



European
Commission

SOUTH-EAST ASIA IPR SME HELPDESK

IP Protection in South-East Asia for the Smart Cities Industry



For free, confidential, business-focused
IP advice within three working days
Email: question@southeastasia-iprhelpdesk.eu

- 1 **Overview:
Smart Cities Industry in South-East Asia**
- 2 **The Economic Value of Your Intellectual
Property (IP)**
- 3 **Frequent IP issues in the Smart Cities
Industry**
- 4 **SME Case Studies**
- 5 **Take-Away Messages**
- 6 **Glossary of Terms**
- 7 **Related Links and Additional Information**

1. Overview: Smart Cities Industry in South-East Asia

The term 'smart city' describes a framework, predominantly composed of information and communication technologies (ICT), that seeks to gather and organise data from multiple sources to enable the more efficient and sustainable management of an urban area.

The South-East Asia region has a diverse range of countries: Indonesia has the fourth-largest population in the world, whereas Brunei has fewer than 500000 people. Levels of economic and financial development also vary across the region. For example, Singapore is a highly developed city-state with sophisticated infrastructure, whereas there is a large proportion of the population in other parts of the region that do not have full access to basic services.

However, urbanisation is a never-ending phenomenon and by 2030 a further 90 million people are expected to have moved into cities across South-East Asia. This wave of urbanisation is primarily driven by rapid growth in seven primary cities — Jakarta, Manila, Yangon, Ho Chi Minh City, Bangkok, Kuala Lumpur, and Singapore. Thus, there is a need to look at innovative ways to help improve people's lives.

In recognition of rapid urbanisation, the Association of Southeast Asian Nations (ASEAN) founded the ASEAN Smart Cities Network (ASCN) in 2018. This initiative is aimed at encouraging collaboration between the nations towards the common goal of smart and sustainable urban development, and 26 cities throughout the region have been chosen as pilot cities.

Significant resources are being deployed by countries in the region. For example, Singapore has a Smart Nation initiative, which has numerous programmes at various stages of development — e.g. national sensor and urban mobility programmes. Other territories with major projects include

Malaysia (e.g. Johor Bahru), Thailand (Bangkok, Chiang Mai, and Phuket), Indonesia (with a new capital city, among other things), and the Philippines (New Clark City).

Thus, there are significant opportunities for European-based small and medium-sized enterprises (SMEs) in the South-East Asian region. However, European SMEs tend to provide highly innovative niche solutions that only work in combination with a number of other interdependent technologies. This might require an SME to disclose its innovations to third parties, increasing the risk of copying if measures to prevent this are not put in place before entering the market is considered. Therefore, it is important to establish a comprehensive IP strategy that considers all available forms of IP protection in order to minimise the risks associated with entering markets in South-East Asia.

2. The Economic Value of Your Intellectual Property (IP)

IP rights provide the rights holder with a limited monopoly. For example, an SME that holds a patent for a smart city invention can use the patent to stop other companies from using the invention. This monopoly is limited to the duration of the patent, which generally lasts for a maximum of 20 years, and is limited to the country or countries in which the SME holds patents.

The SME can benefit from the patent in a number of different ways. The first and simplest way is that the SME can directly implement the invention themselves and derive profit from it. Because no other companies can use the invention, the SME may be able to charge a premium for their products or services, or may be able to attract extra customers because they can provide products or services that are not provided by competitors.

The second way in which the SME can benefit from their IP, such as a patent, is through licensing. It may be the case that the SME cannot or does not wish to exploit an invention themselves. The SME may allow another party to use the invention in exchange for the payment of a licence fee. Licences can be structured in many different ways and can be specific to particular jurisdictions. So, for example, a European SME with IP registered in South-East Asian countries may license another company to use their IP in the region while they continue operating in Europe.

Because of the commercial benefits that IP rights provide, their ownership can help attract investors. Investors will often see a portfolio of IP rights as an important part of the value of a company.

3. Frequent IP Issues in the Smart Cities Industry

Patents

Patents protect inventions and, in a patent, an invention can be defined as a product, a process or both. A patent gives its owner the right to prevent others from performing acts such as making, selling, importing and using a product, or using and offering a process for use. For an invention to be patentable, it must be new and have an inventive step. For an invention to be new, it must have not been disclosed to the public before the patent application was filed. It is very important to note that in many jurisdictions a prior disclosure by the applicant can be cited against a patent application. This also includes any disclosure that was part of the process of a previous patent application. Therefore, SMEs must consider whether they wish to file a patent application for any new developments before those developments are disclosed. Otherwise, the chance to obtain a patent may be lost.

It's also important to keep in mind that not every invention is patentable. According to the [European Patent Office \(EPO\)](#) interpretation guidelines, discoveries, scientific theories, mathematical methods, aesthetic creations, schemes, rules and methods for performing mental acts, playing games or doing business, programs for computers, and presentations of information are not patentable.

Inventions in the smart cities industry can relate to the implementation of solutions to problems using computer systems. This is a complex area of patent law and in most countries there are some restrictions on the patentability of computer-implemented inventions. The law on exactly what subject matter can be patented varies among South-East Asian countries. Generally, methods of doing business are not patentable. However, if there are some technical considerations around how the invention is implemented then the invention may be patentable. Most South-East Asian countries adopt a similar approach to the [EPO](#) when determining if a computer-implemented invention is patentable. That is, if an invention provides the solution to a technical problem, then it is considered patentable.

For example, the provision of a computer-based control system that receives input from a sensor network and uses the information to actively manage traffic flow through a traffic-light system would be considered as providing a solution to a technical problem, and would therefore be considered to be patentable. If the invention solves a non-technical problem, such as a purely business problem, then it is not patentable in most South-East Asian countries. For example, a road pricing scheme that dynamically calculates toll fees based on the time



of day would not be considered patentable if the only new parts of the scheme related to calculating the price, because this would be considered as solving a non-technical problem. However, a road pricing system that can more accurately or more securely determine the distance travelled by a vehicle would be patentable. Singapore, however, has a more lenient approach. In Singapore, an invention is considered patentable if there are technical considerations, even if these ultimately relate to a non-technical problem.

Patents are national rights and thus an SME will only be able to prevent others from using an invention in the jurisdiction in which they hold a patent. However, there are processes that allow (within a limited time frame after the initial filing) a patent application to be filed in other countries. The first of these is the process of claiming priority (based on mainly on the Paris Convention, see more information on the World Intellectual Property Organization (WIPO) website <https://www.wipo.int/treaties/en/ip/paris/>). This gives an applicant one year from the date of the original filing in which to file patent applications in other countries and claim the filing date of the original application. This one-year period can be extended by a further 18 months by filing an international patent application (also known as a *PCT* application).

An important consideration for SMEs with inventors, such as engineers or developers, who are based in South-East Asian countries is that many countries have restrictions on filing patent applications abroad. Most South-East Asian countries have some type of restriction on filing patent applications if they have not first been filed in the country in which the invention was made or where the inventors reside. Some countries, such as Indonesia, do not have these restrictions. In countries such as Malaysia and Singapore, it is possible to obtain a foreign filing permission from the patent office to allow a patent application to be initially filed abroad. In Vietnam there is no provision for obtaining a foreign filing licence and, therefore, it is necessary to first file a patent application in Vietnam for any invention developed in the country; a consequence of not first filing a patent application in Vietnam is that any patent in Vietnam covering the same invention may be revoked.

It is also important to note that, where a system includes components in more than one territory (e.g. a server in Singapore and a client in Vietnam), the claims of the patent application should include claims concerning the separate components as much as possible. This is because the law in many territories in South-East Asia does not include provisions that deal with infringement when parts of the claimed invention are outside the territory in question.

For more information regarding patent protection in South-East Asia please consult our guide: www.southeastasia-iprhelpdesk.eu/sites/default/files/publications/EN_patent.pdf

Utility Models or 'Petty Patents'

A utility model is similar to a patent, but it is generally easier to obtain. This is because, in most South-East Asian territories with utility model systems, only novelty and industrial applicability are required. The exception is Laos, which also requires some degree of inventiveness, but the degree of inventiveness (i.e. the inventive step requirement) needed to obtain a utility model is generally less than for a full patent. Given this, it is generally easier, quicker and cheaper to obtain (and maintain) a utility model. However, they tend to last for a shorter period of time than a patent (e.g. 7–10 years, Malaysia's potential 20-year term is a significant outlier). For innovations with a limited lifespan (e.g. 3–5 years), utility model protection may well be sufficient. However, if the innovation will be used for a long time (>10 years), or if the innovation will act as a platform for new technologies to be built on top of, patent protection is a better choice.

The full list of territories in South-East Asia that have utility model regimes is: Indonesia; Laos; Malaysia; the Philippines; Thailand; Vietnam. A notable exclusion is Singapore, where no utility model protection is available. It is also important to note that utility models in Indonesia cannot be obtained through a PCT application. In other territories with a utility model regime, it is possible to convert a patent to a utility model if desired.

In most South-East Asian territories with a utility model regime, it is possible to obtain protection for products and processes. Again, the notable exception is Indonesia, where protection is limited to products. Please note that, as utility models are a form of patent, the same subject-matter restrictions noted above also apply to utility models.



Confidential Information and Trade Secrets

One way in which SMEs can protect an innovative solution is through keeping the solution secret. This may provide a means of protecting an innovation that might not be patentable. It is important to note that a patent application will be published, and therefore the information within it will be available to competitors. Therefore, SMEs should carefully choose what is worth patenting and what is better kept secret. When opting for the secrecy strategy it is important to sign a non-disclosure agreement, not only with all of your partners, but also with any employees that know about the innovation.

Some smart city innovations may be protectable as trade secrets. For example, parts of a computer-implemented process that use servers which cannot be seen by the public may be protected as trade secrets. It is important to bear in mind that these processes must not be easily reverse-engineered. Otherwise, a competitor could identify how a process is implemented and then implement it themselves. Always consider how much information you need to share with partners on a project — it should be limited as much as possible, or appropriate agreements to protect your confidential information need to be in place. There are cases around the world (not just in South-East Asia) where sharing know-how with a partner company directly resulted in a generation of a new competitors with access to the same technology.

For more information regarding trade secret protection in South-East Asia please consult our guide: https://www.southeastasia-iprhelpdesk.eu/sites/default/files/publications/en_trade_secrets_201704.pdf

Trade Marks

Trade marks protect brands. Generally, a brand name, a slogan, a logo or sign that identifies an SME as the source of products and services can be registered as a trade mark. In addition, some countries allow non-traditional trade marks such as three-dimensional shapes, gestures and even smells to be registered. Trade marks are registered with respect to particular classifications (a.k.a. classes) of products or services; when applying for a trade mark it is therefore necessary to decide which classification(s) of products and services the trade mark will be registered under.

It is important to note that the first person to file a request to register a trade mark in South-East Asia will usually be able to obtain the mark. There are numerous examples across South-East Asia (e.g. in Vietnam, the Philippines, etc.), where a local company decided to copy the mark of an SME. In some cases attending a trade mission in one country (e.g. the Philippines) can lead to an attendee registering your mark in another (e.g. Vietnam).

Given the above, an important consideration for SMEs entering new markets is to check that the brand or mark that they wish to use is available in the jurisdiction in question. It is possible to carry out a [clearance search](#) in each country to determine whether a particular brand name is free for use or has already been registered as a trade mark. If it appears that someone else has registered your trade mark, it may be possible to challenge the registration on the grounds that it was made in 'bad faith'. Note that the chances of success vary according to the regional territory in question, and also depend on the

conduct of the registered owner (e.g. are they simply trying to get money from you, or have they been trading for years using that mark?).

If you are looking at having a locally based partner act for you in one or more territories in the region, make sure that the contract specifies who will own any trade marks that may be registered in that territory. Better yet, apply for the trade marks before entering into any such arrangements. It is common in many territories in South-East Asia for your partner to register your trade mark, and so they then own it. If the relationship ever deteriorates, you could find yourself having to deal with a trade mark infringement suit brought against you by your former partner!

As with patents, trade marks are national rights and so it is necessary to register a trade mark in each country where protection is required. There is a centralised international system for registering trade marks called the Madrid Protocol (more information on the WIPO website <https://www.wipo.int/madrid/en/>). This allows trade marks to be registered in multiple jurisdictions using a single application. Malaysia joined the Madrid Protocol in January 2020 and, currently, all South-East Asian countries except Myanmar are members.

For more information regarding trade mark protection in South-East Asia please consult our guide: www.southeastasia-iprhelpdesk.eu/sites/default/files/publications/sea-trademarks-ea-02-20-035-en.pdf



Copyright

Copyright gives the owner the right to prevent others from copying their work. As discussed above, smart city technologies may be implemented through the use of computer software. This computer software will generally be protected by copyright. Copyright exists automatically when an original work is first recorded. In addition to this, most South-East Asian countries (including Vietnam, Indonesia, and Thailand) also provide for the registration of copyright. There are no provisions for registering copyright in Singapore.

A limitation of copyright is that it does not generally protect an innovation underlying a computer program. So while copyright will provide protection for a specific computer program that implements a smart city innovation, it cannot protect against others expressing the same innovation using their own (different) code. In other words, a competitor of an SME could write, or commission, their own computer program that implements the same underlying idea without infringing copyright.

An important issue to consider with copyright is the ownership of copyright for works such as computer programs. Generally, it is important (particularly when work has been commissioned, for example, from external computer programmers) that the contracts clearly specify the owner of the copyright for the work. Without this, the copyright could belong to the computer developer and not to the company.

For more information regarding copyright protection in South-East Asia please consult our guide: https://www.southeastasia-iprhelpdesk.eu/sites/default/files/publications/Copyright_english.pdf

Industrial Designs

In most South-East Asian countries it is possible to register designs. Registered designs protect the external appearance of a product. In some South-East Asian countries (such as Singapore, Thailand, the Philippines and Malaysia) it is possible to register designs for graphical user interfaces (GUIs). This allows the appearance of implementations of smart city applications, such as smartphone apps or display dashboards, to be registered as designs. It is important to bear in mind that registered designs protect the appearance rather than the underlying functionality.

The rights pertaining to designs, as with other IP, are national, however the [Hague System](#) provides a solution for registering your design, in 73 contracting parties covering 90 countries, through the filing of one single international application. At the moment in South-East Asia, only Cambodia, Singapore and Vietnam are part of the system.

For more information regarding industrial design protection in South-East Asia please consult our guide: https://www.southeastasia-iprhelpdesk.eu/sites/default/files/publications/industrial_designs_protection_in_south-east_asia.pdf



4. SME case studies

Case Study 1: Protection for a Mobile Payment Device

Background

A British company developed a method, software and a device that allows information to be transmitted and received over an electrical power grid. A significant potential market for the device was Singapore.

Action taken

The company initially filed a PCT application and then filed national phase applications in Singapore based on the international patent application.

Outcome

The company was able to protect the invention in Singapore.

Lesson Learnt

In this case, the invention mainly concerned a method and its related software. This type of subject matter is less easy to get a patent for, but this shows that such things can be protected by patent protection. It is noted that equivalent protection was also obtained in Europe — meaning that protection in other South-East Asian territories would have been possible.

Case Study 2: Registered Design Protection for an Online Trading Platform

Background

A German company developed a computer system and method for monitoring a traffic system, in order to streamline information and minimise delays for their users. Again, due to its Smart Nation programme, Singapore was viewed as a potential market of interest.

Action taken

The company initially filed a European patent application and then used this as the basis for a Singapore application (filed within 12 months of the European application's filing date).

Outcome

The company was able to protect the invention in Singapore.

Lesson Learnt

This patent mainly related to the overall system (multiple physical components) and their interaction and control. This type of subject matter is generally easier to obtain patent protection for around the world, including South-East Asia.



5. Take-Away Messages

- IP rights are valuable to many enterprises, including those involved in the smart cities industry.
- Patents potentially give the strongest protection because they not only block competitors from copying your commercial product, process or service, but they can also block them from launching something similar. Utility models can give similar protection, but they have a shorter lifespans. However, not all smart city implementations may be protected by a patent or utility model.
- If your innovations relate to software inventions, you should ensure that your attorney has included claims where all the steps listed occur in a single territory (e.g. one set of claims relating to the server's operation, and one set of claims relating to operations that occur on the client terminals). This will help to ensure that a third party can not infringe your patent, even if they place part of the invention in a different territory (e.g. a server in Singapore and the client terminals in Malaysia).
- Often a mix of types of IP can provide robust protection — for example, branding can be protected by trade marks, the appearance of products or GUIs may be protected by registered designs, software code may be protected by copyright and underlying innovations may be protected by patents.
- If an innovation is to be protected by a patent, it is important that the patent application is filed before the innovation is disclosed.
- Trade secrets also provide a potential form of protection for innovations. It is important to identify potential trade secrets and ensure that they remain confidential.
- Trade marks should be actively sought in territories of potential interest to your business. Not seeking protection (even when simply exploring the possibility of entering a South-East Asian market) could result in someone else registering your trade mark in the region, potentially leading to reputational damage if they sell inferior goods or services under your mark.

6. Glossary of Terms

Copyright:

An IP right that allows the owner of the right to prevent others from copying a work, such as a computer program.

Inventive Step:

A requirement for patenting an invention. An invention has an inventive step if it is not obvious.

Novelty:

A requirement for patenting an invention. An invention is novel if it has not been made available to the public before. A disclosure by the inventor themselves may take away the novelty.

Patent:

An IP right that protects inventions.

Patentability (or Patent Eligibility):

For an invention to be capable of being patented it must relate to patentable subject matter. Business methods are generally not patentable, however implementations of business methods may be, depending on the jurisdiction.

Registered Design (or Industrial Design):

An IP right that protects the appearance of a product. In some jurisdictions, GUIs can be protected with a registered design.

Trade Secret:

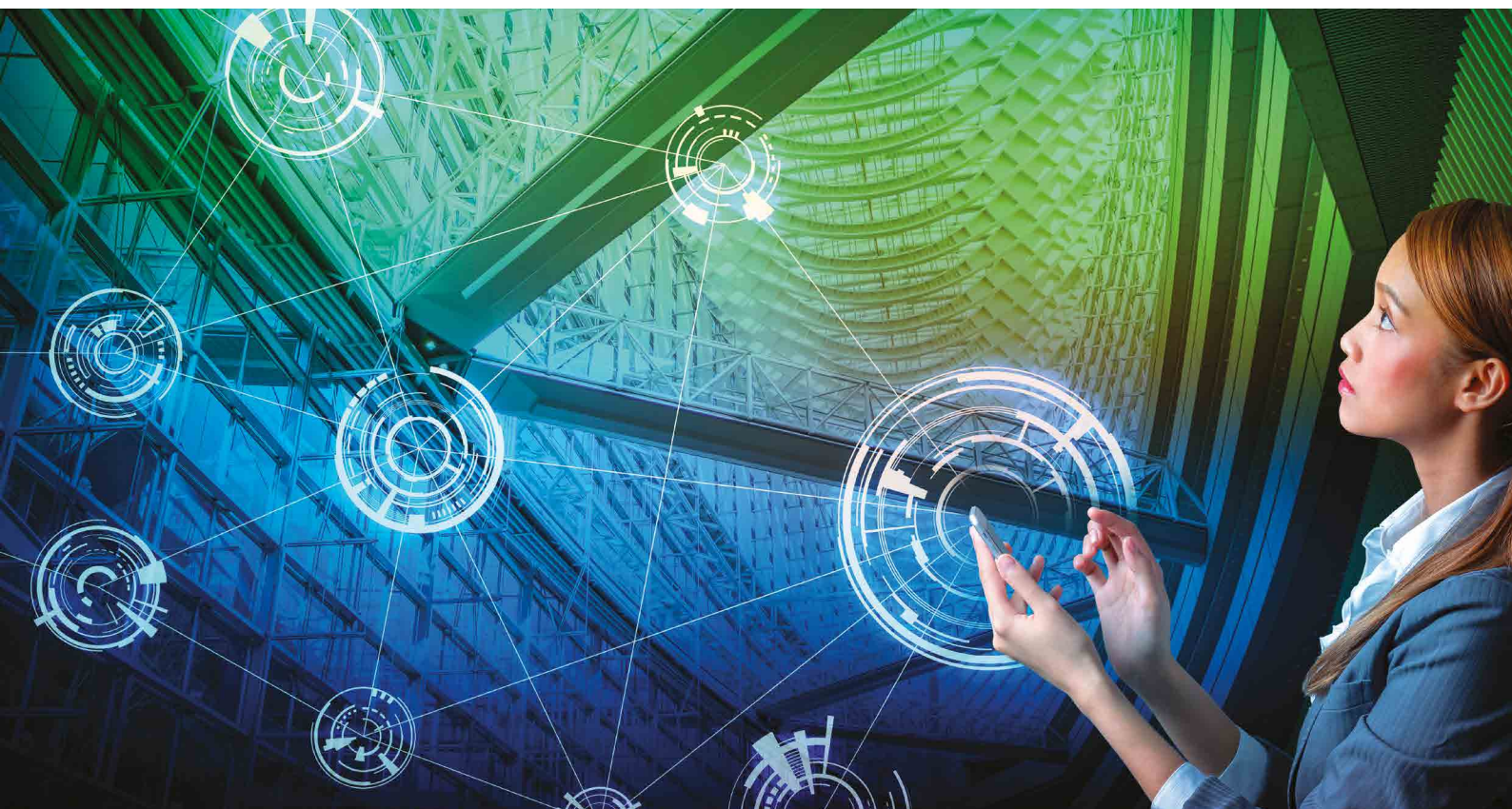
A way of protecting an innovation by keeping it confidential.

Trade Mark

An IP right that protects brands. A trade mark can be registered under different classifications of goods and services.

7. Related Links and Additional Information

- Visit the South-East Asia IPR SME Helpdesk website for further relevant information, such as how to deal with business partners in the South-East Asia region, <http://www.southeastasia-iprhelpdesk.eu>.
- Visit the Helpdesk blog <http://www.youripinsider.eu/> for related articles on IP in South-East Asia and China.
- See the ASEAN TMview: <http://www.asean-tmview.org/tmview/welcome>.
- Information on WIPO can be found at: <http://www.wipo.int>.
- Visit the ASEAN Intellectual Property Portal: <https://www.aseanip.org/>.



Free South-East Asia IP advice for European SMEs

> **For more information and to discuss how we can work together, please contact us:**

Tel: +84 28 3825 8116 | Tel: +32 2 663 30 51
Email: question@southeastasia-iprhelpdesk.eu
Online: www.ipr-hub.eu

> **If you have a question about protecting intellectual property in any South-East Asia country, please contact our free confidential helpline at:**

question@southeastasia-iprhelpdesk.eu

Download guide:



© European Union, 2020.

Reuse is authorised provided the source is acknowledged.

The reuse policy of European Commission documents is regulated by Decision 2011/833/EU OJ L 330, 14.12.2011, p.39.

Guide developed in collaboration with Marks & Clerk Singapore LLP in June 2020

The contents of this publication do not necessarily reflect the position or opinion of the European Commission. The services of the South-East Asia IPR SME Helpdesk are not of a legal or advisory nature and no responsibility is accepted for the results of any actions made on the basis of its services. Before taking specific actions in relation to IPR protection or enforcement all customers are advised to seek independent advice.



The paper used in this product is manufactured from managed forests and is FSC certified.



Publications Office
of the European Union

Luxembourg: Publications Office of the European Union, 2020

Print ISBN 978-92-9460-028-8 doi:10.2826/022868 EA-04-20-350-EN-C
PDF ISBN 978-92-9460-029-5 doi:10.2826/499446 EA-04-20-350-EN-N