



# Statistics in focus

## SCIENCE AND TECHNOLOGY

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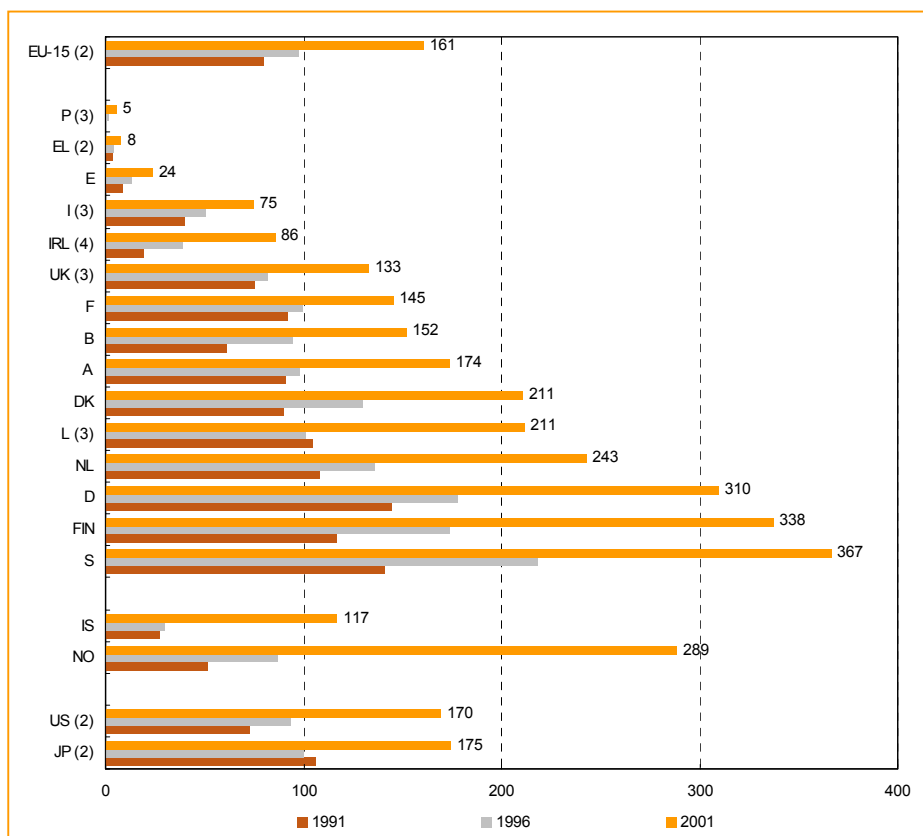


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# Patent applications to the EPO continue on an upward trend 1990 to 2001

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Figure 1: Trend of patent applications to the EPO per million inhabitants from EEA, Japan and the United States — 1991, 1996 and 2001 <sup>(1)</sup>

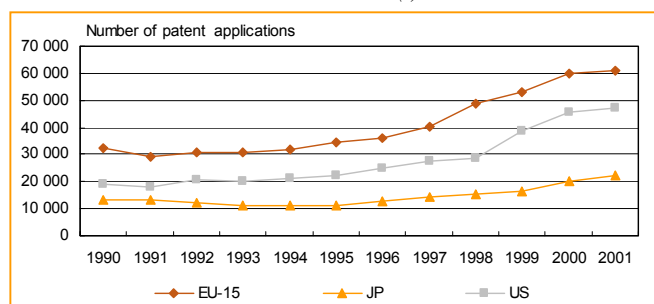


- (1) 2001: provisional data.
- (2) EU-15, EL, JP and US 2001 population data: Eurostat estimation.
- (3) I, L, P and UK 2001 population data: national estimation.
- (4) IRL 2001 population data: provisional data.

- In 2001, the European Patent Office — EPO — filed 60 890 patent applications from EU-15, 47 202 from the United States and 22 226 from Japan. As a proportion of the population, Japan recorded the highest ratio — 175 patent applications per million inhabitants, followed by the US (170) and the EU (161).
- Although patent applications to the EPO from the candidate countries are below the EU average, some of them show ratios per million inhabitants above some of the Member States.
- Within the EU and in absolute terms, Germany continues to account for the largest proportion of total EU patent applications to the EPO (41.9 %). However, when taking population into consideration, Sweden and Finland recorded the highest rates.
- In 2001, the European region that applied for most patents to the EPO was Île de France (3 423). However, in relative terms, Oberbayern was ahead (824 patent applications per million inhabitants).
- Concerning patent applications in high tech fields, with 342 applications per million inhabitants, Noord-Brabant (NL) led, followed by Uusimaa (FIN) with 286.

## Patent applications to the EPO from European countries, Japan and the US continue on an upward trend, especially in the high tech fields

Figure 2: Trend of patent applications to the EPO from EU-15, Japan and the United States 1990 to 2001 <sup>(1)</sup>



(1) 2001: provisional data.

In 2001, EU Member States applied for 60 890 patents to the EPO, 68.3 % more than in 1996. Patent applications to the EPO from Japan and the US in 2001 amounted to 22 226 and 47 202 respectively. These represented 75.8 and 90.2 % more than their corresponding values in 1996, showing that the upward trend that patent applications to the EPO have followed during the last decade continues (Figure 2).

When taking population into account, the highest ratio was registered for Japan — 175 patent applications per million inhabitants, followed by the US (170) and the EU (161).

At the Member State level, Germany leads in absolute terms with 41.9 % of total applications from the EU. However, in relative terms it is overtaken by both Sweden and Finland (Table 1).

Table 1: Patent applications to the EPO from the EEA, candidate countries, Japan, the Russian Federation and the US in 2001 <sup>(1)</sup>

	Total number	Per million inhabitants	Distribution by IPC section in % (6)							
			A	B	C	D	E	F	G	H
<b>EU-15 (2)</b>	<b>60 890</b>	<b>161</b>	<b>15.0</b>	<b>19.4</b>	<b>14.3</b>	<b>1.9</b>	<b>4.2</b>	<b>9.8</b>	<b>16.7</b>	<b>18.8</b>
<b>EUR-12 (2)</b>	<b>48 516</b>	<b>160</b>	<b>14.2</b>	<b>20.8</b>	<b>14.4</b>	<b>1.9</b>	<b>4.2</b>	<b>10.4</b>	<b>15.5</b>	<b>18.5</b>
B	1 558	152	14.9	18.5	28.5	3.1	3.8	6.1	13.6	11.4
DK	1 129	211	24.1	13.0	18.4	1.1	4.6	8.7	16.1	14.1
D	25 489	310	11.7	22.3	14.8	1.7	4.1	12.6	15.4	17.4
EL (2)	82	8	22.8	16.1	11.7	-	4.3	11.0	15.3	18.7
E	967	24	23.3	22.4	14.7	2.1	5.9	7.9	11.6	12.2
F	8 580	145	18.3	19.0	13.9	1.1	3.7	8.1	16.9	18.9
IRL (4)	327	86	21.5	13.4	8.7	0.2	3.9	3.7	25.9	22.6
I (3)	4 318	75	21.1	27.1	11.3	3.4	5.5	11.2	9.7	10.8
L (3)	93	211	2.8	28.4	21.5	-	9.1	21.4	8.7	8.0
NL	3 881	243	13.5	12.3	14.6	0.8	3.1	4.7	22.4	28.8
A	1 414	174	13.6	22.2	14.6	2.3	9.1	11.4	11.6	15.1
P (3)	56	5	24.1	20.2	22.6	1.2	8.4	11.9	5.3	6.2
FIN	1 750	338	7.8	13.9	6.8	7.6	2.7	5.0	15.5	40.6
S	3 256	367	15.8	17.6	7.6	2.7	2.9	8.9	17.3	27.3
UK (3)	7 989	133	18.1	12.6	15.7	1.2	4.7	6.3	23.4	18.1
<b>EEA (2)</b>	<b>62 259</b>	<b>163</b>	<b>15.1</b>	<b>19.4</b>	<b>14.2</b>	<b>1.8</b>	<b>4.3</b>	<b>9.8</b>	<b>16.7</b>	<b>18.7</b>
IS	33	117	53.8	4.5	17.7	-	-	-	13.5	10.5
LI (3)	36	1 080	29.4	27.5	14.9	-	7.0	11.2	3.6	6.3
NO	1 300	289	20.8	16.2	11.2	0.4	11.7	10.4	17.8	11.4
<b>ACC (5)</b>	<b>568</b>	<b>8</b>	<b>24.3</b>	<b>13.0</b>	<b>15.7</b>	<b>2.0</b>	<b>4.1</b>	<b>9.0</b>	<b>16.3</b>	<b>15.6</b>
BG	17	2	37.3	17.7	5.8	-	-	17.6	21.6	-
CY	11	14	45.4	9.1	18.2	-	-	-	9.1	18.2
CZ	110	11	17.6	24.3	15.3	8.2	3.6	11.4	12.4	7.2
EE (4)	15	11	23.4	6.6	10.0	-	-	13.3	40.1	6.7
HU (2)	190	19	24.3	8.3	13.0	-	3.2	4.9	24.2	22.1
LT	9	2	26.7	-	51.1	-	-	-	22.2	-
LV	18	8	37.3	9.2	38.1	-	4.2	5.6	5.6	-
PL	97	3	23.7	17.0	12.3	1.9	7.2	14.2	12.6	11.1
RO	17	1	8.8	23.5	17.7	-	7.4	11.8	1.5	29.4
SI	81	41	29.8	8.1	17.4	0.6	6.8	6.2	8.5	22.6
SK	33	6	23.0	14.6	19.9	-	-	16.7	6.1	19.7
MT	4	10	8.3	-	-	-	-	50.1	41.6	-
TR (2)	72	1	30.6	4.2	7.6	10.4	3.5	17.4	11.1	15.3
JP (2)	22 226	175	9.4	14.8	15.7	1.2	0.7	7.7	24.0	26.4
RU (2)	477	3	16.4	13.6	19.3	0.5	2.3	11.0	22.0	15.0
US (2)	47 202	170	18.1	11.3	18.2	1.0	1.6	4.6	25.5	19.6

(1) 2001: provisional data.

(2) EU-15, EUR-12, EEA, EL, HU, TR, JP, RU and US 2001 population data: Eurostat estimations.

(3) I, L, P, UK and LI 2001 population data: national estimation.

(4) IRL and EE 2001 population data: provisional data.

(5) Acceding Countries: CY, CZ, EE, HU, LV, LT, MT, PL, SK and SI.

(6) See abbreviations in page 7.

In 2001, most patents from the EU were applied for in the 'Performing operations; transporting' section, whereas Japan specialised in 'Electricity' and the US in 'Physics'. At the Member State level, the distribution across *International Patent Classification* — IPC — sections varied between countries (See Table 1).

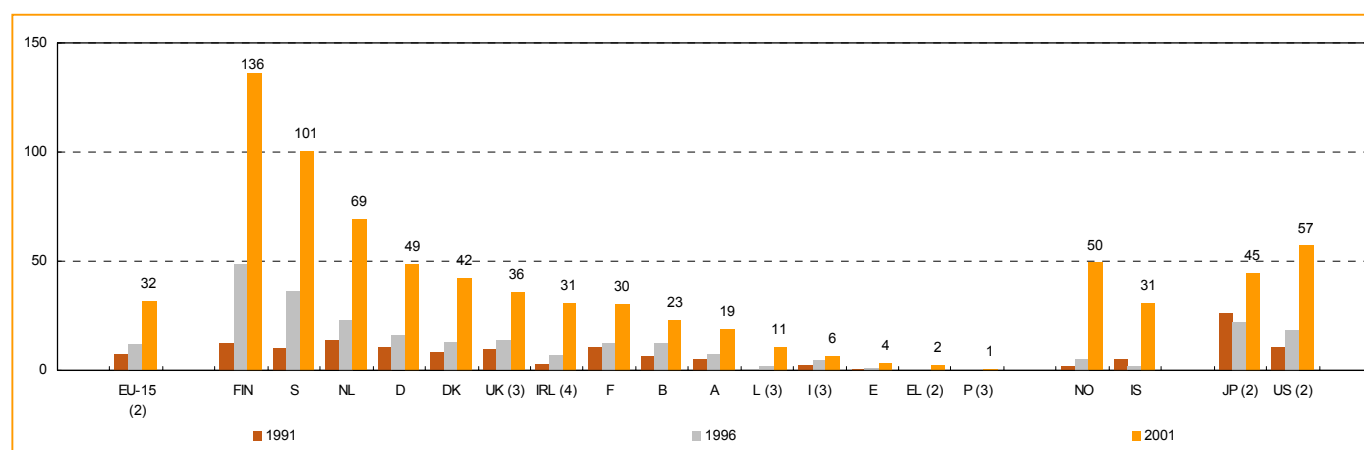
Although, overall, candidate countries are still lagging behind the EU, in 2001 seven of them registered ratios per million inhabitants above those of Portugal or Greece.

In terms of patent applications in the high tech fields, the highest ratio per million inhabitants at the international level

was registered by the US (57) followed by Japan (45) and the EU (32). Within the EU, Finland leads (136), followed by Sweden (101) and the Netherlands (69), all of which were above the US average (Figure 3). The country with the highest proportion of high tech patent applications in total applications in 2001 was Finland (40.3 % of the total).

Concerning the distribution by high technology group, most applications were made in 'Communication Technology'. However, 'Computer and automated business equipment' was the most important high tech group for Greece, Luxembourg and the United States, whereas 'Micro-organism and genetic engineering' was the largest for Denmark and Portugal.

Figure 3: Evolution of high tech patent applications to the EPO per million inhabitants — 1991, 1996 and 2001 <sup>(1)</sup>



(1) 2001: provisional data.

(2) EU-15, EL, JP and US 2001 population data: Eurostat estimations.

(3) I, L, P and UK 2001 population data: national estimation.

(4) IRL 2001 population data: provisional data.

Table 2: High tech patent applications to the EPO from EEA, Japan and the United States in 2001 <sup>(1)</sup>

	Total high tech		Distribution by high tech group in %						% of total applications
	Total number	Per million inhabitants	AVI	CAB	CTE	LSR	MGE	SMC	
<b>EU-15 (2)</b>	<b>11 928</b>	<b>31.6</b>	<b>1.2</b>	<b>28.5</b>	<b>47.1</b>	<b>1.4</b>	<b>13.0</b>	<b>8.9</b>	<b>19.6</b>
<b>EUR-12 (2)</b>	<b>8 673</b>	<b>28.5</b>	<b>1.4</b>	<b>26.2</b>	<b>47.4</b>	<b>1.3</b>	<b>12.9</b>	<b>10.9</b>	<b>17.9</b>
B	240	23.4	0.6	26.6	34.5	1.3	21.0	16.1	15.4
DK	225	42.1	0.2	26.8	33.6	0.9	36.5	2.0	19.9
D	4 017	48.8	1.7	24.6	42.6	1.7	15.1	14.3	15.8
EL (2)	22	2.1	2.3	45.4	29.0	-	9.8	13.6	27.0
E	143	3.6	2.1	30.2	38.6	-	25.0	4.1	14.8
F	1 791	30.3	2.3	31.4	46.0	1.4	11.8	7.1	20.9
IRL (4)	117	30.7	0.9	41.9	44.7	1.5	8.4	2.7	35.9
I (3)	374	6.5	0.5	30.0	43.4	2.5	13.1	10.6	8.7
L (3)	5	10.9	2.7	52.2	38.2	-	6.9	-	5.1
NL	1 100	68.8	0.2	26.7	52.8	0.1	9.3	10.8	28.3
A	152	18.8	1.3	25.5	39.4	2.0	16.9	14.9	10.8
P (3)	7	0.7	-	21.7	19.1	-	44.9	14.3	12.3
FIN	705	136.1	-	15.3	80.5	0.1	3.4	0.8	40.3
S	896	100.9	0.9	26.9	60.5	1.2	6.9	3.5	27.5
UK (3)	2 134	35.6	0.9	38.6	41.7	1.9	13.1	3.9	26.7
<b>EEA (2)</b>	<b>12 160</b>	<b>31.8</b>	<b>1.2</b>	<b>28.7</b>	<b>47.0</b>	<b>1.4</b>	<b>13.0</b>	<b>8.7</b>	<b>19.5</b>
IS	9	31.0	-	22.6	28.4	-	37.5	11.4	26.5
LI (3)	-	-	-	-	-	-	-	-	-
NO	223	49.6	1.1	38.8	43.0	1.8	14.3	0.9	17.2
JP (2)	5 707	44.9	0.3	35.0	38.1	2.3	8.4	15.9	25.7
US (2)	15 839	57.0	0.8	41.5	30.8	1.5	17.0	8.4	33.6

(1) 2001: provisional data.

(2) EU-15, EUR-12, EEA, EL, JP and US 2001 population data: Eurostat estimations.

(3) I, L, P, UK and LI 2001 population data: national estimation.

(4) IRL 2001 population data: provisional data.

## Oberbayern leads in total patents as does Noord-Brabant in the high technology fields

Table 3 shows the top three patenting regions of each Member State in absolute terms in 2001. It provides details on the total number of applications to the EPO, their ratio per million inhabitants and their corresponding distribution by IPC section. It can be seen that German regions lead in absolute terms, as even the third region in this country is above the top regions of the rest of the Member States — with the exception of the French capital region of Île de France (F) and the Dutch region of Noord-Brabant.

Concerning the distribution by IPC section, leading regions are most specialised in 'Electricity' (Section H) and in 'Performing operations; transporting' (Section B), being therefore in line with the distribution for the EU average. The specialisation in the 'Electricity' section is most evident for the leading regions of Finland, Sweden and the UK.

When taking population into account, the German region of Oberbayern leads, with 824 patent applications per million inhabitants, closely followed by Noord-Brabant in the Netherlands with 822 (Table 4).

*Table 3: Top three regions of each Member State  
in terms of the total number of patent applications to the EPO — 2001 <sup>(1)</sup>*

Ranking in relative terms	Country	NUTS 2 region	Total number	Per million inhabitants	Distribution by IPC section in %							
					A	B	C	D	E	F	G	H
<b>EU-15</b>			<b>60 890</b>	<b>161</b>	<b>15.0</b>	<b>19.4</b>	<b>14.3</b>	<b>1.9</b>	<b>4.2</b>	<b>9.8</b>	<b>16.7</b>	<b>18.8</b>
50	B	Antwerpen	334	203	11.8	22.6	21.0	1.1	2.5	6.2	20.7	14.1
35		Vlaams Brabant	242	238	13.7	12.7	37.4	1.8	2.5	1.8	13.5	16.6
83		Oost-Vlaanderen	174	127	20.9	13.2	22.3	2.3	3.1	3.8	16.8	17.7
46	DK	Denmark	1 129	212	24.1	13.0	18.4	1.1	4.6	8.7	16.1	14.1
1	D	Oberbayern	3 325	824	8.6	15.8	7.6	0.5	2.0	9.2	23.8	32.3
3		Stuttgart	2 817	719	4.0	25.7	3.5	1.8	3.4	27.3	16.3	18.1
9		Darmstadt	1 825	491	16.8	21.3	29.3	1.8	2.5	7.8	9.9	10.6
172	EL	Attiki	44	13	18.9	24.0	15.6	0.0	8.0	3.4	8.5	21.5
178		Kentriki Makedonia	18	10	22.5	0.0	0.7	0.0	0.0	22.5	34.5	19.9
174		Kriti	7	12	53.8	15.1	11.1	0.0	0.0	0.0	0.0	20.0
142	E	Cataluna	382	62	23.9	26.2	13.2	4.0	4.7	5.5	10.9	11.6
162		Comunidad de Madrid	187	36	19.0	16.3	19.0	0.0	3.5	4.5	16.7	20.9
167		Comunidad Valenciana	104	26	23.6	15.4	24.3	2.4	10.1	5.2	11.9	7.1
26	F	Ile de France	3 423	312	18.8	15.7	12.1	0.3	2.9	9.7	19.3	21.3
31		Rhône-Alpes	1 383	244	18.9	16.5	18.6	2.4	3.0	6.6	15.9	18.2
92		Provence-Alpes-Côte d'Azur	516	114	15.8	11.0	12.4	0.1	2.5	3.3	35.2	19.7
107	IRL	Southern and Eastern	262	94	17.7	12.1	10.7	0.1	4.5	4.1	29.9	20.8
135		Border, Midlands and Western	65	66	36.9	18.7	0.8	0.5	1.5	1.9	9.8	29.9
59	I	Lombardia	1 528	169	20.1	22.4	14.3	4.8	4.8	9.6	10.1	13.9
56		Emilia-Romagna	703	177	19.1	45.0	7.5	1.1	5.9	11.3	6.0	4.1
95		Veneto	496	110	29.3	22.7	7.6	3.1	7.3	12.0	8.8	9.1
44	LU	Luxembourg	93	214	2.8	28.4	21.5	0.0	9.1	21.4	8.7	8.0
2	NL	Noord-Brabant	1 937	822	6.0	6.0	4.3	0.4	0.6	2.6	32.4	47.7
69		Zuid-Holland	509	150	26.6	14.0	22.3	1.1	9.3	4.6	14.4	7.7
74		Noord-Holland	354	140	16.3	22.7	27.9	0.7	5.3	4.9	14.3	7.8
49	A	Oberösterreich	283	205	7.8	32.7	17.9	3.7	9.2	17.4	6.3	5.1
67		Wien	251	156	19.7	15.2	14.9	0.7	4.9	2.1	21.2	21.1
53		Steiermark	221	184	7.5	26.3	19.2	3.6	8.0	9.0	10.2	16.2
186	P	Lisboa e Vale do Tejo	23	7	41.2	7.4	25.3	0.0	3.3	10.3	2.2	10.2
188		Norte	21	6	19.4	34.8	26.7	3.1	0.0	5.1	5.3	5.7
187		Centro (P)	11	6	1.5	11.8	11.9	0.0	35.8	29.9	9.0	0.0
5	FIN	Uusimaa (Suuralue)	803	582	8.7	10.7	8.7	7.7	1.6	2.8	15.1	44.7
23		Etelä-Suomi	597	328	6.7	18.6	6.1	6.8	3.2	5.4	17.4	35.8
25		Pohjois-Suomi	180	323	8.4	10.2	2.7	1.7	1.3	3.6	12.9	59.2
4	S	Stockholm	1 101	610	14.3	9.8	7.2	1.1	1.9	5.6	18.9	41.1
21		Västsverige	605	343	22.6	23.3	6.9	4.7	3.2	13.0	12.4	13.9
14		Sydsverige	555	435	15.4	18.4	8.0	1.4	3.2	7.4	22.1	24.1
20	UK	East Anglia	784	356	11.7	9.0	14.1	0.4	2.9	3.4	26.2	32.3
18		Berkshire, Bucks and Oxfordshire	764	360	17.6	10.6	19.4	0.6	1.6	4.4	28.7	17.2
34		Gloucestershire, Wiltshire and North Somerset	522	239	12.9	12.6	5.7	2.3	3.5	4.5	28.0	30.5

(1) 2001: provisional data.

2001 population data for all regions — with the exception of those in Spain: Eurostat estimations.

Table 4: Top fifteen patenting regions in the EU in relative terms — 2001 <sup>(1)</sup>

Ranking	Country	NUTS 2 region	Patent applications	
			Per million inhabitants	Total number
1	D	Oberbayern	824	3 325
2	NL	Noord-Brabant	822	1 937
3	D	Stuttgart	719	2 817
4	S	Stockholm	610	1 101
5	FIN	Uusimaa (Suuralue)	582	803
6	D	Mittelfranken	518	872
7	D	Rheinhesen-Pfalz	494	990
8	D	Karlsruhe	493	1 319
9	D	Darmstadt	491	1 825
10	D	Tübingen	481	845
11	D	Freiburg	474	1 008
12	A	Niederösterreich	453	158
13	B	Brabant Wallon	448	157
14	S	Sydsverige	435	555
15	D	Köln	395	1 684
<b>EU-15</b>			<b>161</b>	<b>60 890</b>

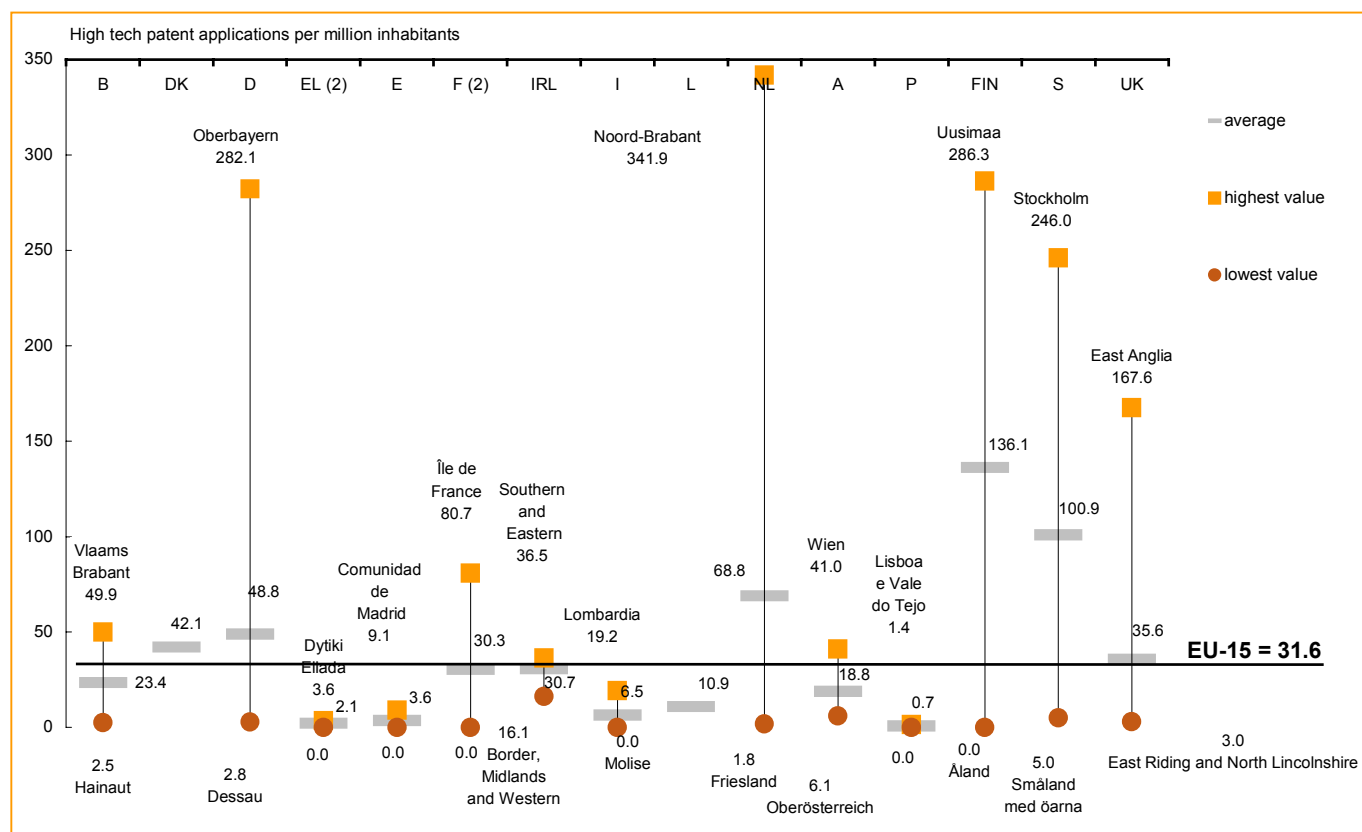
(1) 2001: provisional data.

2001 population data for all regions — with the exception of those in Spain: Eurostat estimations.

Figure 4 shows the regional distribution of high tech patenting in the EU, by mapping the national averages and the regional extremes at the NUTS 2 level. It can be seen that in 2001, 10 EU countries had at least one region above the EU average: Vlaams Brabant (B), Denmark, Oberbayern (D), Île de France (F), Southern and Eastern (IRL), Noord-Brabant (NL), Wien (A), Uusimaa (FIN), Stockholm (S) and East Anglia (UK). Germany, the Netherlands, Finland, Sweden and the UK are the countries with greatest regional disparities. The most obvious case is that of the Netherlands, where the highest region registered 341.9 high tech patent applications per million inhabitants (Noord-Brabant) and the lowest applied only for 1.8 (Friesland).

Although the increasing trend of patenting in high technology fields is obvious across Europe, the case of Noord-Brabant is outstanding. During the 1996-2001 period, high tech patent applications from this region grew at an annual average growth rate of 33.7 %, which has led Noord-Brabant to the leading position in the EU for the year 2001.

Figure 4: High tech patent applications to the EPO per million inhabitants in the EU National averages and regional extremes at NUTS 2 level in 2001 <sup>(1)</sup>



(1) 2001: provisional data.

(2) 2001 population data for all regions — with the exception of those in Spain: Eurostat estimations.

(3) For EL, E, F and P, the regions with lowest value are various.

For all of them, the number of high tech patent applications per million inhabitants in 2000 was equal to zero.

These regions were:

- EL: Dytiki Makedonia, Ipeiros, Anatoliki Makedonia - Thraki, Thessalia, Ionia Nisia, Sterea Ellada, Voreio Aigaio;
- E: Cantabria, La Rioja, Castilla-la Mancha, Extremadura, Ceuta y Melilla;
- F: Corse, Martinique, Guadeloupe, French Guiana, Reunion;
- P: Alentejo, Algarve, Acores, Madeira.

Table 5: Top fifteen high tech patenting regions in the EU in relative terms— 2001 <sup>(1)</sup>

Ranking	Country	NUTS 2 region	High tech patent applications	
			Per million inhabitants	Total number
1	NL	Noord-Brabant	342	805
2	FIN	Uusimaa (Suuralue)	286	395
3	D	Oberbayern	282	1 138
4	S	Stockholm	246	444
5	UK	East Anglia	168	369
6	FIN	Pohjois-Suomi	151	84
7	UK	Hampshire and Isle of Wight	145	258
8	S	Sydsverige	142	181
9	FIN	Etelä-Suomi	112	204
10	D	Mittelfranken	104	175
11	UK	Berkshire, Bucks and Oxfordshire	101	214
12	D	Stuttgart	95	371
13	UK	Gloucestershire, Wiltshire and North Somerset	94	206
14	F	Ile de France	81	886
15	S	Östra Mellansverige	80	119
<b>EU-15</b>			<b>32</b>	<b>11 928</b>

(1) 2001: provisional data.

2001 population data for all regions — with the exception of those in Spain: Eurostat estimations.

As shown in Table 5, following Noord-Brabant (342 high tech patent applications per million inhabitants) were Uusimaa in Finland (286) and Oberbayern in Germany (282).

Table 6 provides data on the regions with the highest and lowest growth in high tech patenting for the 1996-2001 period (please note that only the regions with a ratio to population at least equal to the EU average have been taken into account). The fastest growing region in the EU is Västsverige in Sweden, which grew at an annual average growth rate of 50.4 % during the 1996-2001 period.

The distribution of high tech patenting across high tech groups in the leading high tech patenting regions in absolute terms is shown in Table 7. 'Communication technology' was the largest high technology field for all the top European patenting regions in 2001 except for Rhône-Alpes in France, where most high tech patents were applied for in the field of 'Computer and automated business equipment'. The specialisation in the 'Communication technology' field is noteworthy in the Finnish region of Uusimaa (80 % of the total).

Table 6: Regions with highest and lowest growth <sup>(1)</sup> in high tech patent applications to the EPO — 1996-2001 <sup>(2)</sup>

Country	NUTS 2 region	Total number 2001	AAGR (3) 1996-2001 in %	Country	NUTS 2 region	Total number 2001	AAGR 1996-2001 in %
S	Västsverige	85	50.4	D	Hannover	105	16.2
D	Detmold	106	49.5	B	Vlaams Brabant	51	14.5
D	Braunschweig	70	40.0	A	Wien	66	14.1
F	Bretagne	158	36.6	NL	Utrecht	39	13.7
NL	Noord-Brabant	805	33.7	UK	Bedfordshire, Hertfordshire	74	13.0
IRL	Southern and Eastern	101	33.6	FIN	Pohjois-Suomi	84	11.3
UK	Hampshire and Isle of Wight	258	33.4	D	Freiburg	98	9.6
S	Övre Norrland	40	31.3	UK	Surrey, East and West Sussex	103	8.6
F	Provence-Alpes-Côte d'Azur	199	31.2	B	Antwerpen	62	5.8
UK	Inner London	202	30.0	B	Région Bruxelles-capitale	30	5.5

(1) With a ratio of high tech patent applications per million inhabitants at least equal to the EU average (31.6).

(2) 2001 provisional data.

(3) AAGR: Annual average growth rate.

Table 7: Distribution of high tech patent applications to the EPO by high tech group in the top European regions in absolute terms — 2001 <sup>(1)</sup>

Ranking	Country	NUTS 2 region	High tech group in %						Total number
			AVI	CAB	CTE	LSR	MGE	SMC	
1	D	Oberbayern	1.3	26.5	47.8	1.6	6.2	16.5	1 138
2	F	Ile de France	1.6	27.8	53.4	2.2	10.9	4.2	886
3	NL	Noord-Brabant	0.0	27.6	57.7	0.1	1.0	13.5	805
4	S	Stockholm	0.3	21.6	68.1	1.6	5.1	3.3	444
5	FIN	Uusimaa (Suuralue)	0.0	15.4	80.0	0.0	3.5	1.1	395
6	D	Stuttgart	1.1	28.4	52.2	3.7	5.5	9.2	371
7	UK	East Anglia	0.1	31.0	45.6	3.8	13.2	6.3	369
8	UK	Hampshire and Isle of Wight	0.0	43.1	48.4	2.6	1.2	4.7	258
9	F	Rhône-Alpes	0.0	35.6	29.0	0.6	14.4	20.3	240
10	D	Köln	0.5	23.8	44.3	0.0	23.3	8.2	233
<b>EU-15</b>			<b>1.2</b>	<b>28.5</b>	<b>47.1</b>	<b>1.4</b>	<b>13.0</b>	<b>8.9</b>	<b>11 928</b>

(1) 2001: provisional data.

2001 population data for all regions — with the exception of those in Spain: Eurostat estimations.

## ➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

### Eurostat's patents database

A patent is a legal title of industrial property granting its owner the exclusive right to exploit an invention commercially for a limited area and time. The patent confers on its owner the right to stop others from, among other things, making, using or selling such an invention without authorisation. In return for the exclusive right to exploit it, the technical details of the invention are published.

The three criteria that qualify an invention as subject to be patented are its novelty, utility and inventiveness, which are ultimately the grounds for the fundamental hypothesis that a patent represents a codification of inventive activity. It is on the basis of this hypothesis that patent statistics are used to build up indicators of R&D output.

Eurostat's patent database contains two collections of statistical data that describe the EU (PAT\_EU) and US (PAT\_US) patenting systems respectively. Each collection originates from a different source and the methodologies used for processing the data are not the same. EPO data refer to patent applications by year of filing, whereas United States Patent and Trademark Office — USPTO — data refer to patents granted by year of publication.

All the data presented in this SIF originate from Eurostat's PAT\_EU database, which is maintained in close co-operation with the European Patent Office — EPO <sup>(1)</sup>. Every year the EPO supplies Eurostat with the latest available data, which are then processed to derive the regional and national indicators. Detailed series of patent data can be obtained from Eurostat's reference database *NewCronos*; Theme 9; Domain: Patents.

The database contains data at the national and regional levels, with regional data available at the NUTS <sup>(2)</sup> levels 1, 2 and 3. Both databases contain data on total patent applications and patent applications in the high technology fields.

Data in the PAT\_EU database are given broken down according to the International Patent Classification — IPC, which assigns an invention to an IPC-class according to its function or intrinsic nature or its field of application <sup>(3)</sup>. The database covers the period 1989 to 2001, 2001 data being provisional. At times, provisional data may show a slight decrease in the number of patent applications to the EPO compared to the previous years. This could be explained by the fact that for the *Patent Co-operation Treaty* — PCT — applications, the data on the country of residence of the applicant(s) and/or the inventor(s) is imputed into the EPO database only after their international publication. This means that data are only final 18 months after the priority date — See below. Therefore, 2001 final data will only be available after August 2003.

Different criteria can be chosen to count patents. Depending on the options made, the obtained indicators have different value and different meaning. The criteria used by Eurostat for the data extraction from the EPO refer especially to the regional potential for innovation and are defined as follows:

- **Type of patents covered:** Data in the PAT\_EU database refer to applications filed directly under the European Patent Convention <sup>(4)</sup> or to applications filed under the Patent Co-operation Treaty <sup>(5)</sup> and designating the EPO (Euro-PCT).
- **Reference year:** Patent applications are counted according to the year in which they were filed at the EPO, since this is closer to the date invention than the year in which they were published is. Although the closest date to invention is the priority year, i.e. the year in which the patent was first applied for at any patent office, no complete data are available for the most recent years. In an effort to provide timely and comprehensive data, year of filing has been chosen over year of priority.
- **Geographical assignment of the patent:** To get an indication of the regional potential for innovation within the EU, the regional distribution of patent applications is assigned according to the inventor's place of residence, following the methodological recommendations given in *The Regional Dimension of R&D and Innovation Statistics — Regional Manual*. If one application has more than one inventor, the application is divided equally among all of them and subsequently among their regions, thus avoiding double counting.

- **Assignment to the IPC codes:** If a patent is assigned to more than one IPC code, the application is equally divided among all the IPC-subclasses (fractional counting). This approach avoids double counting.
- **High tech patent applications:** The definition of high tech followed by Eurostat is that of the Trilateral Statistical Report, a joint publication of the EPO, the Japanese Patent Office — JPO — and the USPTO. Here, the following technical fields are defined as high technology: computer and automated business equipment; micro-organism and genetic engineering; aviation; communication technology; semi-conductors; lasers. Each group is constructed by aggregating a list of IPC subclasses.

Calculations for EEA normally include Liechtenstein. However, this country is excluded whenever reference data are not available.

For further information on definitions and explanatory notes see metadata in Eurostat's reference database *NewCronos*; Theme 9; Domain: Patents.

### Statistical abbreviations and symbols

:	not available
-	not applicable or real zero
p	provisional data
e	estimated value
s	Eurostat estimate.

### IPC Sections

Section A:	Human necessities
Section B:	Performing operations; transporting
Section C:	Chemistry; metallurgy
Section D:	Textiles; paper
Section E:	Fixed constructions
Section F:	Mechanical engineering; lighting; heating; weapons; blasting
Section G:	Physics
Section H:	Electricity.

### High technology groups

AVI	Aviation
CAB	Computer and automated business equipment
CTE	Communication technology
LSR	Lasers
MGE	Micro-organism and genetic engineering
SMC	Semi-conductors.

<sup>(1)</sup> See EPO's web site at <http://www.epo.org>.

<sup>(2)</sup> For further details refer to 'Regions, Nomenclature Territorial Units for Statistics NUTS', Eurostat, 1998.

<sup>(3)</sup> For further detail on the IPC classification visit the WIPO's web site at <http://www.wipo.int>.

<sup>(4)</sup> European Patent Convention, signed in Munich in October 1973.

<sup>(5)</sup> Patent Co-operation Treaty, signed in Washington on June 1970.

# Further information:

## ➤ Reference publications

Title Statistics on Science and Technology, 2002 edition  
(forthcoming)  
Catalogue No KS-CT-02-001-EN-C Price EUR 29.50

## ➤ Databases

New Cronos, Theme 9  
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