



Microsoft's Android License

Intellectual Property Analysis of Microsoft patents related to Android

July 10, 2014

Since 2010, Microsoft has licensed a patent portfolio to device makers who use Android, the open source platform in many mobile devices. Industry experts estimate that Microsoft is generating \$1 to \$2 billion annually¹ from this licensing program and speculation has abounded as to which patents are included in this portfolio. In a surprise twist, the Chinese Ministry of Commerce (MOFCOM) disclosed two lists of patents that detail which Microsoft claims are implemented in Android.

The disclosure by MOFCOM on April 8, 2014 is a direct result of Microsoft's acquisition of Nokia's mobile handset unit as that deal required approval by the Anti-Monopoly Bureau of MOFCOM. The disclosed lists were part of the antitrust review.

Of the two lists of Microsoft patents disclosed by MOFCOM², one was a list of 310 patents which included 73 "standard-essential" patents (SEPs) for smartphones; 127 patents which are "implemented in Android"; and 110 "nonstandard-essential" patents and applications (non-SEPs). This list is referred to as Annex "B" by Microsoft.³ The second list is identical to the non-SEP set minus one issued patent, U.S. Patent No. 7,111,039. This list is referred to as Annex "A".

China approved the Microsoft-Nokia merger along with a set of conditions to which Microsoft must adhere. The conditions imposed by the Chinese regulatory authorities include the following directives. Microsoft must license the SEP patents on fair, reasonable and non-discriminatory terms (FRAND). Microsoft will not seek injunctions against Chinese smartphone manufacturers on the basis of the SEPs. Microsoft will not transfer the SEPs to another entity. Microsoft will not transfer non-SEPs to another entity for 5 years. These terms are effective for 8 years after the approval. Microsoft's Android patents appear to fall under the non-SEP category in this agreement. Obviously, the Chinese government is concerned that with Nokia's handset business Microsoft will be able to seek injunctions and block Chinese device makers from global markets.

With this disclosure, China may be attempting to counteract Microsoft's chokehold on the smartphone market. By disclosing the detailed list of these patents, companies who currently pay a license to Microsoft for the Android platform may discover that they have patents on the same technologies which precede Microsoft's patents. This may create an opening for them to either negotiate a better deal or demand that Microsoft license from them.

HTC was the first company to license Microsoft's portfolio in order to avoid a lawsuit for implementing Android in its smartphones. Android was created by the Open Handset Alliance, a conglomeration of companies including Google, T-Mobile, HTC, Qualcomm, and Motorola which jointly released the platform in 2007.⁴ HTC was the first device maker to implement the platform in 2008.⁵ Since 2010, Microsoft has negotiated 24 additional Android and Chrome OS licenses, despite having nothing to do with the development of either platform.

The question remains as to whether Microsoft actually owns proprietary rights to the Android OS or is the company unfairly taxing device makers by exploiting an uninformed belief in its supposed innovation?

¹ <http://arstechnica.com/tech-policy/2014/06/chinese-govt-reveals-microsofts-secret-list-of-android-killer-patents/>

² <http://www.mofcom.gov.cn/article/difang/henan/201404/20140400547823.shtml>

³ <http://www.microsoft.com/en-us/news/download/docs/0414chinaannouncement.pdf>

⁴ http://www.openhandsetalliance.com/press_110507.html

⁵ <http://phandroid.com/2008/02/04/htc-to-release-3-android-phones-in-2008/>

Analysis

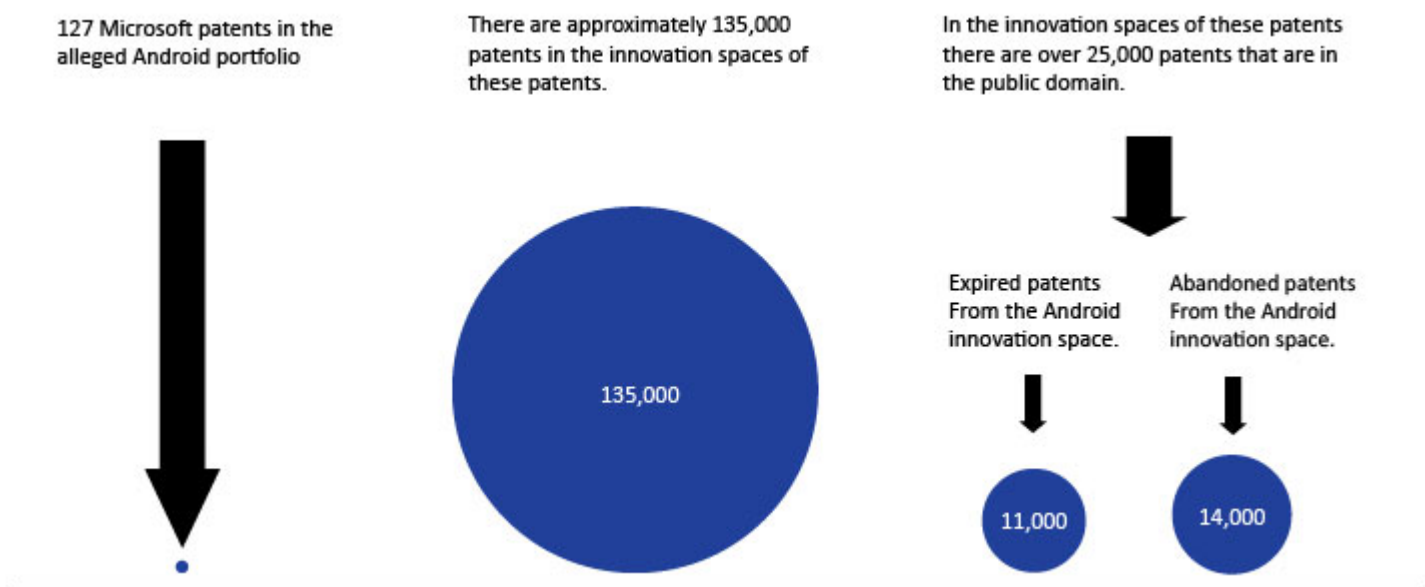
To answer the frequent question of what exactly is in Microsoft's alleged Android portfolio, M•CAM determined the areas of innovation in the table below of the 127 alleged Android patents in Microsoft's portfolio, which were included in Annex "B" as disclosed by the Chinese government (see Appendix A).

Innovation Area	No. of Patents	Innovation Area	No. of Patents
Audio Data	3	Networking	3
Computation	4	Power Control	1
Connectivity	10	Queries	3
Location and Sensors	19	Security	1
Imaging	8	Software Integration	6
Video	10	User Interface	36
Data Storage	9	Web Applications	10
Messaging	4		

The reader may wish to compare the above innovation areas to those listed on the Android developer's website: Applications, Web Applications, User Interface, Animation and Graphics, Computation, Media and Camera, Location and Sensors, Connectivity, Text and Input, Data Storage⁶. The two lists consistently overlap each other. However, this does not mean that Microsoft's patents came first in each of these areas.

We assessed Microsoft's alleged Android portfolio and commercially scored the U.S. granted patents using M•CAM's commercial asset underwriting systems. This assessment measured the commercial strength and transferability of each patent. Commercial patents are linked directly with cash flows and may have a basis for licensing. Non-commercial patents have little chance of being licensed, lack market relevance, or are direct liabilities to the holder due to prosecution impairments.

21% of Microsoft's alleged Android portfolio scored as commercial versus 79% as non-commercial. This means that only one fifth of the portfolio was directly commercially relevant, casting doubt the overall viability of the Microsoft licensing packages on offer. Figure 1 below shows the true scope of these innovation spaces.

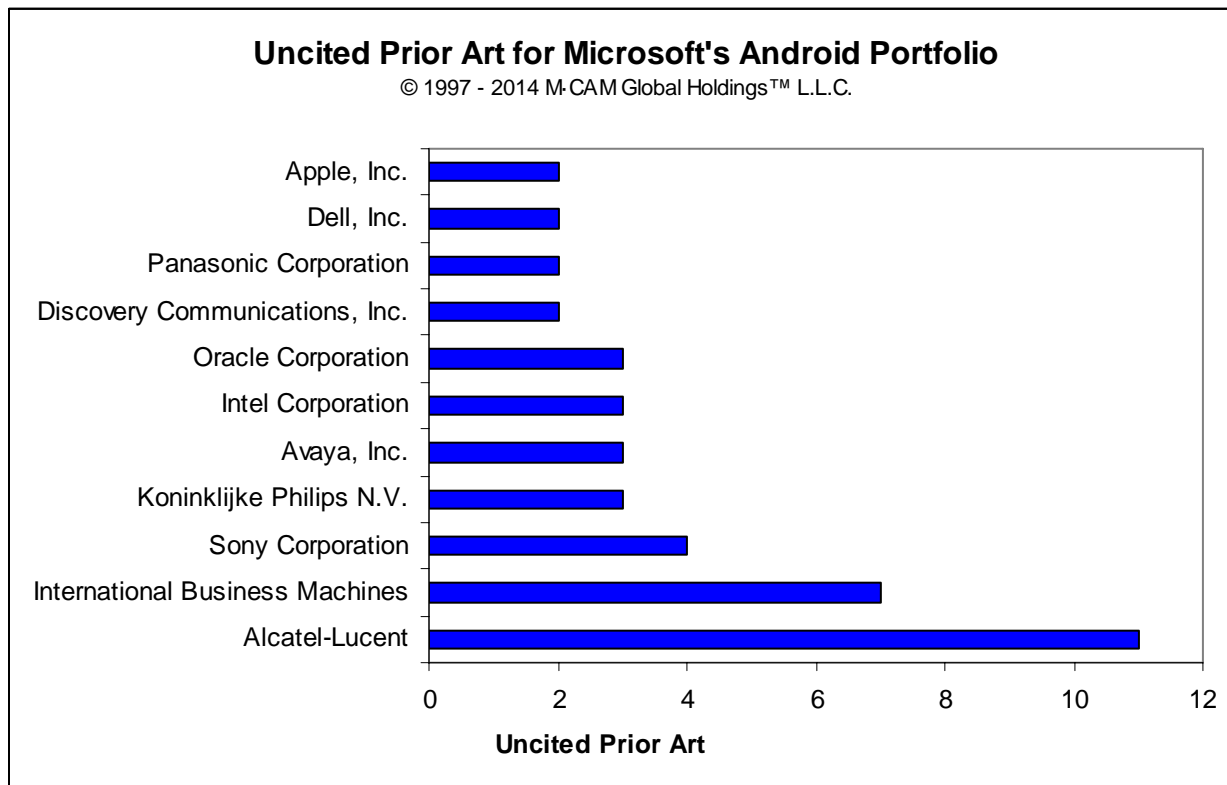


⁶ <http://developer.android.com/guide/index.html>

Figure 1 above also shows that there are a surprising amount of abandoned and expired patents already in this space. Much of the Android platform may, in fact, be a 'Freedom to Operate' space and already part of the public domain. There may well be alternatives to the Microsoft licensing packages that could be assembled from the rich vein of patents that occupy the 'Freedom to Operate' space.

Since Microsoft's commercial scores around its alleged Android portfolio indicate that it is not the first entity in this space, M•CAM looked for other entities with patents which preceded the 127 properties in Microsoft's portfolio.

Figure 2 below identifies these entities and the number of documents they hold which precede Microsoft's Android patents.



Interestingly enough, there are some names on this list who are already in licensing agreements with Microsoft. Dell signed a general patent licensing agreement on March 26, 2014.⁷ Panasonic licensed Microsoft's exFAT and FAT technology in 2010.⁸ Sony Ericsson also signed a licensing agreement with Microsoft in 2006 for its Exchange ActiveSync protocol.⁹

Conclusion

If Microsoft's claim to ownership of the Android OS is not as strong as it has insisted, then its patents on smartphones may not be the standard-essential patents that it claims they are. Further analysis of these patents is required for a definitive answer.

For a more detailed examination of the patents mentioned in this report, please contact us at patentlyobvious@m-cam.com.

⁷ <http://www.microsoft.com/en-us/news/press/2014/mar14/03-26dellpatentlicensingpr.aspx>

⁸ <http://www.microsoft.com/en-us/news/press/2010/feb10/02-25mspanasonicpr.aspx>

⁹ <http://www.microsoft.com/en-us/news/press/2006/feb06/02-06sonyexchangepr.aspx>

Appendix A

127 alleged Android patents owned by Microsoft and published by MOFCOM.

Document #	Title	Assignee Name	Priority	File	Issue
US8320549	Advanced call routing using linked identities	Microsoft Corporation	18-Jun-09	18-Jun-09	27-Nov-12
US8255379	Custom local search	Microsoft Corporation	10-Nov-09	10-Nov-09	28-Aug-12
US8239783	Integrated viewfinder and digital media	Microsoft Corporation	19-Nov-09	15-Feb-10	7-Aug-12
US8230359	System and method that facilitates computer desktop use via scaling of displayed objects with shifts to the periphery	Microsoft Corporation	25-Feb-03	25-Feb-03	24-Jul-12
US8214759	Taskbar media player	Microsoft Corporation	25-Jun-03	10-Jun-10	3-Jul-12
US8166390	Figure sizing and positioning on dynamic pages	Microsoft Corporation	15-Feb-06	15-Feb-06	24-Apr-12
US8155624	Automatic wireless device message management responsive to end user preferences	Microsoft Corporation	29-Apr-05	29-Apr-05	10-Apr-12
US8090574	Entropy encoding and decoding using direct level and run-length/level context-adaptive arithmetic coding/decoding modes	Microsoft Corporation	4-Sep-02	19-Oct-10	3-Jan-12
US7873356	Search interface for mobile devices	Microsoft Corporation	16-Sep-05	16-Jun-06	18-Jan-11
US7868786	Parsing location histories	Microsoft Corporation	19-Oct-04	19-Oct-04	11-Jan-11
US7865924	Providing input and output for a mobile device	Microsoft Corporation	27-Jul-06	5-Dec-06	4-Jan-11
US7840032	Street-side maps and paths	Microsoft Corporation	28-Jul-06	28-Jul-06	23-Nov-10
US7839895	Methods and systems for start code emulation prevention and data stuffing	Microsoft Corporation	22-Jan-02	6-Mar-09	23-Nov-10
US7831547	Searching and browsing URLs and URL history	Microsoft Corporation	12-Jul-05	12-Jul-05	9-Nov-10
US7777648	Mode information displayed in a mapping application	Microsoft Corporation	21-Apr-05	8-Jan-07	17-Aug-10
US7734821	Media coding for loss recovery with remotely predicted data units	Microsoft Corporation	12-Mar-99	22-Mar-05	8-Jun-10
US7707197	System and method for filtering and organizing items based on common elements	Microsoft Corporation	27-Mar-03	11-Oct-06	27-Apr-10
US7692629	Operating touch screen interfaces	Microsoft Corporation	7-Dec-06	7-Dec-06	6-Apr-10
US7689649	Rendering destination instant messaging personalization items before communicating with destination	Microsoft Corporation	31-May-02	31-Dec-02	30-Mar-10
US7685305	Media coding for loss recovery with remotely predicted data units	Microsoft Corporation	12-Mar-99	28-Jun-05	23-Mar-10
US7685116	Transparent search query processing	Microsoft Corporation	14-Dec-04	29-Mar-07	23-Mar-10
US7671782	State-sensitive navigation aid	Microsoft Corporation	1-Jul-05	3-Sep-08	2-Mar-10
US7668537	Place specific buddy list services	Microsoft Corporation	27-Jul-00	27-May-05	23-Feb-10
US7650493	System and method for integrating secure and non-secure software objects	Microsoft Corporation	30-Jun-00	17-Feb-06	19-Jan-10
US7650431	Serving locally relevant advertisements	Microsoft Corporation	28-Aug-06	28-Aug-06	19-Jan-10
US7646816	Generalized reference decoder for image or video processing	Microsoft Corporation	19-Sep-01	19-Sep-01	12-Jan-10
US7644376	Flexible architecture for notifying applications of state changes	Microsoft Corporation	23-Oct-03	22-Jun-04	5-Jan-10
US7596760	System and method for selecting a tab within a tabbed browser	Microsoft Corporation	7-Apr-05	7-Apr-05	29-Sep-09
US7593466	Generalized reference decoder for image or video processing	Microsoft Corporation	19-Sep-01	4-May-06	22-Sep-09
US7590720	Systems and methods for locating geographical regions of mobile computer users	Microsoft Corporation	12-Jan-01	6-Nov-06	15-Sep-09
US7583220	State-sensitive navigation aid	Microsoft Corporation	1-Jul-05	3-Sep-08	1-Sep-09
US7577305	Spatial extrapolation of pixel values in intraframe video coding and decoding	Microsoft Corporation	17-Dec-01	26-May-06	18-Aug-09

US7558851	Locating a mobile computing unit	Microsoft Corporation	12-Jan-01	6-Nov-06	7-Jul-09
US7554529	Smart soft keyboard	Microsoft Corporation	15-Dec-05	15-Dec-05	30-Jun-09
US7533352	Method and apparatus for providing context menus on a hand-held device	Microsoft Corporation	27-Apr-00	14-Oct-03	12-May-09
US7519900	System and method for processing digital annotations	Microsoft Corporation	24-Oct-03	15-Oct-04	14-Apr-09
US7505485	Methods and systems for start code emulation prevention and data stuffing	Microsoft Corporation	22-Jan-02	22-Jan-03	17-Mar-09
US7499942	Modeling recurring events in a data store	Microsoft Corporation	28-Dec-05	28-Dec-05	3-Mar-09
US7493130	Synchronizing over a number of synchronization mechanisms using flexible rules	Microsoft Corporation	26-Feb-02	26-Jan-06	17-Feb-09
US7490003	System and method for providing a location snapshot service and associating a snapshot with location container data	Microsoft Corporation	18-Apr-05	18-Apr-05	10-Feb-09
US7454718	Browser navigation for devices with a limited input system	Microsoft Corporation	20-Aug-04	20-Aug-04	18-Nov-08
US7441204	Method and system for automatically displaying content of a window on a display that has changed orientation	Microsoft Corporation	6-Feb-04	6-Feb-04	21-Oct-08
US7427941	State-sensitive navigation aid	Microsoft Corporation	1-Jul-05	1-Jul-05	23-Sep-08
US7421666	Browser navigation for devices with a limited input system	Microsoft Corporation	18-May-01	19-Oct-04	2-Sep-08
US7411582	Soft input panel system and method	Microsoft Corporation	8-Feb-02	15-Nov-04	12-Aug-08
US7383460	Method and system for configuring a timer	Microsoft Corporation	25-Mar-05	25-Mar-05	3-Jun-08
US7369850	Connectivity notification displaying path to connection	Microsoft Corporation	12-Nov-02	12-Nov-02	6-May-08
US7356836	User controls for a computer	Microsoft Corporation	28-Jun-02	28-Jun-02	8-Apr-08
US7337389	System and method for annotating an electronic document independently of its content	Microsoft Corporation	7-Dec-99	7-Dec-99	26-Feb-08
US7289673	Decoding macroblock type and coded block pattern information	Microsoft Corporation	30-Nov-98	27-Jul-06	30-Oct-07
US7263232	Spatial extrapolation of pixel values in intraframe video coding and decoding	Microsoft Corporation	17-Dec-01	1-Feb-06	28-Aug-07
US7221331	Method and system for auxiliary display of information for a computing device	Microsoft Corporation	5-May-03	5-May-03	22-May-07
US7213048	Context aware computing devices and methods	Microsoft Corporation	5-Apr-00	5-Apr-00	1-May-07
US7202893	Method and apparatus for the display of still images from image files	Microsoft Corporation	13-Nov-01	3-Jan-05	10-Apr-07
US7200611	TV program database	Microsoft Corporation	13-May-02	13-May-02	3-Apr-07
US7191159	Transmitting information given constrained resources	Microsoft Corporation	4-May-00	24-Jun-04	13-Mar-07
US7181072	Intra compression of pixel blocks using predicted mean	Microsoft Corporation	5-May-97	31-Mar-03	20-Feb-07
US7162466	System and method for filtering and organizing items based on common elements	Microsoft Corporation	27-Mar-03	16-May-03	9-Jan-07
US7162091	Intra compression of pixel blocks using predicted mean	Microsoft Corporation	5-May-97	31-Mar-03	9-Jan-07
US7159188	System and method for navigating content in an item	Microsoft Corporation	23-Oct-03	23-Oct-03	2-Jan-07
US7149247	Methods and systems for encoding and decoding video data to enable random access and splicing	Microsoft Corporation	22-Jan-02	22-Jan-03	12-Dec-06
US7137117	Dynamically variable idle time thread scheduling	Microsoft Corporation	5-Jun-00	25-Apr-01	14-Nov-06
US7133909	Systems and methods for locating mobile computer users in a wireless network	Microsoft Corporation	12-Jan-01	12-Jan-01	7-Nov-06
US7120197	Motion compensation loop with filtering	Microsoft Corporation	17-Dec-01	17-Dec-02	10-Oct-06
US7093031	Specifying extended configuration descriptor information in a USB device	Microsoft Corporation	21-Dec-00	21-Oct-04	15-Aug-06
US7072461	Merging various request methods into a single unified user interface	Microsoft Corporation	2-Oct-00	30-Aug-01	4-Jul-06

US7050408	Communicating multi-part messages between cellular devices using a standardized interface	Microsoft Corporation	26-Sep-01	26-Sep-01	23-May-06
US7039801	System and method for integrating secure and non-secure software objects	Microsoft Corporation	30-Jun-00	19-Apr-01	2-May-06
US7024214	Synchronizing over a number of synchronization mechanisms using flexible rules	Microsoft Corporation	26-Feb-02	26-Feb-02	4-Apr-06
US6968179	Place specific buddy list services	Microsoft Corporation	27-Jul-00	27-Jul-00	22-Nov-05
US6957233	Method and apparatus for capturing and rendering annotations for non-modifiable electronic content	Microsoft Corporation	7-Dec-99	7-Dec-99	18-Oct-05
US6912584	Media coding for loss recovery with remotely predicted data units	Microsoft Corporation	12-Mar-99	23-Dec-02	28-Jun-05
US6909910	Method and system for managing changes to a contact database	Microsoft Corporation	1-Feb-02	1-Feb-02	21-Jun-05
US6901559	Method and apparatus for providing recent categories on a hand-held device	Microsoft Corporation	6-Jan-00	27-Apr-00	31-May-05
US6897853	Highlevel active pen matrix	Microsoft Corp.	10-Nov-00	15-Dec-00	24-May-05
US6891551	Selection handles in editing electronic documents	Microsoft Corporation	10-Nov-00	24-Jan-01	10-May-05
US6868551	Interactive program summary panel	Microsoft Corporation	5-May-95	8-Jan-99	15-Mar-05
US6832273	System and method to specify extended configuration descriptor information in USB devices	Microsoft Corporation	21-Dec-00	21-Dec-00	14-Dec-04
US6826762	Radio interface layer in a cell phone with a set of APIs having a hardware-independent proxy layer and a hardware-specific driver layer	Microsoft Corporation	16-Feb-01	16-Feb-01	30-Nov-04
US6822664	Browser navigation for devices with a limited input system	Microsoft Corporation	11-Oct-00	18-May-01	23-Nov-04
US6819315	Soft input panel system and method	Microsoft Corporation	16-Dec-97	8-Feb-02	16-Nov-04
US6799047	Locating and tracking a user in a wireless network through environmentally profiled data	Microsoft Corporation	25-Feb-99	25-Feb-00	28-Sep-04

M·CAM's Patent Glossary

<u>Aligned Sector:</u>	The business sector in which the product(s) resulting from the patent(s) is currently or intended to be sold.
<u>Applicant:</u>	The person or corporation that applies for a patent with the intent to use, manufacture or license the technology of the invention; under U.S. law, except in special situations, the applicant(s) must be the inventor(s).
<u>Application:</u>	Complete papers submitted to the U. S. Patent and Trademark Office seeking a patent including oath, specification, claims, and drawings. This usually does not signify a Provisional Patent Application, but only a regular patent application.
<u>Art:</u>	The established practice and public knowledge within a given field of technology. This also identifies a process or method used to produce a useful result. A term used in consideration of the problem of patentable novelty encompassing all that is known prior to the filing date of the application in the particular field of the invention.
<u>Assignee:</u>	The person(s) or corporate body to whom the law grants or vests a patent right. This refers to the person or corporate entity that is identified as the receiver of an assignment.
<u>Business Method Patent:</u>	A patent that controls the way a business process is undertaken. The issuance of these patents by the United States Patent and Trademark Office (USPTO) is new and controversial, since many allege that it is unfair to allow a patent on a way of doing business.
<u>Citation:</u>	This may include patents or journal articles that the applicant or examiner deems relevant to a current application. A reference to legal authorities or a prior art documentation are examples of a citation.
<u>Claim:</u>	The language in a patent application that defines the legal scope of the patent. Most patents have numerous claims. This is typically the single most important section in the application.
<u>Concurrent Art:</u>	Concurrent art occurs when related patent applications are being examined by the USPTO at the same time. It is difficult for any company or inventor to know, at the time they file for a patent, whether a "related" patent application exists.
<u>Filing Date:</u>	The date when a properly prepared application reaches the patent office in complete form.
<u>Innovation Cycle:</u>	A description of the commercialization timeframe for the intellectual property.
<u>Innovation Space:</u>	M·CAM's representation of the innovation(s) that occur before, during, and after the pending period of the subject patent. The innovation space is the first place to look for patents that are closely related to the subject patent and that may impact the defensibility of the subject patent or create opportunities for patent licensing.
<u>Issue Date:</u>	Not to be confused with the filing date, which is the date the patent application was physically received by the U.S. Patent and Trademark Office. This is the date on which the patent actually issues.
<u>Non-Aligned Sector:</u>	Any sector in which the patent can be used or sold, other than the sector for which the patent or resultant product was invented or intended.
<u>Pod:</u>	A group of patents owned by a company that should be treated as a single unit of innovation (e.g., a certain group of patents that comprise a single product or multiple related products).
<u>Prior Art:</u>	Any relevant patent that was issued before the patent being analyzed. If this previous patent was specifically mentioned in the new patent's application, the previous patent is referred to as "cited prior art". If it was NOT mentioned, then that previous patent is referred to as "uncited prior art".
<u>Subsequent Art:</u>	Any patent that has a filing date with the USPTO that is after the issuance date of the subject patent. This subsequent art patent may or may not have cited (see "Citation" above) the subject patent. As subsequent art represents more recent innovation than the subject patent, it has great potential to shrink the market opportunity for the subject patent.

A Brief Primer on the Patent System

In recent years, the importance of patents and intellectual property rights as an important variable in the marketplace has come to the forefront of the public consciousness as world leaders declare their country's lead in the innovation race. Damaging intellectual property litigation is becoming increasingly common across all industries. This is exacerbated when patent rights are granted for non-novel ideas. A vast amount of precedent innovation is unconsidered by patent-granting authorities in the creation of new IP rights. Patent granting authorities including the United States Patent and Trademark Office (USPTO), European Patent Office (EPO), Japanese Patent Office (JPO), Chinese State Intellectual Property Office (SIPO), Korean Intellectual Property Office (KIPO) and many others are constrained by the use of patent classification systems which are routinely circumvented by patent applicants.

There is a two-way social contract underlying the patent system. In the United States, patent terms are generally limited to 20 years from the date of application. By statutory intention, once a patent has expired, the patent holder loses the right to exclude others from fully utilizing any innovation described in the patent. A large number of patents enter the public domain when they are "abandoned" – when owners discontinue paying patent maintenance fees. Patents also only provide an exclusionary right in the country for which the patent is filed. As demonstrated by the Global Innovation Commons¹⁰ (G.I.C.), using intellectual property available in the public domain eliminates the need to pay licensing fees on those innovations in countries where the patent was never registered, or worldwide, if abandoned.

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¹⁰ <http://www.globalinnovationcommons.org/>