

Table SINV-9

International patent families granted in digital communication, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	4,779	6,275	6,629	6,437	6,670	8,573	10,652	10,062	13,952	14,399	14,332	16,406	18,854	22,928	26,507	27,322	31,409	32,313	35,346	37,806	42,528	52,023	54,137
North America	na	1,423	1,707	1,978	1,982	2,159	2,608	3,252	2,712	3,235	2,899	3,085	3,310	3,986	3,947	4,889	5,298	6,779	7,582	7,906	7,983	7,925	9,230	9,272
Canada	High	65	109	123	132	129	169	207	160	234	256	292	325	328	352	413	495	602	559	508	477	457	538	510
Mexico	Upper middle	0	1	1	2	2	2	2	3	0	0	1	0	2	0	1	1	2	4	5	8	9	7	7
United States	High	1,358	1,597	1,854	1,848	2,028	2,438	3,043	2,549	3,002	2,643	2,792	2,986	3,656	3,594	4,475	4,802	6,174	7,019	7,393	7,499	7,459	8,684	8,754
Central America and Caribbean	na	0	0	0	0	0	0	1	0	0	0	0	3	1	1	1	2	2	3	4	3	4	5	9
Puerto Rico	High	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South America	na	0	1	1	1	3	2	2	2	2	2	1	4	3	7	7	11	17	20	24	25	26	30	42
Argentina	Upper middle	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	3	2	4	5	2	2	6	7
Brazil	Upper middle	0	0	1	1	2	2	2	2	1	0	0	2	1	5	5	8	13	16	17	22	22	22	30
Europe	na	708	823	1,001	1,089	1,233	1,728	1,919	1,998	2,115	1,968	1,937	1,887	2,053	2,164	2,753	2,697	3,180	3,118	3,454	3,568	3,745	4,103	3,900
EU-27 + UK ^a	na	659	755	953	1,034	1,161	1,604	1,800	1,867	1,986	1,830	1,812	1,744	1,931	2,030	2,585	2,561	2,998	2,900	3,212	3,293	3,470	3,745	3,596
United Kingdom	High	77	100	122	138	168	265	334	290	325	284	259	240	271	316	378	352	455	514	544	442	510	535	487
EU-27 ^b	na	582	655	830	896	993	1,339	1,466	1,578	1,661	1,546	1,553	1,503	1,660	1,714	2,207	2,209	2,543	2,386	2,667	2,851	2,960	3,210	3,109
Austria	High	5	9	8	9	15	17	27	25	39	25	24	15	25	23	33	26	35	31	42	47	47	49	57
Belgium	High	11	6	9	11	14	14	34	35	34	35	35	30	41	39	46	53	52	47	72	72	64	56	76
Denmark	High	1	4	2	4	6	17	17	28	29	23	27	16	22	18	20	40	31	41	29	29	30	22	44
Finland	High	103	122	178	185	171	261	291	210	238	252	236	236	218	170	194	255	310	298	298	294	242	291	239
France	High	104	138	198	174	231	358	363	403	382	335	340	319	341	386	508	413	517	444	504	541	562	542	558
Germany	High	192	177	194	200	248	368	423	616	672	602	580	509	530	500	651	632	656	661	679	699	822	939	957
Hungary	High	1	2	0	1	3	5	5	6	6	12	11	11	16	21	24	33	44	41	38	39	28	38	20
Ireland	High	4	7	14	14	22	21	19	11	12	12	13	12	19	21	26	32	40	58	64	66	90	95	99
Italy	High	22	23	37	41	35	24	32	31	25	36	56	59	83	100	115	87	85	74	66	133	127	136	110
Netherlands	High	36	48	37	48	44	49	53	68	66	60	74	66	70	78	93	98	107	96	104	106	111	104	109
Spain	High	8	11	9	16	8	17	24	33	37	40	34	42	61	80	88	93	110	81	87	84	73	59	57
Sweden	High	93	101	137	186	189	179	161	97	101	96	100	152	190	242	356	393	486	450	578	624	629	735	637
Other Europe	na	49	68	49	55	72	124	119	131	129	138	125	143	122	134	168	136	182	219	242	275	275	358	304
Other Europe-2020 ^b	na	126	168	171	192	241	389	453	421	454	422	384	384	393	451	546	488	637	733	786	717	786	894	791
Belarus	Upper middle	0	0	0	1	0	1	2	0	0	1	1	0	1	0	1	1	1	1	1	2	2	2	2
Moldova	Lower middle	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0	1
Norway	High	6	4	8	9	16	16	11	20	15	18	14	15	10	9	10	9	13	17	18	13	14	20	21
Russia	Upper middle	31	44	25	24	31	70	64	78	74	75	60	80	66	79	101	76	98	113	114	145	152	197	167
Switzerland	High	11	18	12	19	20	31	34	30	37	37	44	40	34	40	39	40	47	62	81	92	76	101	75

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Ukraine	Lower middle	0	0	0	0	2	4	5	2	2	6	5	5	7	3	13	5	11	11	10	6	11	12	11
Asia	na	2,586	3,655	3,539	3,210	3,061	3,882	5,058	5,048	8,258	9,267	9,078	10,972	12,570	16,622	18,615	19,054	21,064	21,202	23,485	25,717	30,312	38,061	40,351
China	Upper middle	4	11	18	43	32	222	553	535	781	1,389	3,568	5,485	6,521	8,589	10,450	10,001	11,505	13,154	14,697	17,287	22,036	28,767	32,046
India	Lower middle	1	1	1	4	4	11	22	19	24	41	51	48	82	101	143	218	308	460	549	612	711	904	951
Japan	High	1,817	2,187	2,068	1,950	1,861	2,276	2,484	2,442	2,867	3,173	2,789	3,310	3,781	4,686	4,785	4,849	4,565	3,199	3,459	3,288	3,274	3,339	2,714
Malaysia	Upper middle	0	0	0	1	0	1	3	4	3	4	0	6	7	13	19	25	28	41	51	33	37	13	20
Singapore	High	5	4	5	8	7	14	17	15	11	14	12	22	15	21	27	13	22	20	27	30	26	33	52
South Korea	High	713	1,400	1,402	1,095	1,048	1,156	1,693	1,696	4,179	4,355	2,492	1,889	1,882	2,897	2,710	3,315	3,868	3,545	3,912	3,785	3,629	4,347	4,083
Taiwan	High	44	52	44	108	109	199	284	336	390	290	160	205	276	308	469	619	753	769	775	663	586	639	471
Middle East	na	25	41	38	49	72	93	99	90	96	76	77	113	136	111	156	181	264	294	349	398	404	463	439
Israel	High	25	40	38	49	72	92	99	90	94	76	75	106	131	106	141	167	245	271	332	370	380	425	412
Africa	na	3	8	2	2	3	8	11	10	12	6	20	14	15	7	12	11	15	13	22	25	18	21	20
South Africa	Upper middle	3	6	2	1	1	8	9	9	10	4	18	14	12	4	7	5	8	8	15	15	7	13	8
Australia and Oceania	na	31	38	69	102	139	251	307	201	233	178	133	101	87	68	73	66	84	78	94	84	92	108	103
Australia	High	28	37	67	99	137	249	305	196	228	173	130	94	78	62	63	57	72	67	85	72	81	94	93
New Zealand	High	3	1	2	3	2	2	3	5	5	5	3	7	9	7	10	9	12	11	9	12	10	14	9
Unclassified	na	2	3	1	2	0	0	2	0	0	2	1	1	2	1	1	3	2	2	8	2	1	1	1

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom.

^a The United Kingdom was a part of the EU for data purposes from 1973 to 2019.^b Beginning in 2020, the United Kingdom was no longer a member of the EU.**Note(s):**

International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2013) is used to fill missing information on priority patents using information in successive filings within the families. Priority patents not indexed in PATSTAT are replaced by the next utility patent(s) in the families according to filing dates. Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. China includes Hong Kong. Data were extracted in June 2021. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in year for which its output is accounted. As patent authorities become more involved with the European Patent Organisation, these gaps should disappear in the future, strengthening the robustness of statistics for these countries.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PATSTAT, accessed October 2021.

