
EP	WEIGHTED N	248	229	229	218	128	175	244	206	181	157	104
	MIN	1			0%	1 000	0%	1	1	0.1	3 750	1 000
	MAX	362 000			100%	4 500 000 000	100%	4 918	9 000	9.8	71 428 571 429	4 328 166 000
	MEDIAN	85			12%	300 000	20%	2	2	1.0	7 594 937	200 000
	MEAN	2 125	57%	19%	29%	53 027 849	36%	11	13	1.1	220 268 189	18 728 073
	MEAN 95% LB	1 293	48%	13%	22%	13 262 761	29%	8	9	0.9	0	0
JP	WEIGHTED N	2 957	65%	24%	35%	92 792 938	44%	14	18	1.3	442 908 335	51 957 636
	MIN	32	26	26	26	13	7	24	24	19	23	13
	MAX	7			0%	570 400	1%	1	3	0.2	835	6 359
	MEDIAN	320 725			50%	6 495 430 000	100%	7 250	9 619	2.5	235 115 031	34 794 400
	MEAN	1 000			7%	32 798 000	40%	28	46	0.8	9 126 400	270 940
	MEAN 95% LB	4 502	19%	3%	11%	104 031 203	46%	183	217	0.9	20 107 792	1 253 788
OT	WEIGHTED N	2 567	1%	0%	7%	35 391 569	26%	110	121	0.7	12 210 321	404 643
	MIN	6 438	36%	5%	15%	172 670 838	67%	257	314	1.0	28 005 263	2 102 933
	MAX	50	53	53	50	38	42	49	38	38	28	28
	MIN	2			0%	6 954	1%	1	1	0.1	34 771	6 954
	MAX	22 000			100%	212 640 000	90%	1 842	2 600	9.2	248 444 800	2 126 400
	MEDIAN	35			10%	310 556	25%	2	1	1.0	590 090	310 556
US	WEIGHTED N	2 594	53%	21%	33%	3 390 889	30%	157	52	1.8	10 515 214	302 890
	MIN	59	17%	0%	1%	0	21%	0	0	0.3	0	35 679
	MAX	5 130	89%	43%	65%	7 337 483	39%	424	109	3.3	29 153 974	570 102
	MIN	190	147	147	175	124	149	193	181	162	56	110
	MAX	1			0%	38 820	2%	1	1	0.1	19 410	4 215
	MEDIAN	300 000			100%	7 375 705 000	100%	2 500	10 000	4.2	776 390 000	77 639 000
Total	WEIGHTED N	10			27%	621 112	60%	2	3	0.7	26 772 069	291 146
	MIN	2 709	67%	25%	41%	28 271 392	62%	18	31	0.9	78 289 487	1 291 440
	MAX	1 219	52%	13%	28%	6 134 891	50%	12	16	0.6	24 268 039	510 499
	MEDIAN	4 200	82%	36%	54%	50 407 894	73%	24	46	1.1	132 310 934	2 072 380
	MIN	519	454	454	469	303	372	511	449	400	263	256
	MAX	55			15%	582 292	40%	3	3	1.0	7 763 900	270 940
Total	WEIGHTED N	2 529	57%	18%	33%	39 001 559	46%	36	34	1.1	150 300 953	8 308 245
	MIN	1 802	49%	13%	26%	19 068 786	39%	10	25	0.9	17 136 643	0
	MAX	3 256	65%	22%	40%	58 934 331	52%	62	44	1.3	283 465 263	21 915 924
	MEDIAN											

Table 74: Main statistics for activities by residence bloc – Random group (weighted)

Random group
Unweighted

Mega Cluster	Statistic	Number of employees at the end of 2013	Proportion of SMEs among applicants	Proportion of applications made by SMEs	Proportion of staff directly involved in making inventions	Approximate R&D budget in 2013 [EUR]	Proportion of R&D expenditure spent on activities that might lead to first filings	Number of first patent filings throughout the world in 2013	Total number of inventions considered for patent application in 2013	First patent filings by number of inventions	Total turnover by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]
Electricity	N	170	148	148	136	80	87	172	143	138	131	73
	MIN	1			0%	1 000	0%	1	1	0.1	835	1 000
	MAX	320 725			100%	2 000 000 000	100%	5 590	10 000	9.8	776 390 000	10 276 400
	MEDIAN	3 400			10%	17 040 290	50%	17	50	0.7	11 538 462	822 555
	MEAN	19 535	17%	1%	22%	121 198 447	47%	201	414	0.8	30 485 374	1 528 632
Organic Chemistry	N	118	101	101	89	53	53	120	90	87	83	51
	MIN	1			0%	8 424	2%	1	1	0.1	28 537	4 215
	MAX	300 000			100%	5 201 813 000	100%	1 250	10 000	9.8	71 428 571 429	4 328 166 000
	MEDIAN	3 021			15%	38 118 762	50%	13	36	0.7	21 400 778	1 799 052
	MEAN	18 536	18%	1%	27%	488 814 759	52%	62	376	0.9	1 331 798 515	92 055 619
Inorganic Chemistry	N	120	112	112	93	60	59	119	92	89	100	58
	MIN	3			0%	20 000	0%	1	1	0.1	28 537	6 667
	MAX	145 000			100%	399 280 000	100%	1 200	7 100	4.2	1 487 360 703	32 500 000
	MEDIAN	3 780			8%	27 173 650	40%	20	50	0.8	19 566 726	547 884
	MEAN	11 232	15%	1%	20%	66 249 542	43%	95	342	0.9	76 095 570	2 353 269
ICT	N	89	80	80	66	38	40	88	73	71	65	37
	MIN	1			0%	3 882	0%	1	1	0.1	38 235	6 359
	MAX	320 725			100%	7 375 705 000	100%	2 500	10 000	9.8	8 600 000 000	10 276 400
	MEDIAN	3 300			19%	15 945 932	30%	32	50	0.8	8 858 485	915 006
	MEAN	28 124	18%	1%	27%	494 937 425	39%	270	705	1.0	156 130 005	2 019 420
Traditional	N	306	256	256	247	158	154	319	254	242	241	148
	MIN	1			0%	10 000	0%	1	1	0.1	5 591	2 386
	MAX	320 725			100%	6 495 430 000	100%	5 751	10 000	9.2	8 600 000 000	160 095 238
	MEDIAN	2 900			7%	16 306 838	35%	17	36	0.8	19 841 200	783 750
	MEAN	18 931	21%	1%	18%	252 215 538	41%	141	348	0.9	95 826 187	3 012 584

Table 75: Main statistics for activities in various sectors – Random group (unweighted)

Random group
Unweighted

Mega Cluster	Statistic	Number of employees at the end of 2013	Proportion of SMEs among applicants	Proportion of applications made by SMEs	Proportion of staff directly involved in making inventions	Approximate R&D budget in 2013 [EUR]	Proportion of R&D expenditure spent on activities that might lead to first filings	Number of first patent filings throughout the world in 2013	Total number of inventions considered for patent application in 2013	First patent filings by number of inventions	Total turnover by first patent filing [EUR per first filing]	R&D budget by first patent filing [EUR per first filing]
Electricity	N	170	148	148	136	80	87	172	143	138	131	73
	MIN	1			0%	1 000	0%	1	1	0.1	835	1 000
	MAX	320 725			100%	2 000 000 000	100%	5 590	10 000	9.8	776 390 000	10 276 400
	MEDIAN	3 400			10%	17 040 290	50%	17	50	0.7	11 538 462	822 555
	MEAN	19 535	17%	1%	22%	121 198 447	47%	201	414	0.8	30 485 374	1 528 632
Organic Chemistry	N	118	101	101	89	53	53	120	90	87	83	51
	MIN	1			0%	8 424	2%	1	1	0.1	28 537	4 215
	MAX	300 000			100%	5 201 813 000	100%	1 250	10 000	9.8	71 428 571 429	4 328 166 000
	MEDIAN	3 021			15%	38 118 762	50%	13	36	0.7	21 400 778	1 799 052
	MEAN	18 536	18%	1%	27%	488 814 759	52%	62	376	0.9	1 331 798 515	92 055 619
Inorganic Chemistry	N	120	112	112	93	60	59	119	92	89	100	58
	MIN	3			0%	20 000	0%	1	1	0.1	28 537	6 667
	MAX	145 000			100%	399 280 000	100%	1 200	7 100	4.2	1 487 360 703	32 500 000
	MEDIAN	3 780			8%	27 173 650	40%	20	50	0.8	19 566 726	547 884
	MEAN	11 232	15%	1%	20%	66 249 542	43%	95	342	0.9	76 095 570	2 353 269
ICT	N	89	80	80	66	38	40	88	73	71	65	37
	MIN	1			0%	3 882	0%	1	1	0.1	38 235	6 359
	MAX	320 725			100%	7 375 705 000	100%	2 500	10 000	9.8	8 600 000 000	10 276 400
	MEDIAN	3 300			19%	15 945 932	30%	32	50	0.8	8 858 485	915 006
	MEAN	28 124	18%	1%	27%	494 937 425	39%	270	705	1.0	156 130 005	2 019 420
Traditional	N	306	256	256	247	158	154	319	254	242	241	148
	MIN	1			0%	10 000	0%	1	1	0.1	5 591	2 386
	MAX	320 725			100%	6 495 430 000	100%	5 751	10 000	9.2	8 600 000 000	160 095 238
	MEDIAN	2 900			7%	16 306 838	35%	17	36	0.8	19 841 200	783 750
	MEAN	18 931	21%	1%	18%	252 215 538	41%	141	348	0.9	95 826 187	3 012 584

Table 76: Main statistics for activities in various sectors – Random group (weighted)

14 Annex VII: Additional topics in this year's survey

In Sections D and E, the 2014 survey included additional questions on applicant assessments of their European patent portfolios and on the use of patent intermediaries.

14.1 Information about European patent portfolios

Summary results from the Biggest and Random groups with respect to European patent portfolios appear in **Table 77**, while **Table 78** to **Table 81** provide more details on Random group results (unweighted and weighted), as well as broken down by residence bloc and sector.

Each table contains statistics on the proportion of 2013 European patent portfolios which were non-existent in 2000, growth from 2000 to 2013 of those European patent portfolios which existed in 2000, an estimate of the monetary value of European patent portfolios in euros, an estimate on the share of patents in the European patent portfolio which were purchased, as well as information about systematic value monitoring of the European Patent portfolio.

The weighted median portfolio growth rate from 2000 to 2013, for those with patent portfolios in 2000, was 388% (220% from 2000 to 2012 in the 2013 survey). Only 8% of applicants apparently routinely monitor the value of their European patent portfolio, with a slightly higher proportion doing so in EPC than in the US bloc. For the monetary value of the portfolio, a weighted median of EUR 1 million and a weighted mean of EUR 12.6 million (EUR 24 million in the 2013 survey) are reported. The EPC bloc reports a weighted median of EUR 1.3 million (EUR 500 000 in the 2013 survey) and a weighted mean of EUR 6.1 million (with 95% confidence limits from EUR 2.9 million to EUR 9.3 million; weighted mean EUR 13.5 million in the 2013 survey). Regarding the share of purchased patents in the European patent portfolio, this had a weighted mean of 14%, but with wide 95% confidence limits because the question was answered by only 110 respondents, 85 of which were EPC residents.

In terms of sections, **Table 81** suggests that patent portfolios are most valuable for applicants in the Organic Chemistry mega cluster. This may be due to the effects of large company sizes and higher budgets for R&D in this cluster (see **Table 76**) as well as perhaps the known tendency for pharmaceutical companies to keep hold of their patents for a long time in order to fully exploit IP rights.

Sample group	Statistic	Proportion of 2013 European patent portfolios which were nonexistent in 2000	Growth of European patent portfolios from 2000 to 2013	Monetary estimate of total value of European patent portfolio [EUR]	Share of purchased patents in European patent portfolio
Biggest Unweighted	N	62	55	7	34
	MIN		-18%	0	0%
	MAX		6119%	465 834 000	10%
	MEDIAN		224%	30 000 000	1%
	MEAN	6%	489%	106 363 429	2%
Random Unweighted	N	325	195	69	110
	MIN		-100%	0	0%
	MAX		10800%	465 834 000	90%
	MEDIAN		217%	3 881 950	2%
	MEAN	30%	623%	24 533 239	6%
Random Weighted	WEIGHTED N	375	117	149	73
	MIN		-100%	0	0%
	MAX		10800%	465 834 000	90%
	MEDIAN		200%	1 000 000	1%
	MEAN	46%	388%	12 560 826	14%
	MEAN 95% LB	36%	254%	3 765 916	1%
	MEAN 95% UB	56%	521%	21 355 735	28%

		Do you currently monitor the monetary value of your European patent portfolio?		
Sample group	Valid N	Yes	No	Don't know
Biggest group unweighted	115	10%	81%	10%
Random group unweighted	502	10%	78%	12%
Random group weighted	528	8%	79%	13%

Table 77: Assessment of and information about systematic monitoring of the monetary value of European Patent portfolios

Random group
Unweighted

Residence bloc	Statistic	Proportion of 2013 European patent portfolios which were nonexistent in 2000	Growth of European patent portfolios from 2000 to 2013	Monetary estimate of total value of European patent portfolio [EUR]	Share of purchased patents in European patent portfolio
EP	N	201	117	40	85
	MIN		-62%	0	0%
	MAX		6119%	465 834 000	60%
	MEDIAN		244%	2 750 000	2%
	MEAN	36%	549%	27 006 650	4%
JP	N	64	48	5	7
	MIN		-100%	0	0%
	MAX		4900%	9 982 000	8%
	MEDIAN		116%	713 000	4%
	MEAN	6%	478%	3 565 000	4%
OT	N	13	5	4	0
	MIN		100%	776 390	n/a
	MAX		10800%	6 987 510	n/a
	MEDIAN		1556%	1 000 000	n/a
	MEAN	54%	4398%	2 440 975	n/a
US	N	47	25	20	18
	MIN		-55%	0	0%
	MAX		5300%	155 278 000	90%
	MEDIAN		250%	6 881 950	4%
	MEAN	28%	487%	29 246 930	13%
TOTAL	N	325	195	69	110
	MIN		-100%	0	0%
	MAX		10800%	465 834 000	90%
	MEDIAN		217%	3 881 950	2%
	MEAN	30%	623%	24 533 239	6%

Random group
Unweighted

		Do you currently monitor the monetary value of your European patent portfolio?		
Residence bloc	Valid N	Yes	No	Don't know
EP	300	13%	80%	7%
JP	104	3%	81%	16%
OT	16	13%	63%	25%
US	82	7%	74%	18%
TOTAL	502	10%	78%	12%

Table 78: Assessment of and information about systematic monitoring of the monetary value of European Patent portfolios by residence bloc – Random group (unweighted)

Random group
Cases weighted with structural weight

Residence bloc	Statistic	Proportion of 2013 European patent portfolios which were nonexistent in 2000	Growth of European patent portfolios from 2000 to 2013	Monetary estimate of total value of European patent portfolio [EUR]	Share of purchased patents in European patent portfolio
EP	WEIGHTED N	180	62	42	40
	MIN		-62%	0	0%
	MAX		6119%	465 834 000	60%
	MEDIAN		100%	1 272 990	1%
	MEAN	53%	364%	6 085 898	8%
	MEAN 95% LB	43%	206%	2 854 412	2%
	MEAN 95% UB	63%	522%	9 317 385	15%
JP	WEIGHTED N	21	12	2	1
	MIN		-100%	0	0%
	MAX		4900%	9 982 000	8%
	MEDIAN		67%	9 982 000	5%
	MEAN	10%	245%	6 259 295	5%
	MEAN 95% LB	0%	91%	1 377 546	3%
	MEAN 95% UB	22%	399%	11 141 044	6%
OT	WEIGHTED N	45	4	28	n/a
	MIN		100%	776 390	n/a
	MAX		10800%	6 987 510	n/a
	MEDIAN		100%	1 000 000	n/a
	MEAN	68%	653%	1 716 383	n/a
	MEAN 95% LB	29%	-100%	87 216	n/a
	MEAN 95% UB	107%	1795%	3 345 549	n/a
US	WEIGHTED N	130	38	77	33
	MIN		-55%	0	0%
	MAX		5300%	155 278 000	90%
	MEDIAN		250%	3 881 950	0%
	MEAN	34%	444%	20 198 350	21%
	MEAN 95% LB	16%	137%	4 348 038	0%
	MEAN 95% UB	53%	750%	36 048 662	50%
TOTAL	WEIGHTED N	375	117	149	73
	MIN		-100%	0	0%
	MAX		10800%	465 834 000	90%
	MEDIAN		200%	1 000 000	1%
	MEAN	46%	388%	12 560 826	14%
	MEAN 95% LB	36%	254%	3 765 916	1%
	MEAN 95% UB	56%	521%	21 355 735	28%

Random group
Cases weighted with structural weight

		Do you currently monitor the monetary value of your European patent portfolio?		
Residence bloc	Valid Weighted N	Yes	No	Don't know
EP	246	10%	78%	11%
JP	30	0%	81%	19%
OT	60	12%	82%	6%
US	192	5%	80%	15%
TOTAL	528	8%	79%	13%

Table 79: Assessment of and information about systematic monitoring of the monetary value of European Patent portfolios by residence bloc – Random group (weighted)

Random group
Unweighted

Mega Cluster	Statistic	Proportion of 2013 European patent portfolios which were nonexistent in 2000	Growth of European patent portfolios from 2000 to 2013	Monetary estimate of total value of European patent portfolio [EUR]	Share of purchased patents in European patent portfolio
Electricity	N	93	62	19	30
	MIN		-55%	0	0%
	MAX		10800%	100 000 000	15%
	MEDIAN		180%	5 000 000	1%
	MEAN	23%	782%	14 635 504	2%
Organic Chemistry	N	71	44	14	29
	MIN		-58%	0	0%
	MAX		3267%	465 834 000	90%
	MEDIAN		147%	11 364 950	3%
	MEAN	30%	405%	61 339 525	10%
Inorganic Chemistry	N	69	46	12	25
	MIN		-60%	1 000	0%
	MAX		2000%	155 278 000	50%
	MEDIAN		184%	4 440 975	2%
	MEAN	28%	322%	19 648 153	5%
ICT	N	56	38	11	14
	MIN		-47%	500 000	0%
	MAX		10800%	80 000 000	60%
	MEDIAN		354%	3 881 950	2%
	MEAN	29%	1180%	13 868 567	7%
Traditional	N	190	117	42	65
	MIN		-100%	0	0%
	MAX		9100%	465 834 000	10%
	MEDIAN		216%	4 940 975	2%
	MEAN	27%	474%	29 875 318	3%

Random group
Unweighted

		Do you currently monitor the monetary value of your European patent portfolio?		
Mega Cluster	Valid N	Yes	No	Don't know
Electricity	167	11%	80%	8%
Organic Chemistry	114	12%	78%	10%
Inorganic Chemistry	112	9%	83%	8%
ICT	84	18%	67%	15%
Traditional	296	12%	76%	11%

Table 80: Assessment of and information about systematic monitoring of the monetary value of European Patent portfolios in various sectors – Random group (unweighted)

Random group
Cases weighted with structural weight

Mega Cluster	Statistic	Proportion of 2013 European patent portfolios which were nonexistent in 2000	Growth of European patent portfolios from 2000 to 2013	Monetary estimate of total value of European patent portfolio [EUR]	Share of purchased patents in European patent portfolio
Electricity	WEIGHTED N	108	38	33	15
	MIN		-55%	0	0%
	MAX		10800%	100 000 000	15%
	MEDIAN		100%	1 000 000	0%
	MEAN	38%	426%	2 949 754	2%
	MEAN 95% LB	18%	122%	666 399	0%
	MEAN 95% UB	57%	731%	5 233 110	3%
Organic Chemistry	WEIGHTED N	89	29	38	32
	MIN		-58%	0	0%
	MAX		3267%	465 834 000	90%
	MEDIAN		133%	38 819 500	0%
	MEAN	46%	302%	39 627 112	24%
	MEAN 95% LB	26%	135%	14 393 908	0%
	MEAN 95% UB	66%	469%	64 860 317	52%
Inorganic Chemistry	WEIGHTED N	68	24	17	21
	MIN		-60%	1 000	0%
	MAX		2000%	155 278 000	50%
	MEDIAN		267%	1 272 990	0%
	MEAN	52%	372%	3 516 354	9%
	MEAN 95% LB	30%	220%	1 108 647	0%
	MEAN 95% UB	74%	523%	5 924 062	21%
ICT	WEIGHTED N	36	16	15	9
	MIN		-47%	500 000	0%
	MAX		10800%	80 000 000	60%
	MEDIAN		250%	776 390	0%
	MEAN	37%	767%	3 966 427	3%
	MEAN 95% LB	14%	80%	0	0%
	MEAN 95% UB	61%	1455%	9 730 390	10%
Traditional	WEIGHTED N	187	72	63	19
	MIN		-100%	0	0%
	MAX		9100%	465 834 000	10%
	MEDIAN		225%	2 500 000	1%
	MEAN	41%	378%	5 504 794	2%
	MEAN 95% LB	29%	238%	3 017 935	1%
	MEAN 95% UB	53%	518%	7 991 652	3%

Random group
Cases weighted with structural weight

		Do you currently monitor the monetary value of your European patent portfolio?		
Mega Cluster	Valid Weighted N	Yes	No	Don't know
Electricity	139	9%	85%	6%
Organic Chemistry	121	6%	81%	12%
Inorganic Chemistry	96	3%	87%	10%
ICT	60	5%	71%	23%
Traditional	259	9%	76%	15%

Table 81: Assessment of and information about systematic monitoring of the monetary value of European Patent portfolios in various sectors – Random group (weighted)

14.2 Activity as and usage of patent intermediaries

The importance of the growing patent market in Europe is assessed in three groups of analyses: Firstly, past acquisition of patents is assessed. Then activities as or with patent intermediaries are described (Q. D. (b)).²⁶

With respect to past acquisition of European patents, summary results from the Biggest and Random groups appear in **Table 82**, while **Table 83** to **Table 86** provide more detail on Random group results (unweighted and weighted), as well as broken down by residence bloc and sector. Each table contains statistics on the genesis of European patents in the respondent's portfolio.

According to estimates for the EPO applicant population that was addressed via the survey, 95% of companies acquired European patents via their own R&D efforts. This share is consistently high across residence blocs. Other than own R&D efforts, patent acquisitions via mergers and acquisitions from other companies are the second most frequent patent source, followed by patent purchases directly from other operating entities as the third most frequent source. Regarding acquisition of patents via mergers and acquisitions from other companies, these seem to be more prevalent in US companies and in the Organic Chemistry mega cluster.

By sample group

Have you acquired European patents during the last 5 years?							
Sample group	Valid	Own patents through own R&D	Purchased patents directly from other entities	Purchased patents at patent auctions	Purchased via a consortium	Merged and/or acquired (parts of) other companies	Other
	N ¹⁾	%	%	%	%	%	%
Biggest Unweighted	130	99.2%	23.8%	0.0%	2.3%	30.0%	0.8%
Random Unweighted	513	97.9%	16.8%	0.2%	1.6%	19.7%	2.3%
Random Weighted	477	95.2%	9.5%	0.0%	0.1%	11.2%	3.5%

1) Unweighted for Biggest Unweighted and Random Unweighted, Weighted N for Random Weighted

Table 82: Acquisition of European patents during the past five years

²⁶ Questions on the role of the respondent in the patent market are not analysed here because of difficulties caused by some respondents ticking more than one box in Q. E (a).

Random group, Unweighted

Have you acquired European patents during the last 5 years?							
Residence bloc	Valid	Own patents through own R&D	Purchased patents directly from other entities	Purchased patents at patent auctions	Purchased via a consortium	Merged and/or acquired (parts of) other companies	Other
	N	%	%	%	%	%	%
EP	311	97.7%	18.6%	0.3%	1.6%	20.3%	3.2%
JP	109	100.0%	7.3%	0.0%	0.9%	9.2%	0.0%
OT	16	100.0%	0.0%	0.0%	0.0%	6.3%	0.0%
US	77	94.8%	26.0%	0.0%	2.6%	35.1%	2.6%
TOTAL	513	97.9%	16.8%	0.2%	1.6%	19.7%	2.3%

Table 83: Acquisition of European patents during the past five years by residence bloc – Random group (unweighted)

Random group, Cases weighted with structural weight

Have you acquired European patents during the last 5 years?							
Residence bloc	Valid	Own patents through own R&D	Purchased patents directly from other entities	Purchased patents at patent auctions	Purchased via a consortium	Merged and/or acquired (parts of) other companies	Other
	WEIGHTED N	%	%	%	%	%	%
EP	230	96.4%	8.1%	0.0%	0.2%	9.3%	4.4%
JP	32	100.0%	3.0%	0.0%	0.2%	5.1%	0.0%
OT	52	100.0%	0.0%	0.0%	0.0%	6.2%	0.0%
US	164	91.0%	15.7%	0.0%	0.1%	16.7%	3.9%
TOTAL	477	95.2%	9.5%	0.0%	0.1%	11.2%	3.5%

Table 84: Acquisition of European patents during the past five years by residence bloc – Random group (weighted)

Random group, Unweighted

Have you acquired European patents during the last 5 years?							
Mega Cluster	Valid	Own patents through own R&D	Purchased patents directly from other entities	Purchased patents at patent auctions	Purchased via a consortium	Merged and/or acquired (parts of) other companies	Other
	N	%	%	%	%	%	%
Electricity	163	99.4%	12.9%	0.6%	1.8%	21.5%	2.5%
Organic Chemistry	115	96.5%	30.4%	0.9%	2.6%	27.8%	2.6%
Inorganic Chemistry	117	97.4%	17.1%	0.0%	1.7%	17.9%	1.7%
ICT	88	96.6%	20.5%	1.1%	6.8%	27.3%	3.4%
Traditional	302	98.3%	16.9%	0.3%	1.7%	19.2%	2.6%

Table 85: Acquisition of European patents during the past five years in various sectors – Random group (unweighted)

Random group, Cases weighted with structural weight

Have you acquired European patents during the last 5 years?							
Mega Cluster	Valid	Own patents through own R&D	Purchased patents directly from other entities	Purchased patents at patent auctions	Purchased via a consortium	Merged and/or acquired (parts of) other companies	Other
	WEIGHTED N	%	%	%	%	%	%
Electricity	114	99.7%	2.5%	0.0%	0.1%	11.8%	0.6%
Organic Chemistry	108	91.9%	22.9%	0.0%	0.3%	19.1%	2.6%
Inorganic Chemistry	96	94.4%	9.2%	0.0%	0.2%	10.8%	3.0%
ICT	53	94.0%	4.4%	0.1%	0.7%	10.8%	13.2%
Traditional	251	97.2%	5.5%	0.0%	0.2%	11.3%	2.0%

Table 86: Acquisition of European patents during the past five years in various sectors – Random group (weighted)

With respect to activities as or with patent intermediaries (Q. E. (c)), summary results from the Biggest and Random groups appear in **Table 87**, while **Table 88** to **Table 91** provide more detail on Random group results (unweighted and weighted), as well as broken down by residence bloc and sector. Each table contains summary statistics on the activity types performed by the entity types listed.

With regard to disposal for usage by others of IP rights from the reporting companies, by far the highest amount of sales and licensing out was to Operating companies. Buying and licensing in was also done from Operating companies, which is only to be expected considering their high prevalence among the applicants. But there was also some buying and licensing in from Independent inventors and Universities & research organisations. According to **Table 89**, this signal of inward interactions applies mainly in the EPC area with respect to buying in patents from Independent inventors, and mainly in the US area with respect to licensing in from Universities and research organisations. **Table 91** also suggests that it is companies in the Organic Chemistry mega cluster that do most licensing in from Universities & research organisations.

By sample group

For each of the following entities, please indicate your activities
with respect to European patents during the past 5 years

Sample group	Valid	Entity	You sold to ...	You licensed to ...	You bought from ...	You licensed from ...
	N ¹⁾		%	%	%	%
Biggest Unweighted	112	Independent inventors	4.5%	4.5%	11.6%	4.5%
	112	Universities, research organisations	5.4%	9.8%	12.5%	22.3%
	112	Operating companies	19.6%	40.2%	24.1%	33.0%
	112	Brokers	0.0%	0.9%	0.0%	0.0%
	112	Private / Public funds	0.0%	0.9%	0.0%	0.0%
	112	Defensive aggregators	1.8%	0.9%	0.0%	0.9%
	112	Offensive aggregators	1.8%	0.9%	1.8%	2.7%
Random Unweighted	457	Independent inventors	2.4%	2.2%	10.9%	3.5%
	457	Universities, research organisations	1.8%	5.3%	10.1%	12.3%
	457	Operating companies	11.4%	29.8%	14.4%	20.6%
	457	Brokers	0.0%	0.2%	0.2%	0.2%
	457	Private / Public funds	0.0%	0.9%	0.2%	0.2%
	457	Defensive aggregators	0.7%	0.9%	0.0%	1.1%
	457	Offensive aggregators	0.7%	0.9%	0.2%	1.5%
Random Weighted	458	Independent inventors	1.4%	0.9%	4.9%	2.0%
	458	Universities, research organisations	0.5%	2.2%	1.6%	6.0%
	458	Operating companies	5.0%	14.6%	6.0%	6.7%
	458	Brokers	0.0%	0.0%	0.0%	0.5%
	458	Private / Public funds	0.0%	0.7%	0.5%	0.5%
	458	Defensive aggregators	0.0%	1.1%	0.0%	0.6%
	458	Offensive aggregators	0.0%	0.6%	0.0%	0.1%

1) Unweighted for Biggest Unweighted and Random Unweighted, Weighted N for Random Weighted

Table 87: Activities as or with patent intermediaries

Random group, Unweighted

For each of the following entities, please indicate your activities with respect to European patents during the past 5 years						
Residence bloc	Valid	Entity	You sold to ...	You licensed to ...	You bought from ...	You licensed from ...
	N		%	%	%	%
EP	272	Independent inventors	4.0%	3.3%	17.3%	4.4%
	272	Universities, research organisations	2.9%	5.9%	14.7%	13.6%
	272	Operating companies	13.2%	31.6%	16.5%	21.0%
	272	Brokers	0.0%	0.0%	0.4%	0.4%
	272	Private / Public funds	0.0%	1.5%	0.4%	0.4%
	272	Defensive aggregators	0.7%	0.7%	0.0%	1.1%
	272	Offensive aggregators	0.7%	1.1%	0.0%	1.8%
JP	100	Independent inventors	0.0%	0.0%	0.0%	0.0%
	100	Universities, research organisations	0.0%	2.0%	5.0%	4.0%
	100	Operating companies	4.0%	21.0%	8.0%	18.0%
	100	Brokers	0.0%	1.0%	0.0%	0.0%
	100	Private / Public funds	0.0%	0.0%	0.0%	0.0%
	100	Defensive aggregators	0.0%	0.0%	0.0%	1.0%
	100	Offensive aggregators	0.0%	0.0%	0.0%	2.0%
OT	15	Independent inventors	0.0%	0.0%	0.0%	0.0%
	15	Universities, research organisations	0.0%	0.0%	0.0%	0.0%
	15	Operating companies	6.7%	26.7%	0.0%	6.7%
	15	Brokers	0.0%	0.0%	0.0%	0.0%
	15	Private / Public funds	0.0%	0.0%	0.0%	0.0%
	15	Defensive aggregators	0.0%	0.0%	0.0%	0.0%
	15	Offensive aggregators	0.0%	6.7%	0.0%	0.0%
US	70	Independent inventors	0.0%	1.4%	4.3%	5.7%
	70	Universities, research organisations	0.0%	8.6%	1.4%	21.4%
	70	Operating companies	15.7%	35.7%	18.6%	25.7%
	70	Brokers	0.0%	0.0%	0.0%	0.0%
	70	Private / Public funds	0.0%	0.0%	0.0%	0.0%
	70	Defensive aggregators	1.4%	2.9%	0.0%	1.4%
	70	Offensive aggregators	1.4%	0.0%	1.4%	0.0%
TOTAL	457	Independent inventors	2.4%	2.2%	10.9%	3.5%
	457	Universities, research organisations	1.8%	5.3%	10.1%	12.3%
	457	Operating companies	11.4%	29.8%	14.4%	20.6%
	457	Brokers	0.0%	0.2%	0.2%	0.2%
	457	Private / Public funds	0.0%	0.9%	0.2%	0.2%
	457	Defensive aggregators	0.7%	0.9%	0.0%	1.1%
	457	Offensive aggregators	0.7%	0.9%	0.2%	1.5%

Table 88: Activities as or with patent intermediaries by residence bloc – Random group (unweighted)

Random group, Cases weighted with structural weight

For each of the following entities, please indicate your activities with respect to European patents during the past 5 years						
Residence bloc	Valid	Entity	You sold to ...	You licensed to ...	You bought from ...	You licensed from ...
	WEIGHTED N		%	%	%	%
EP	204	Independent inventors	3.1%	1.0%	10.5%	1.8%
	204	Universities, research organisations	1.1%	2.6%	3.1%	3.5%
	204	Operating companies	6.2%	15.5%	7.7%	5.7%
	204	Brokers	0.0%	0.0%	0.1%	1.2%
	204	Private / Public funds	0.0%	1.5%	1.2%	1.2%
	204	Defensive aggregators	0.0%	0.1%	0.0%	1.3%
	204	Offensive aggregators	0.0%	1.3%	0.0%	0.2%
JP	30	Independent inventors	0.0%	0.0%	0.0%	0.0%
	30	Universities, research organisations	0.0%	0.4%	1.3%	0.8%
	30	Operating companies	2.9%	8.5%	2.2%	13.0%
	30	Brokers	0.0%	0.2%	0.0%	0.0%
	30	Private / Public funds	0.0%	0.0%	0.0%	0.0%
	30	Defensive aggregators	0.0%	0.0%	0.0%	0.7%
	30	Offensive aggregators	0.0%	0.0%	0.0%	0.3%
OT	62	Independent inventors	0.0%	0.0%	0.0%	0.0%
	62	Universities, research organisations	0.0%	0.0%	0.0%	0.0%
	62	Operating companies	0.2%	6.3%	0.0%	5.8%
	62	Brokers	0.0%	0.0%	0.0%	0.0%
	62	Private / Public funds	0.0%	0.0%	0.0%	0.0%
	62	Defensive aggregators	0.0%	0.0%	0.0%	0.0%
	62	Offensive aggregators	0.0%	0.2%	0.0%	0.0%
US	163	Independent inventors	0.0%	1.4%	0.5%	3.5%
	163	Universities, research organisations	0.0%	2.8%	0.4%	12.2%
	163	Operating companies	5.8%	17.6%	7.0%	7.1%
	163	Brokers	0.0%	0.0%	0.0%	0.0%
	163	Private / Public funds	0.0%	0.0%	0.0%	0.0%
	163	Defensive aggregators	0.0%	2.9%	0.0%	0.0%
	163	Offensive aggregators	0.0%	0.0%	0.0%	0.0%
TOTAL	458	Independent inventors	1.4%	0.9%	4.9%	2.0%
	458	Universities, research organisations	0.5%	2.2%	1.6%	6.0%
	458	Operating companies	5.0%	14.6%	6.0%	6.7%
	458	Brokers	0.0%	0.0%	0.0%	0.5%
	458	Private / Public funds	0.0%	0.7%	0.5%	0.5%
	458	Defensive aggregators	0.0%	1.1%	0.0%	0.6%
	458	Offensive aggregators	0.0%	0.6%	0.0%	0.1%

Table 89: Activities as or with patent intermediaries by residence bloc – Random group (weighted)

Random group, Unweighted

For each of the following entities, please indicate your activities with respect to European patents during the past 5 years						
Mega Cluster	Valid	Entity	You sold to ...	You licensed to ...	You bought from ...	You licensed from ...
	N		%	%	%	%
Electricity	154	Independent inventors	2.6%	3.9%	9.7%	2.6%
	154	Universities, research organisations	1.9%	6.5%	10.4%	9.1%
	154	Operating companies	13.6%	35.7%	13.0%	21.4%
	154	Brokers	0.0%	0.0%	0.0%	0.0%
	154	Private / Public funds	0.0%	1.3%	0.0%	0.0%
	154	Defensive aggregators	0.6%	0.6%	0.0%	1.3%
	154	Offensive aggregators	1.3%	1.3%	0.0%	2.6%
Organic Chemistry	110	Independent inventors	5.5%	6.4%	10.9%	5.5%
	110	Universities, research organisations	5.5%	11.8%	16.4%	23.6%
	110	Operating companies	15.5%	46.4%	20.9%	22.7%
	110	Brokers	0.0%	0.0%	0.0%	0.0%
	110	Private / Public funds	0.0%	3.6%	0.9%	0.9%
	110	Defensive aggregators	0.9%	0.0%	0.0%	1.8%
	110	Offensive aggregators	0.0%	0.9%	0.0%	0.0%
Inorganic Chemistry	108	Independent inventors	2.8%	4.6%	7.4%	2.8%
	108	Universities, research organisations	2.8%	5.6%	6.5%	10.2%
	108	Operating companies	16.7%	37.0%	13.9%	22.2%
	108	Brokers	0.0%	0.0%	0.0%	0.0%
	108	Private / Public funds	0.0%	1.9%	0.0%	0.0%
	108	Defensive aggregators	0.0%	1.9%	0.0%	0.9%
	108	Offensive aggregators	0.0%	0.0%	0.0%	0.0%
ICT	86	Independent inventors	3.5%	5.8%	10.5%	1.2%
	86	Universities, research organisations	2.3%	9.3%	9.3%	7.0%
	86	Operating companies	19.8%	43.0%	12.8%	23.3%
	86	Brokers	0.0%	1.2%	1.2%	0.0%
	86	Private / Public funds	0.0%	2.3%	0.0%	0.0%
	86	Defensive aggregators	3.5%	1.2%	0.0%	2.3%
	86	Offensive aggregators	2.3%	2.3%	1.2%	2.3%
Traditional	265	Independent inventors	3.4%	3.0%	13.2%	4.2%
	265	Universities, research organisations	1.9%	5.3%	11.3%	10.9%
	265	Operating companies	10.6%	27.5%	14.7%	19.2%
	265	Brokers	0.0%	0.0%	0.0%	0.4%
	265	Private / Public funds	0.0%	0.8%	0.0%	0.0%
	265	Defensive aggregators	0.4%	0.4%	0.0%	1.1%
	265	Offensive aggregators	0.0%	0.4%	0.0%	0.8%

Table 90: Activities as or with patent intermediaries in various sectors – Random group (unweighted)

Random group, Cases weighted with structural weight

For each of the following entities, please indicate your activities with respect to European patents during the past 5 years						
Mega Cluster	Valid	Entity	You sold to ...	You licensed to ...	You bought from ...	You licensed from ...
	WEIGHTED N		%	%	%	%
Electricity	128	Independent inventors	2.7%	3.2%	2.5%	4.7%
	128	Universities, research organisations	0.9%	3.3%	2.2%	2.3%
	128	Operating companies	5.7%	16.8%	2.3%	5.8%
	128	Brokers	0.0%	0.0%	0.0%	0.0%
	128	Private / Public funds	0.0%	0.4%	0.0%	0.0%
	128	Defensive aggregators	0.0%	3.2%	0.0%	0.1%
	128	Offensive aggregators	0.1%	0.2%	0.0%	0.2%
Organic Chemistry	109	Independent inventors	1.8%	3.5%	4.4%	1.6%
	109	Universities, research organisations	1.9%	5.4%	2.2%	19.5%
	109	Operating companies	11.0%	34.0%	13.9%	12.4%
	109	Brokers	0.0%	0.0%	0.0%	0.0%
	109	Private / Public funds	0.0%	2.9%	2.3%	2.3%
	109	Defensive aggregators	0.0%	0.0%	0.0%	2.3%
	109	Offensive aggregators	0.0%	2.3%	0.0%	0.0%
Inorganic Chemistry	90	Independent inventors	1.1%	4.1%	6.9%	5.6%
	90	Universities, research organisations	1.1%	4.3%	0.6%	1.9%
	90	Operating companies	8.2%	24.7%	2.5%	4.9%
	90	Brokers	0.0%	0.0%	0.0%	0.0%
	90	Private / Public funds	0.0%	0.5%	0.0%	0.0%
	90	Defensive aggregators	0.0%	4.7%	0.0%	0.1%
	90	Offensive aggregators	0.0%	0.0%	0.0%	0.0%
ICT	58	Independent inventors	0.4%	5.6%	2.2%	0.2%
	58	Universities, research organisations	0.4%	5.6%	1.2%	0.7%
	58	Operating companies	7.0%	23.5%	2.7%	5.3%
	58	Brokers	0.0%	0.1%	0.2%	0.0%
	58	Private / Public funds	0.0%	0.8%	0.0%	0.0%
	58	Defensive aggregators	0.2%	0.1%	0.0%	0.2%
	58	Offensive aggregators	0.2%	0.2%	0.1%	0.3%
Traditional	232	Independent inventors	2.7%	1.8%	5.1%	1.2%
	232	Universities, research organisations	0.8%	3.2%	1.8%	1.3%
	232	Operating companies	5.0%	13.6%	4.6%	4.1%
	232	Brokers	0.0%	0.0%	0.0%	1.1%
	232	Private / Public funds	0.0%	0.2%	0.0%	0.0%
	232	Defensive aggregators	0.0%	0.2%	0.0%	0.1%
	232	Offensive aggregators	0.0%	0.1%	0.0%	0.1%

Table 91: Activities as or with patent intermediaries in various sectors – Random group (weighted)

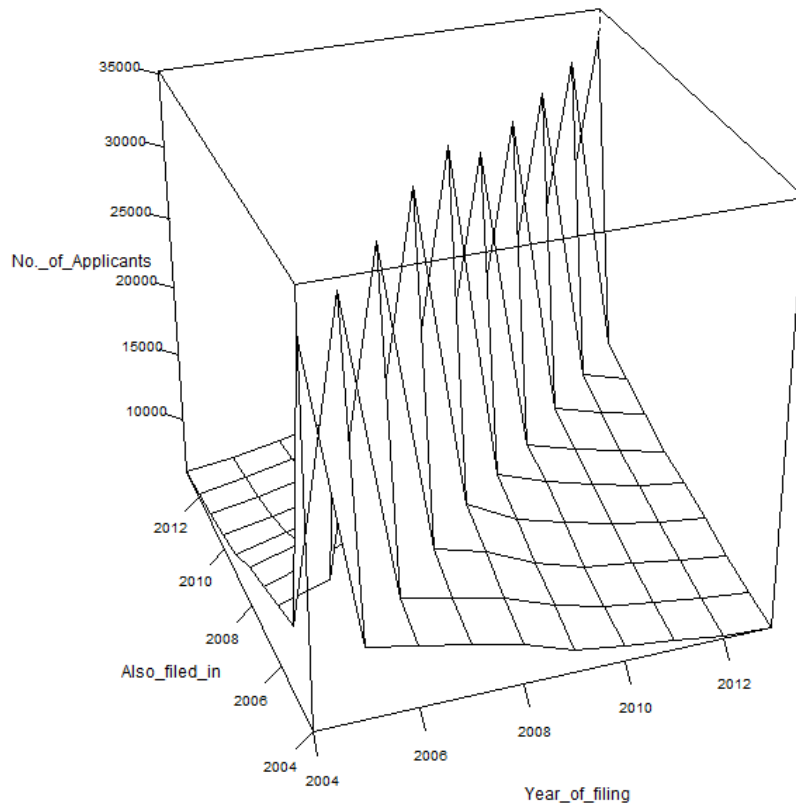
15 Annex VIII: Estimating birth & death effects in the applicant population

The method that is used to calculate correction factors was explained in Annex VIII of the 2007 survey report (with a revision in Annex X of the 2008 survey report). Euro-direct applications that can be identified as divisionals were excluded from the counts.

The calculation is shown for Total applications (ED + Euro-PCT-RP). The following table and graphic describe the carryover of all applicants (filers) from each year to all others considered in the period.²⁷ Note that these representations for applicants are symmetric. There was a peak in 2008 that was followed by a drop in 2009 and then a recovery up to 2013. But the 2013 level is back to the situation in about 2006, and the peak of 2008 has not yet been re-achieved.

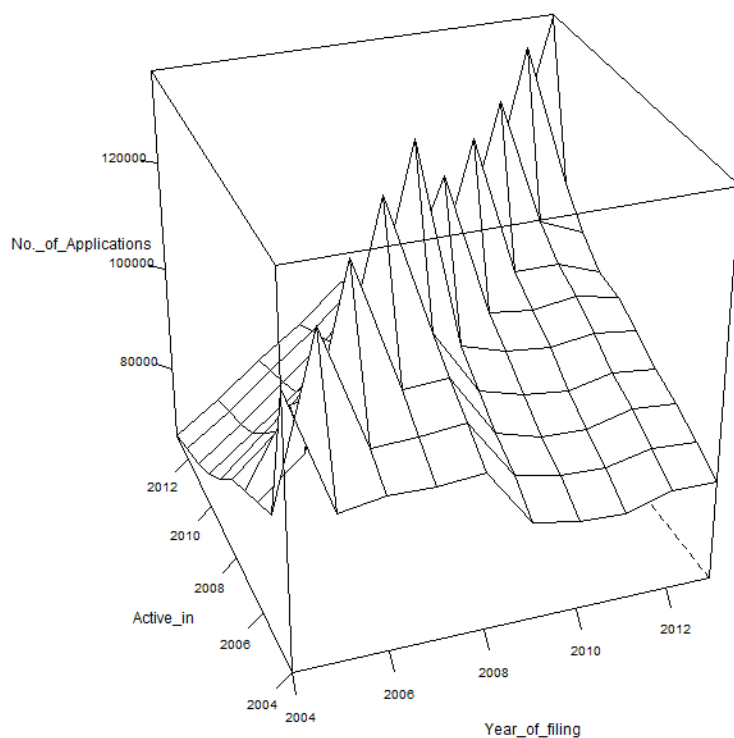
Recurrent applicants		(excluding divisionals)					Total filings (Euro-direct + Euro-PCT-RP)				
		Also filed in									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Filers in											
	2004	32 208	11 068	10 341	9 532	8 743	7 516	6 915	6 486	6 044	5 830
	2005	11 068	32 547	11 442	10 691	9 811	8 487	7 586	7 077	6 612	6 266
	2006	10 341	11 442	33 383	12 035	11 056	9 503	8 376	7 913	7 357	6 910
	2007	9 532	10 691	12 035	34 621	12 445	10 648	9 602	8 757	8 129	7 659
	2008	8 743	9 811	11 056	12 445	35 197	11 884	10 681	9 769	8 941	8 385
	2009	7 516	8 487	9 503	10 648	11 884	32 821	11 527	10 472	9 637	8 816
	2010	6 915	7 586	8 376	9 602	10 681	11 527	32 892	11 689	10 706	9 834
	2011	6 486	7 077	7 913	8 757	9 769	10 472	11 689	32 893	11 772	10 776
	2012	6 044	6 612	7 357	8 129	8 941	9 637	10 706	11 772	33 180	11 962
	2013	5 830	6 266	6 910	7 659	8 385	8 816	9 834	10 776	11 962	33 170

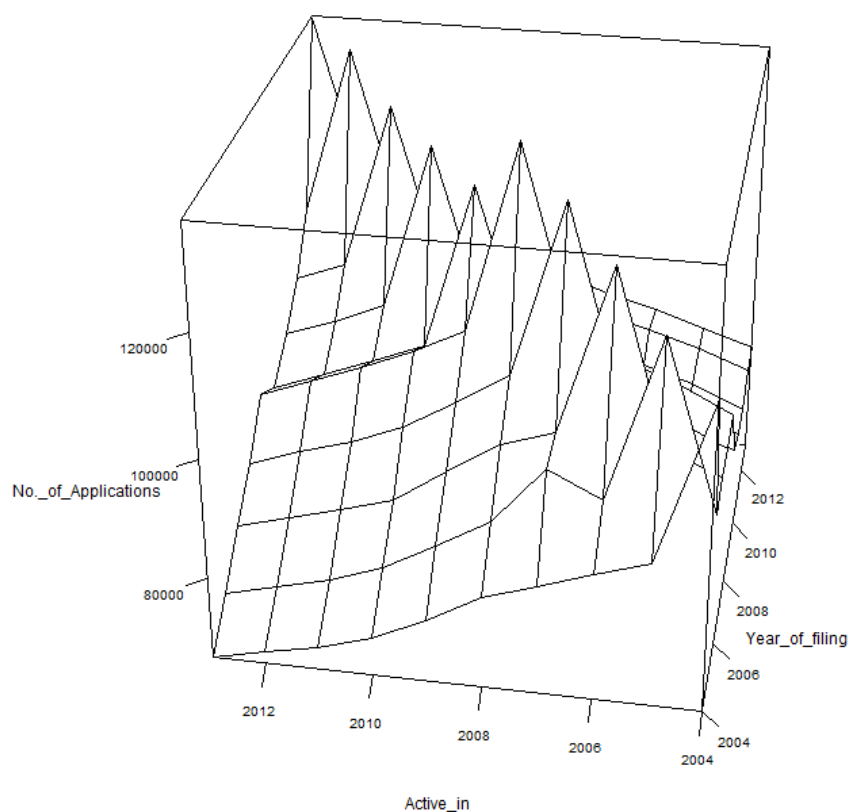
²⁷ The data in this section were extracted from the database as at the time of sampling for the survey in March 2014. Capitalised names are used as identifiers for applicant entities.



A similar table and two graphics follow to show the numbers of Total applications that were made in each case by the re-filers and pre-filers. Note that these representations are not symmetric. The recession in 2009 had a sharper effect in that year on numbers of applications than on numbers of applicants. However, the numbers of applications subsequently recovered faster than the numbers of applicants did, moving up again to the region of their 2008 peak by 2013.

Recurrent applications		(excluding divisionals)					Total filings (Euro-direct + Euro-PCT-RP)				
		Active in									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Filings in											
	2004	117 064	90 096	87 299	84 486	81 660	76 646	72 560	69 699	67 974	65 968
	2005	93 720	121 394	94 499	98 755	89 015	83 901	79 112	76 074	73 990	71 758
	2006	94 920	98 616	127 123	99 814	96 939	91 382	85 656	83 017	80 732	78 380
	2007	94 664	98 755	102 753	132 292	103 668	98 177	93 181	89 841	87 255	84 279
	2008	95 484	99 705	103 020	106 936	136 828	105 757	101 548	97 958	94 698	91 494
	2009	84 513	88 282	91 349	94 537	98 428	125 582	97 964	94 650	91 380	88 156
	2010	82 728	86 288	88 838	92 114	95 964	98 894	127 363	99 901	96 278	93 165
	2011	82 285	86 011	88 637	91 335	95 192	97 908	101 352	129 552	102 066	98 854
	2012	84 795	87 902	90 710	92 889	96 221	99 054	101 276	105 525	134 928	107 122
	2013	84 618	87 291	89 996	92 131	95 267	97 314	98 321	102 144	107 902	136 297





The following table shows the numbers of Total applications that were made by applicants in the test year who did not file in the base year.

Non-recurrent applications		(excluding divisionals)				Total filings (Euro-direct + Euro-PCT-RP)					
		Did not file in									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	2004	0	26 968	29 765	32 578	35 404	40 418	44 504	47 365	49 090	51 096
	2005	27 674	0	26 895	22 639	32 379	37 493	42 282	45 320	47 404	49 636
	2006	32 203	28 507	0	27 309	30 184	35 741	41 467	44 106	46 391	48 743
	2007	37 628	33 537	29 539	0	28 624	34 115	39 111	42 451	45 037	48 013
	2008	41 344	37 123	33 808	29 892	0	31 071	35 280	38 870	42 130	45 334
	2009	41 069	37 300	34 233	31 045	27 154	0	27 618	30 932	34 202	37 426
	2010	44 635	41 075	38 525	35 249	31 399	28 469	0	27 462	31 085	34 198
	2011	47 267	43 541	40 915	38 217	34 360	31 644	28 200	0	27 486	30 698
	2012	50 133	47 026	44 218	42 039	38 707	35 874	33 652	29 403	0	27 806
	2013	51 679	49 006	46 301	44 166	41 030	38 983	37 976	34 153	28 395	0

The modified correction factor (CF') for a future year is given as

$$CF' = \frac{(\# \text{ applications year } i+j \text{ from applicants that did not file in year } i) - ((\# \text{ applications year } i \text{ from applicants that did not file in year } i+j) \times ((\# \text{ applications in year } i+j \text{ in population})/(\# \text{ applications in year } i \text{ in population})))}{(\# \text{ applications year } i+j \text{ from applicants that did not file in year } i)}$$

In principle, these correction factors can be used to augment the filings forecasts from a survey. However, a problem is that the future CF' values are not yet known when a survey is run. Therefore, it is suggested that CF's should be used retrospectively. The most recently available one-year-ahead CF' is taken as the one-year CF' for future projection, the most recently available two-year-ahead CF' is taken as the two-year CF' for future projection, etc. The resulting set of CF's is collected in the following table (which tracks data back to survey year 2006, where available).

Correction factors CF'				
		Correction factors for Total filings (Euro-direct+Euro-PCT-RP)		
Survey Year	Base Year	Survey Year	Survey Year + 1	Survey Year + 2
2006	2005	-292		
2007	2006	343	-120	
2008	2007	1 120	8 866	812
2009	2008	792	1 320	627
2010	2009	-1 363	-1 296	-1 075
2011	2010	459	-1 441	-1 909
2012	2011	266	-266	-2 443
2013	2012	776	721	-873
2014	2013	307	1 379	-1 636

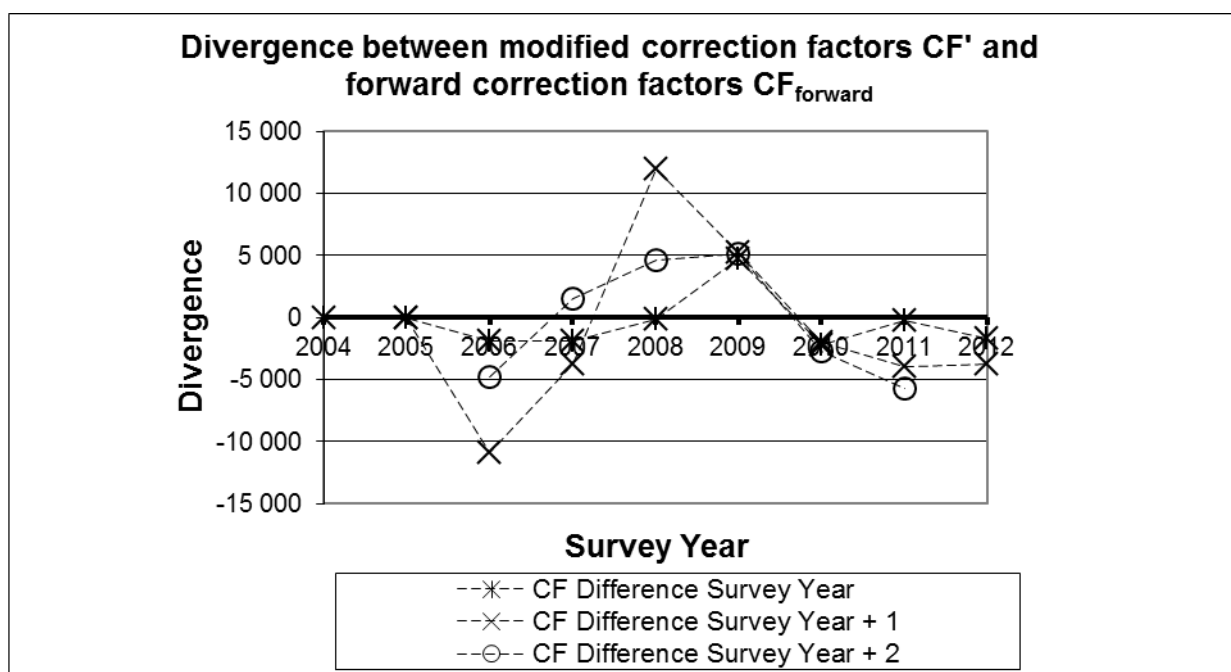
This method for creating correction factors depends on taking historical developments as a way to project into the future.

The following table calculates another kind of factor called forward correction factors, CF_{forward}, as experienced beyond base years due to the subsequent out-turns. Data is missing on this for the most recent surveys. Since the out-turns already take account of the growth of the overall numbers of applications in the population, the forward correction factors are calculated without the population growth terms.

$$CF_{\text{forward}} = \frac{(\# \text{ applications year } i+j \text{ from applicants that did not file in year } i) - (\# \text{ applications year } i \text{ from applicants that did not file in year } i+j)}{(\# \text{ applications year } i+j \text{ from applicants that did not file in year } i)}$$

Correction factors $CF_{forward}$				
		Correction factors for Total filings (Euro-direct+Euro-PCT-RP)		
Survey Year	Base Year	Survey Year	Survey Year + 1	Survey Year + 2
2006	2005	1 612	10 898	4 744
2007	2006	2 230	3 624	-1 508
2008	2007	1 268	-3 070	-3 862
2009	2008	-3 917	-3 881	-4 510
2010	2009	851	712	1 672
2011	2010	738	2 567	3 778
2012	2011	1 917	3 455	NA
2013	2012	589	NA	NA
2014	2013	NA	NA	NA

The following graph shows the divergences between the CF' values given earlier and the corresponding $CF_{forward}$ values.



The divergences are negative in the early part of the period, which means that the CF' values underestimated the balance of applications coming from new applicants compared to drop-out of old applicants. In the middle of the period, the divergences become positive, before becoming slightly negative again in the surveys from 2010 onwards.

The correction factor for the survey year is most accurate. The survey year +1 divergence was about -10 000 in 2006 and up to +10 000 in 2008. The survey year +2 divergence behaves somewhat similarly to the survey year +1 divergence, but is rather milder. The magnitude of the divergences for the survey year +1 divergence is somewhat larger than those reported last year.

The Survey year correction factor CF' can be used with some confidence even though there was a severe downturn of about 4 000 in 2009. The survey year +1 and +2 CF' values can show larger divergences and so can only be taken on trust. Due to the method of calculation, the correction factors are mostly directly applicable to the forecasts of Total applications as given in Section 6. This suggests adding 307 to the recommended forecast for 2014 to give $(147\,417 + 307 =) 147\,724$; adding 1 379 to the recommended forecast for 2015 to give $(155\,248 + 1\,379 =) 156\,627$; and subtracting 1 636 from the recommended forecast for 2016 to give $(159\,787 - 1\,636 =) 158\,151$.

As in previous years' survey reports, the correction factors can also be used to amend the Total filings forecasts if so desired. This suggests adding 307 to the recommended forecast for 2014 to give $(266\,951 + 307 =) 267\,258$, which is only 83 less than the observed out-turn for 2014 of 267 341, a forecasting error of -0.03%; adding 1 379 to the recommended forecast for 2015 to give $(275\,872 + 1\,379 =) 277\,251$; and subtracting 1 636 from the recommended forecast for 2016 to give $(283\,098 - 1\,636 =) 281\,462$.

16 Annex IX: Sizes of populations and samples for the 2014 EPO Patent Filings Survey

	Euro-applications in 2013 ^{&}					Euro-applicants in 2013 ^{§"}				
	Direct	PCT-IP [#]	Total (Direct + PCT-IP [#])	Euro-PCT- RP	Total (Direct + Euro-PCT- RP)	Direct	PCT-IP [#]	Total (Direct + PCT-IP [#])	Euro-PCT- RP	Total (Direct + Euro-PCT- RP)
1. Population in 2013*	53 051	205 268	258 319	87 377	140 428					33 170
Sample group A: Biggest										
2. Number asked [§] as percentage of 1.	28 353 53,4%	34 746 16,9%	63 099 24,4%	41 292 47,3%	69 645 49,6%	348	387	426	404	430 1,3%
Number of quantitative responses (questionnaires) as percentage of 1.	15 049 28,4%	33 892 16,5%	48 941 18,9%	15 968 18,3%	31 017 22,1%	130	141	148	134	148 0,4%
as percentage of 2.	53,1%	97,5%	77,6%	38,7%	44,5%	37,4%	36,4%	34,7%	33,2%	34,4%
Sample group B: Random										
3. Number asked [§] as percentage of 1.	30 602 57,7%	38 216 18,6%	68 818 26,6%	46 567 53,3%	77 169 55,0%	1 363	1 371	2 027	2 235	2 786 8,4%
Number of quantitative responses (questionnaires) as percentage of 1.	18 821 35,5%	41 026 20,0%	59 847 23,2%	20 149 23,1%	38 970 27,8%	438	456	578	440	579 1,7%
as percentage of 3.	61,5%	107,4%	87,0%	43,3%	50,5%	32,1%	33,3%	28,5%	19,7%	20,8%

[&] All figures exclude divisional filings.

^{*} From the EPO database (EPASYS) and WIPO web site. (Applications are status January 2015, Applicants are status March 2014).

[§] The counts of numbers asked in the samples are status March 2014.

[#] At present information on PCT-IP filings enters the data more than one year late and is therefore undercounted here.

["] Based on a list of capitalised applicant names from EPASYS at sampling time (status March 2014)

Table 92: Sizes of populations and samples for the 2014 EPO Patent Filings Survey



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