Intellectual Property and the Search for COVID-19 Vaccine

19 August 2020 | 4:00 PM to 5:30 PM (PST) | via GoToWebinar

FREE WEBINAR
Welcome to the Webinar

Moderator:

Nora Bihari
Project Manager
South-East Asia IPR SME Helpdesk
Speakers

Atty. Divina Ilas-Panganiban
Intellectual Property Committee Chairperson & Partner
ECCP & Quisumbing Torres

Atty. Amormio "Mon" C. Santiago
Senior Manager, Legal Affairs & Compliance
Roche (Philippines) Inc.

Atty. Edmund J. Baranda
External Expert – Managing Partner
South-East Asia IPR SME Helpdesk – Baranda and Associates, Rouse
Webinar Interaction Tool

Hide Control Panel here
View in Full screen mode here
Raise your hand here

Send the IP expert a question here

Webinar 24 hour technical support number:
http://support.gotomeeting.com ‘Contact Us’ section
### Overview (CEST)

<table>
<thead>
<tr>
<th>TIME</th>
<th>OVERVIEW</th>
<th>SPEAKER(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 10:10</td>
<td>Introduction to the South-East Asia IPR SME Helpdesk &amp; its Core Services</td>
<td>Nora Bihari, SEA IPR SME Helpdesk</td>
</tr>
<tr>
<td>10:55 – 11:10</td>
<td>Introduction to European Chamber of Commerce of the Philippines (ECCP)</td>
<td>Atty. Divina Ilas-Panganiban, ECCP</td>
</tr>
<tr>
<td>11:10 – 11:30</td>
<td>Q&amp;A session</td>
<td>All speakers</td>
</tr>
<tr>
<td>11:30</td>
<td>Closing</td>
<td>Nora Bihari, SEA IPR SME Helpdesk</td>
</tr>
</tbody>
</table>
Core Services – What We Offer

Enquiry Helpline

Website & Blog
Newsletter, E-Bulletin

Webinars and E-learning modules

Training Workshops

Guides and factsheets

SOUTH-EAST ASIA
IPR SME HELPDESK

Mon C. Santiago is a lawyer who works for Roche (Philippines) Inc. as Senior Manager for Legal Affairs and Compliance.

He obtained his Juris Doctor’s Degree at the Ateneo de Manila University. He started his career as a litigator. Thereafter, he became operations attorney for several multi-national corporations, and a corporate governance and ethics enforcement executive in the country’s largest telecommunications company before moving to a career in healthcare compliance.
IP Protection in the Time of COVID 19
19 August 2020

Mon C. Santiago
## COVID-19 Situation
### World, Europe, Asia

[https://www.worldometers.info/coronavirus/#countries](https://www.worldometers.info/coronavirus/#countries)  16 August 2020

<table>
<thead>
<tr>
<th>As of 16 August 2020</th>
<th>World</th>
<th>Europe</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 cases</td>
<td>21,640,763</td>
<td>3,157,917</td>
<td>5,593,020</td>
</tr>
<tr>
<td>Deaths</td>
<td>769,470</td>
<td>203,082</td>
<td>118,990</td>
</tr>
<tr>
<td>Recovered</td>
<td>14,350,104</td>
<td>1,908,639</td>
<td>4,282,593</td>
</tr>
</tbody>
</table>
# COVID-19 Situation

## Philippines


<table>
<thead>
<tr>
<th></th>
<th>As of 9:57 AM, 16 August 2020</th>
<th>As of 5PM, 16 August 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 cases</td>
<td>157,918 (+ 4,351)</td>
<td>161,253 (+ 3,420)</td>
</tr>
<tr>
<td>Deaths</td>
<td>2,600</td>
<td>2,665 (+65)</td>
</tr>
<tr>
<td>Recovered</td>
<td>72,209 (46%)</td>
<td>112,586 (+ 40, 397, 69.81%)*</td>
</tr>
</tbody>
</table>
Fueling Innovation & Advancing Healthcare
IP protection is essential.
## Developments: COVID-19 Vaccine Tracker


<table>
<thead>
<tr>
<th>PRE-CLINICAL</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>135+</td>
<td>20</td>
<td>11</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Vaccines not yet in human trials</td>
<td>Vaccines testing safety and dosage</td>
<td>Vaccines in expanded safety trials</td>
<td>Vaccines in large-scale efficacy test</td>
<td>Vaccines for early or limited use</td>
</tr>
</tbody>
</table>

[36x360]
The effectiveness of these treatments has yet to be demonstrated in large-scale, randomized clinical trials.
Doing now what patients need next
Intellectual Property and the Search for COVID-19 Vaccine: *IP Rights in the Healthcare Sector*

Atty. Edmund Jason Baranda
External Expert, South-East Asia IPR SME Helpdesk
Managing Partner, Baranda & Associates – Rouse
19 August 2020
Speaker’s Bio

Name: Atty. Edmund Jason Baranda
Firm: Baranda & Associates, Rouse
Location: Manila, the Philippines

Edmund is the Managing Partner of Baranda & Associates – A member of the Rouse Network, and the Principal & Country Manager of the Philippines business. Edmund is an IP lawyer in the Philippines with over 10 years experience. He has a background in Molecular Biology and Biotechnology and is a qualified Patent Agent. Edmund has handled the prosecution of local and international patent applications and is highly regarded by clients who value his practical and quick approach.

Edmund has extensive experience in the drafting of patent specifications, advising on freedom to operate searches and prosecution of local and international patent applications. He has also been involved in patent litigation, particularly patent cancellation and patent infringement actions in the pharmaceutical field, and trade mark/ copyright litigation. He has vast experience in search and seizure operations. Edmund is a member of the Integrated Bar of the Philippines and the New York Bar. He obtained his bachelor’s degree in law from the University of the Philippines and LL.M. from the University of Michigan Law School. Edmund has joined the South-East Asia IPR SME Helpdesk since October 2013.
Agenda

- IP rights in drugs and medicines
  - Focus on vaccines/research and development of vaccines

- Ownership of IP rights in vaccines

- Issues in IP management/licensing of vaccines
Metro Manila (CNN Philippines, August 4) — The vaccine for COVID-19 may not be available until the Philippines' Duterte volunteers to be Putin's coronavirus vaccine guinea pig

Rodrigo Duterte has praised Russia's efforts to develop a "free" COVID-19 vaccine for the Philippines. To alleviate fears, Duterte said he will offer to be "the first they can experiment on" in a public vaccination.

Unlike Philippines, Indonesia developing own coronavirus vaccine

16 hours ago
Paterno R. Esmaquel II

DOST: COVID-19 vaccine could come by mid-2021
IP rights in drugs and medicines

- Patents
  - Compositions/formulations
  - Processes for the production of the compositions/formulations
  - Products/compositions for use in surgery, therapy and diagnostic methods (excludes methods of treatment)

- Trademarks
  - Brands

- Trade secrets/Know how
  - Know-how related to the manufacturing process
IP rights in drugs and medicines

- Undisclosed test or other data submitted to FDA
  - Protected against unfair competition
  - Clinical test data protection can prevent third parties from using clinical trial data submitted to regulatory authorities to gain marketing approval for the manufacture of competing products

- Copyright
  - Pamphlets, package inserts, packaging designs

- Industrial designs
  - Packaging designs, drug delivery devices
IP rights in drugs and medicines

• If no patent in the Philippines, part of public domain so can manufacture locally

• If drug/medicine is patented, can do parallel importation which is allowed under the Cheaper Medicines Act
  • Can be tricky for vaccines
IP rights in drugs and medicines – FDA compliance

- Compliance with FDA regulations
  - Guidelines for the Registration of Drug Products under Emergency Use (DEU) for the Coronavirus Disease 2019 (Covid-2019)
  - Off-label/unapproved use
  - No patent term extension to cover the period while securing FDA approval/marketing authorization. Term of exclusive right to exploit a patented drug and medicine is effectively shortened by the time spent in securing FDA approval/marketing authorization.
Question: In the event of development of a Covid-19 vaccine, should it be subject of a patent or should it be available for all to exploit?

A. Should be covered by patent protection
B. Should be made available to all
IP rights in drugs and medicines - vaccines

https://www.bloomberg.com/features/2020-covid-vaccine-patent-price/
IP rights in drugs and medicines – vaccines

Development of Drugs & Vaccines

**DISCOVERY**
Researchers discover new molecular compounds with potential benefits against a disease

**PRE-CLINICAL RESEARCH**
Discovered beneficial compounds undergo laboratory and animal testing to identify dosing and toxicity levels.
The findings will be used to decide whether the beneficial drug qualifies for testing in human subjects.

**PHASE I**

- **Participants:** 20 - 100 healthy volunteers
- **Length of study:** several months
- **Purpose:** determine safety & dosage
  - about 70% will move to the next phase

**PHASE II**

- **Participants:** hundreds of volunteers with the target condition or with exposure to the disease
- **Length of study:** several months to years
- **Purpose:** assess efficacy & safety (short-term side effects)
  - about 33% will move to the next phase

**PHASE III**

- **Participants:** 300 to 3,000 volunteers with the target condition or with exposure to the disease
- **Length of study:** < 1 to 4 years
- **Purpose:** assess efficacy & safety (monitoring of adverse reactions)
  - about 25-30% will move to the next phase

**FDA PRODUCT REGISTRATION**
- Certificate of Product Registration (CPR)
- Phase IV Clinical Trial to assess long-term efficacy & safety
- Post-Marketing Surveillance
- Pharmacovigilance
- Compliance Monitoring

IP rights in drugs and medicines – vaccines

How a new vaccine is developed, approved and manufactured

The Food and Drug Administration (FDA) sets rules for the three phases of clinical trials to ensure the safety of the volunteers. Researchers test vaccines with adults first.

**PHASE 1**
20-100 healthy volunteers
- Is this vaccine safe?
- Does this vaccine seem to work?
- Are there any serious side effects?
- How is the size of the dose related to side effects?

**PHASE 2**
several hundred volunteers
- What are the most common short-term side effects?
- How are the volunteers’ immune systems responding to the vaccine?

**PHASE 3**
hundreds or thousands of volunteers
- How do people who get the vaccine and people who do not get the vaccine compare?
- Is the vaccine safe?
- Is the vaccine effective?
- What are the most common side effects?

FDA licenses the vaccine only if:
- It’s safe and effective
- Benefits outweigh risks

Vaccines are made in batches called lots.
Manufacturers must test all lots to make sure they are safe, pure and potent. The lots can only be released once FDA reviews their safety and quality.
The FDA inspects manufacturing facilities regularly to ensure quality and safety.

FOR MORE INFORMATION, VISIT HTTPS://WWW.FDA.GOV/CBER

https://www.cdc.gov/vaccines/hcp/conversations/ensuring-safe-vaccines.html
IP rights in drugs and medicines – vaccines

The complexity of vaccine IP

- A modern vaccine is protected by multiple levels of IP often licensed from multiple partners

Source: https://www.who.int/phi/news/Presentation15.pdf
Why vaccines are different to drugs

- True 'generic' vaccines do not exist
- Complex biological drugs: equivalence can not be demonstrated by simple tests. Full clinical safety and efficacy (or surrogate) testing of 'copy' required.
- Even in absence of patent barriers numerous barriers to vaccine production
  - Expertise, know how, previous clinical data
  - Cost (investment, production)
  - Clinical studies (possibly very large if comparing efficacy to existing vaccine)

Source: https://www.who.int/phi/news/Presentation15.pdf
# Ownership of IP rights in vaccines

<table>
<thead>
<tr>
<th>Vaccine component</th>
<th>Possible IP</th>
<th>Possible ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA sequence</td>
<td>Patent</td>
<td>Vaccine proponent</td>
</tr>
<tr>
<td>Expression</td>
<td>Patent (process)/Know how</td>
<td>Vaccine proponent</td>
</tr>
<tr>
<td>Antigen</td>
<td>Patent/Know how</td>
<td>Vaccine proponent</td>
</tr>
<tr>
<td>Platform/Process (Expression-Antigen)</td>
<td>Patent (process)/Know how</td>
<td>Vaccine proponent</td>
</tr>
<tr>
<td>Vehicle</td>
<td>Patent/Know how</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; party</td>
</tr>
<tr>
<td>Immunostimulator</td>
<td>Patent/Know how</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; party</td>
</tr>
<tr>
<td>Adjuvant</td>
<td>Patent/Know how</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; party</td>
</tr>
<tr>
<td>Excipient</td>
<td>Patent/Know how</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; party</td>
</tr>
<tr>
<td>Delivery device</td>
<td>Patent (product and process)/Know how</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; party</td>
</tr>
<tr>
<td><em>Undisclosed test or other data submitted to FDA</em></td>
<td>Protected against unfair competition</td>
<td>Vaccine proponent</td>
</tr>
</tbody>
</table>
Ownership of IP Rights in Vaccines

- Various IPs involved in different stages of developing the vaccine
- Pharmaceutical companies joining ventures
- Pharmaceutical companies and governments
Ownership of IP rights in vaccines

Examples of IP relevant to basic vaccines

- Use of pertactin/69K in acellular pertussis vaccine
  - GSK / Medeva
  - Work-around: don’t include it (FHA/PT)

- Combination vaccines containing low doses of T,P, etc
  - Use higher doses etc.

- Stick to 'old' formulation or develop work-arounds
  - Requires R&D capacity.

Source: https://www.who.int/phi/news/Presentation15.pdf
Ownership of IP Rights in Vaccines

Sanofi and GSK to join forces in unprecedented vaccine collaboration to fight COVID-19
Ownership of IP Rights in Vaccines

Modernisa says uncertain about coronavirus vaccine patent exclusivity
Ownership of IP rights in vaccines – patent applications

An initiative of the Ownership of IP rights in vaccines – patent applications

Ownership of IP rights in vaccines – patent applications

4. **202011018851** CORONAVIRUS (COVID-19) DIAGNOSTIC REAGENTS KITS.
   
   Int.Class **C07K**
   
   Appliance **202011018851** Applicant RAMU DUBEY [ASSISTANT PROFESSOR] Inventor RAMU DUBEY [ASSISTANT PROFESSOR]
   
   The invention “CORONAVIRUS (COVID-19) DIAGNOSTIC REAGENTS KITS” is an outbreak of a virulent respiratory virus, now known as Severe Acute Respiratory Syndrome (COVID-19), was identified in Hong Kong, China, India (1920-2020) and a growing number of countries around the world in 2019-2020. The invention relates to nucleic acids and proteins from the COVID-19 coronavirus. These nucleic acids and proteins can be used in the preparation and manufacture of vaccine formulations, diagnostic reagents, kits, etc. The invention also provides methods for treating COVID-19 by administering small molecule antiviral compounds, as well as methods of identifying potent small molecules for the treatment of COVID-19. The invention also relates to diagnostic reagents, kits (comprising such reagents) and methods which can be used to diagnose or identify the presence or absence of a COVID-19 virus in a biological sample. The invention further includes non-coding COVID-19 viral poly nucleotide sequencess, COVID-19 viral sequences encoding for non-immunogenic proteins, conserved and variant COVID-19 viral polynucleotide sequences for use in such diagnostic compositions and methods. The invention further relates to vaccine formulations comprising one or more COVID-19 virus antigens and one or more other respiratory virus antigens. Additional respiratory virus antigens suitable for use in the invention include antigens from influenza virus, human rhinovirus (HRV), paramyxovirus (RSV), adenovirus, metapneumovirus, and rhinovirus. The additional respiratory virus antigen could also be from a coronavirus other than the COVID-19 coronavirus. Preferably, the additional respiratory virus antigen is an influenza viral antigen.

5. **202041025583** AN AI-BASED SOCIAL DISTANCING SOLUTION [SDAD]
   
   Int.Class **06F9 50/00**
   
   Appliance **202041025583** Applicant Moorthi Kanagaraj Inventor Moorthi Kanagaraj
   
   In the eye of a pandemic, coronavirus disease 2018 (COVID-19) is suspected to originate from an animal host (zoonotic origin) followed by human-to-human transmission. At present, we are not able to effectively treat COVID-19, since neither approved vaccines nor specific antiviral drugs for treating human CoV infections are available. Most nations are currently making efforts to prevent the further spreading of this potentially deadly virus by implementing preventive and control strategies. This creates the necessity to Develop new algorithm for checking the Social Distance maintenance between two persons according to the guidelines WHO. The proposed solution SDAD plays a crucial role in supporting the scientific community on the frontlines fighting the virus. This also brings in the concept of edge computing to verify different attributes regarding social distance. This requirement is fulfilled by that of ARM based processor. It also includes both Bluetooth and Wi-Fi which makes the prototyping easier for IoT Solutions to view the data anywhere from the world.

6. **202011018349** NANO COATING MASK TO PREVENT COVID-19 INFECTION UTILIZING BIODEGRADABLE POLYMER, NANO-MATERIALS AND INDIAN HERBAL MICROCAPSULES.
   
   Int.Class **A61K**
   
   Appliance **202011018349** Applicant DR VVINCE VIMAL [ASSOCIATE PROFESSOR] Inventor DR VVINCE VIMAL [ASSOCIATE PROFESSOR]
   
   Viruses, bacteria and fungi became the major problems nowadays and there is a lot of research being done in the development of the personal protective gears such as drapes, gowns, and the masks. These PPEs are really needed for the protection in the era of the Pandemic. These specific PPEs are required to protect the health workers and the police who are working 24 hours for the safety of the civilians. Currently, a huge outbreak of the COVID-19 pandemic is going on in the entire world, and till now there is no vaccination is available. However, globally, scientists are working very hard for the development of the vaccine for this COVID19 Pandemic. But until they found the solution for this problem, we need to follow the health guidelines issued by the health ministry for our safety. Because of that, we are working specifically towards the making of the new mask which is biodegradable and has antiviral and antibacterial properties. In this invention, we elaborate the development of the novel biodegradable Covid19 mask, which is by reinforcing the nano material and adding an Indian herb Tylophora Indica, having antibacterial and antiviral properties.
7. **2020100400** PROPOSED THERAPY TO REDUCE EFFECTS OF VIRAL INFECTIONS [MAY HELP WITH COVID-19] 16 MAR. 2020

**Int.Class** A61K 31/706  
**Appl.No** 2020100400  
**Applicant** Thompson, Edgar Geoffrey MR  
**Inventor**

PROPOSED THERAPY TO REDUCE EFFECTS OF VIRAL INFECTIONS The disclosed proposed therapy to reduce effects of viral infections is a combination of lifestyle changes, vitamin supplements and prescription medicines that will reduce the impact of viral infections by boosting the body's immune system. The outcomes of adopting and implementing these strategies will amaze both young and older people. For example, younger people may only have to implement the lifestyle changes to have an extremely healthy outcome.

8. **2020901165** WOOPWOOP IS A SOCIAL DISTANCING APP DESIGNED TO TACKLE COVID-19. WITH NO VACCINE AVAILABLE, THE ONLY EFFECTIVE WAY OF REDUCING INFECTIONS AND THEREFORE SAVING MILLIONS LIVES ACROSS THE WORLD APPEARS TO BE ISOLATION AND SOCIAL DISTANCING MEASURES. WHILE SOCIAL DISTANCING IS RECOMMENDED AND MANDATORY IN MANY COUNTRIES, APPLICATION OF SOCIAL DISTANCING MEASURES IS OFTEN LENIENT OR IMPrACTICAL. THAT'S WHERE WOOPWOOP COMES IN. WOOPWOOP KEEPS THE USERS OF SMARTPHONES SOCIALLY APART - 1M, 1.5M OR 2M DEPENDING UPON THE RULES IN EACH COUNTRY.

**Int.Class**  
**Appl.No** 2020901165  
**Applicant** chalise, kiran MR  
**Inventor**

Issues in IP management/licensing of vaccines

- Patents as a barrier in the development/production of vaccines
  - May need to obtain license to use some vaccine components/processes, e.g., formulations, adjuvants, etc.
  - Consider work-arounds but R&D capacity is needed

- New vaccines, e.g., Covid-19 vaccine, most likely to have
  - Broad patent protection
  - Wide geographical scope
Issues in IP management/licensing of vaccines

- Need to balance between public health needs, especially in developing countries, and the commercial incentives required by vaccine developers and manufacturers
Issues in IP management/licensing

• Licensing opportunities for Covid-19
Poll Question 2

Question: Can the Philippine government use a patented Covid-19 vaccine without the patent owner’s authority?

A. Yes
B. No
Issues in IP management/licensing

• Can PH government compel the owners of patents to license other manufacturers to make the vaccines or medicines?
  • Sec. 93 of the IP Code – Compulsory Licensing
    - License to exploit a patented invention, even without the agreement of the patent owner
    - Circumstances that will give ground for compulsory licensing include the following:
      "93.1. National emergency or other circumstances of extreme urgency; " and
      "93.2. Where the public interest, in particular, national security, nutrition, health or the development of other vital sectors of the national economy as determined by the appropriate agency of the Government, so requires."

• Sec. 93-A of the IP Code – Special Compulsory Licensing
  - special compulsory license for the importation of patented drugs and medicines
Issues in IP management/licensing

• The Philippine Supreme Court (SC) has consistently upheld the grant of compulsory license in cases where the patent relates to medicine and is therefore necessary for public health.

**BARRY JOHN PRICE, et. al., vs UNITED LABORATORIES, G.R. No. 82542, 29 September 1988**

- SC upheld grant of compulsory license to United Lab for Patent No. 13540 for “aminoalkyl furan derivatives”, used as component in manufacturing anti-ulcer medicine.

- SC declared there is no error in granting compulsory license in this case involving patented invention relating to medicine and is necessary for public health.
Issues in IP management/licensing

• The Philippine Supreme Court (SC) has consistently upheld the grant of compulsory license in cases where the patent relates to medicine and is therefore necessary for public health.

SMITH KLINE & FRENCH LABORATORIES, LTD, vs COURT OF APPEALS, et. al., G.R. No. 121867, 24 July 1997
- SC upheld grant of compulsory license to Doctors Pharmaceuticals Inc. for Patent No. 12207 for patent of the drug Cimetidine.
- SC noted that the patented invention relates to medicine.
Issues in IP management/licensing

• Compulsory licensing under the Intellectual Property Code of the Philippines (1 January 1998) (“IP Code”)
  - No compulsory license applied for and granted under the IP Code so far
  - There is one petition for issuance of compulsory license filed under Section 93-A of the IP Code for importation of Lopinavir/Ritonavir but this was dismissed based on compromise agreement.
ABOUT ECCP

The ECCP is a bilateral foreign chamber that promotes European interests in the Philippines and vice versa. With close to 700 members, the ECCP offers a strong business network that holds great potential in translating into tangible business opportunities. It is a unique organization that offers membership as well as professional business services to members and clients.
ADVOCACY COMMITTEES

AGRICULTURE, AUTOMOTIVE, AVIATION, CUSTOMS, ENVIRONMENT & WATER, FOOD & BEVERAGE, HEALTHCARE, HUMAN CAPITAL, ICT-BPM-KPM, INFRASTRUCTURE & TRANSPORTATION, INTELLECTUAL PROPERTY, INNOVATIONS, REAL ESTATE, RENEWABLE ENERGY & ENERGY EFFICIENCY, SUSTAINABILITY, TAX & FINANCIAL SERVICES, TOURISM, WOMEN IN BUSINESS, YOUNG PROFESSIONALS
INTELLECTUAL PROPERTY COMMITTEE MEETINGS

Intellectual Property Committee Meeting
26 June 2019

Intellectual Property Committee Meeting with IPOPHIL Officials
13 December 2019
Managing Intellectual Property During the COVID-19 Pandemic
For more information, visit www.eccp.com or contact us at info@eccp.com or advocacy@eccp.com
Thanks for your attention

Questions?
# SEA Helpdesk – Upcoming Webinars

<table>
<thead>
<tr>
<th>Date</th>
<th>Upcoming Webinar</th>
<th>Speaker</th>
</tr>
</thead>
</table>
| Mon 31 Aug | **How to take advantage of international treaties when applying for a Patent in South-East Asia?** | – Wai Yeng Chan  
Head, IP Strategy, Taylor Vinters Via LLC.                                                   |
| Tue 8 Sep  | **What to know about Smart Cities in South-East Asia: Opportunities and Risks**    | – Marianne Tan  
Regional Director, Singapore Economic Development Board (EDB)                                   |
|            |                                                                                  | – James Kinnaird  
External Expert, SEA IPR SME Helpdesk. Partner, Marks & Clerk Singapore LLP.                 |