

KERATAN AKHBAR-AKHBAR TEMPATAN
TARIKH: 25 JULAI 2017 (SELASA)

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Supporting STEM initiatives

BY FARHANA BAHARI

In an effort to reverse the declining numbers of students taking up Science, Technology, Engineering and Mathematics (STEM) subjects, ExxonMobil has stepped up its support by contributing a total of RM370,000 to the 2017 National Science Challenge (NSC) and to the Malaysian delegation to the International Mathematical Olympiad (IMO) in Rio de Janeiro, Brazil in July this year.

Speaking at the cheque presentation ceremony recently, Education Deputy Minister Datuk P. Kamalanathan said: "The number of students taking up STEM subjects is declining."

"According to Education ministry, in 2014, only 46.7 per cent of students in secondary schools and tertiary institutions enrolled in STEM fields," said the deputy minister.

In as early as 1967, the government had taken various steps to achieve a 60 to 40 per cent ratio of STEM to arts subjects taken by Malaysian students in school. To date, however, the percentage has not been achieved.

Stressing the need for more Malaysian students to engage in STEM subjects, Kamalanathan said that initiatives have to be put into effect as early as in primary schools.

"To promote STEM in secondary schools is a bit too late. Students develop their interest in



P. Kamalanathan (centre) joining Edward Graham (fourth from right) with students representing Malaysia at the International Mathematical Olympiad after handing over the replica of a cheque at ExxonMobil Powering the Future of Malaysian STEM Talents at the Mandarin Oriental Hotel. PIC BY ASWADI ALIAS

science when they are in primary school and may have already decided what they want to pursue," he added. Despite this, he commends initiatives such as the NSC and IMO in promoting

STEM to secondary students.

Chairman of the ExxonMobil Subsidiaries in Malaysia, Edward Graham explained that the company has always emphasised the need to

discover and nurture potential talent.

"In the energy industry where demand continues to increase, STEM experts are highly sought after to create solutions for tomorrow."

The annual NSC — already in its 28th year — is a long-standing effort by the Academy of Sciences Malaysia under the Ministry of Science, Technology and Innovation. It is a shared mission to build and retain a highly skilled and trained local workforce in STEM by promoting greater interest in STEM subjects among students.

"By participating in programmes such as the National Science Challenge and the International Mathematical Olympiad, we are able to give students a chance to gain additional exposure and experience that extends beyond the classroom environment," added Graham.

The winning team of the National Science Challenge would be awarded a life-time opportunity to witness the prestigious international Nobel Prize Awards ceremony and Nobel Lectures, held annually in Sweden, in December.

This is the eighth year ExxonMobil is funding the Malaysian delegation to participate in the IMO. The IMO sees between 10,000 and 12,000 applications from Malaysian students yearly.

KERATAN AKHBAR
NEW STRAITS TIMES (OPINION) : MUKA SURAT 14
TARIKH : 25 JULAI 2017 (SELASA)

COOPERATION BETWEEN STAKEHOLDERS

CYBERSECURITY ECOSYSTEM OF TOMORROW

Conflict between govt, private sector occurs due to the Internet's structure, which is not designed to keep cyberspace secure, writes **FARLINA SAID**

On July 15, Indonesia announced a partial ban on Telegram, which swiftly responded by shutting down the channels reported by the Indonesian government. The ban seemed a culmination of the government's frustration over Telegram's silence on complaints about channels used to recruit Indonesians into militant groups.

The application was confirmed by Indonesia's National Police chief General Tito Karnavian as one of the means to receive terror-related materials in the recent stabbing of two police officers at a mosque in Jakarta. Yet, it is perhaps the lack of reciprocity from Telegram on complaints made since last year, which may have escalated tensions in the spheres of governance in cyberspace.

Telegram is not the first application caught in a skirmish with states over national security concerns. Conflict between the government and private sector occurs due to the structure of the Internet, which is not designed to keep cyberspace secure from threats to networks or discrimination against the transfer of information.

A network for a small community back then, the Internet was created with the presumed understanding that actors belonged in a close circle and were essentially benevolent. However, the expansion of cyberspace in the 1990s migrated more than 50 million users online.

In December 2000, an ITU report estimated that there were four million Malaysian users on

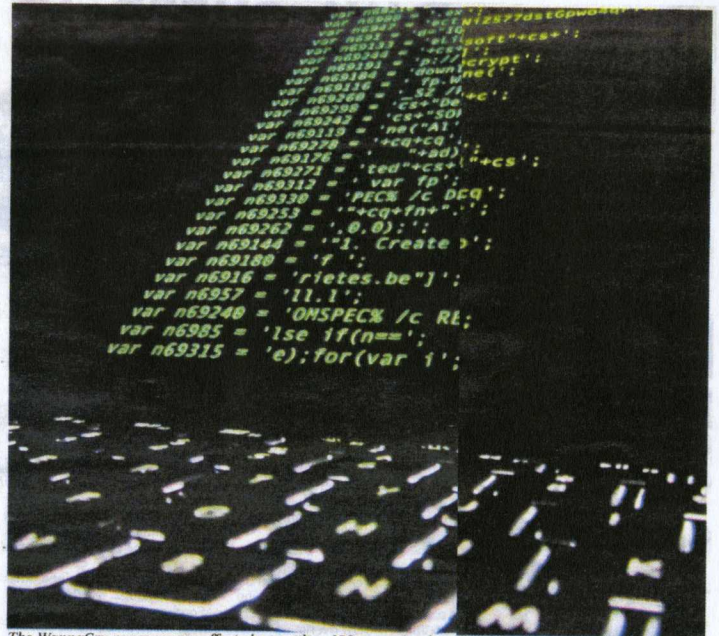
line and last year, the figure grew to 21 million.

The greater integration of cyberspace in daily life increases the surface for cyberattacks. In 2015, **CyberSecurity Malaysia** recorded 1,714 incidents, but the first quarter of last year registered 2,470 incidents.

The private sector drives Internet patronage, with technology giants such as Google, Microsoft and Facebook providing essential services for Internet users. The technology community's large footprint online translates offline and impinges on traditional roles in the security architecture. The government's role as a user of such services presents difficulties to the state's responsibility as the protector of the population.

China's cyber laws passed last year bring data centres to Chinese soil, where corporations are required to host data locally. This places control over data within the regulations of China, thus empowering the state to secure information systems. However, this is not the case with other nations, as Indonesia's situation with Telegram illustrates. States have to work with private companies to ensure the experience online and offline is protected.

Yet, harmonisation can be an uphill climb, especially where interests do not align. The widely broadcasted legal kerfuffle between Apple and the United States Federal Bureau of Investigation (FBI) stemmed from the FBI's request to unlock an iPhone belonging to the San Bernardino shooter in 2015. The FBI's concern relates to strong encryption



The WannaCry ransomware affected more than 150 countries, but the Malaysian Communications and Multimedia Commission did not receive any reports. Yet local cybersecurity firm LGMS found WannaCry in at least 10 devices. PIC FROM WIKIMEDIA COMMONS

that prohibits authorities from solving cases to stop terrorist attacks swiftly. The FBI's request was for Apple to provide a "backdoor" to Apple's programmes in the interest of national security. Apple declined the request on the grounds of data privacy.

That cyberspace provides an avenue to air grievances outside the control of governments was addressed in the United Nations Human Rights Committee general comment No. 34 following the Arab uprisings in 2011. Encryption and anonymity are attached to the concept of freedom of expression, which is most important to end users.

Corporations, programmers and data centres that are suddenly called to play the role of honest brokers may experience difficulties in suiting up as participants in security. National security issues are not their initial trade, and perspectives on national security may differ in accordance to locality – terrorism, its definitions and its amplification is only one national security concern. Additionally, parts of Asia where national security is

seen as the sole responsibility of the state may not have the institutional knowledge and mechanisms of a multi-stakeholder system. If there is little trust between stakeholders, there can be suspicion on the part of the private sector towards the intention of states, as the Apple versus FBI case suggests.

Roles and responsibility should link cybersecurity players and authorities in a smooth system online and offline. The fear of over-regulation or being caught amid a political fight may lose private sector interest to participate.

However, failure to construct a healthy ecosystem may affect the direction of policies. While the WannaCry ransomware affected more than 230,000 computers in more than 150 countries, the Malaysian Communications and Multimedia Commission did not receive a single report, though this is not because there were no incidents in Malaysia. LGMS, a cybersecurity firm in Malaysia, found WannaCry in at least 10 devices. In the current threat to cyberspace, there is tremendous pressure for the fledgling

environment of information sharing between stakeholders in Malaysia to mature rapidly.

The National Cyber Coordination and Command Centre (NC4) was formed with the intention of coordinating cooperation between public and private sectors. Yet, NC4 was created for cyber threats of national proportions and may not be the platform of outreach needed for threats not limited to cyberspace.

Details of the cybersecurity bill passed by Deputy Prime Minister Datuk Seri Dr Ahmad Zahid Hamidi to Attorney-General Tan Sri Mohamed Apandi Ali are still pending, but one hopes it addresses the gaps in the ecosystem and aims to remedy them.

With the private sector expected to play a large role in providing cybersecurity services, there has to be mechanisms that ensure national security is fortified without sacrificing private sector innovation. After the Telegram debacle, cyberspace users need the giants to play well together for a safe experience online and offline.

farlina@isis.org.my

The writer is an analyst on foreign policy and security studies at the Institute of Strategic and International Studies Malaysia

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Sistem Amaran Banjir Di Pantai Timur Beroperasi November

Tarikh kemaskini: 24/07/2017

KUALA LUMPUR, 24 Julai (Bernama) -- Penduduk di pantai timur akan dimaklumkan seminggu sebelum banjir melanda apabila Program Sistem Amaran Awal Banjir (Prab) mula beroperasi November ini.

Menteri Sumber Asli dan Alam Sekitar, Datuk Seri Dr Wan Junaidi Tuanku Jaafar berkata pada masa ini sebanyak 350 stesen hidrologi sedang giat dipasang di kawasan lembangan sungai di Kelantan, Pahang dan Terengganu bagi membolehkan sistem berkenaan beroperasi.

"Sistem yang berpusat di bawah Jabatan Pengairan dan Saliran (JPS) ini boleh meramal banjir seawal tujuh hari berbanding sistem sedia ada sekarang iaitu seawal tiga hari," katanya kepada pemberita pada Majlis Hari Raya JPS di sini hari ini.

Turut hadir Ketua Pengarah JPS, Datuk Seri Zulkefli Hassan.

Katanya sistem yang akan dikawal oleh Pusat Ramalan Awal Banjir Negara (PRABN) di bawah JPS ini akan berfungsi dengan menyerap data hujan daripada radar melalui stesen hidrologi yang dipasang di kawasan yang dikesan selalu berlaku banjir.

Wan Junaidi berkata data yang dikumpul kemudian disalurkan kepada agensi berkaitan termasuk Agensi Pengurusan Bencana Negara (Nadma) dan Angkatan Pertahanan Awam Malaysia (APM) bagi menghadapi banjir yang akan melanda.

"Sistem ini boleh meramal lebih awal bila banjir akan berlaku dan sebesar mana impaknya berdasarkan data dari radar yang diperolehi, Jadi pihak berkenaan mempunyai masa yang banyak untuk membuat persediaan termasuk urusan memindahkan orang ramai sebelum banjir terjadi," katanya.

Beliau berkata sistem yang mendapat kerjasama **Jabatan Meteorologi Malaysia** ini akan diperluaskan seluruh negara kelak.

Prab di tiga negeri itu dijangka siap sepenuhnya tahun depan tetapi sudah boleh beroperasi mulai November ini, katanya.

-- BERNAMA



Amaran Angin Kencang, Laut Bergelora - METmalaysia

Tarikh kemaskini: 24/07/2017

KUALA LUMPUR, 24 Julai (Bernama) -- Angin kencang Barat Daya dengan kelajuan 40-50 kilometer sejam (kmsj) dan ombak mencapai ketinggian sehingga 3.5 meter dijangka berlaku di kawasan perairan Reef North, Layang-layang dan Palawan sehingga Jumaat ini.

Jabatan Meteorologi Malaysia (METMalaysia) menyatakan angin kencang dan laut bergelora itu adalah berbahaya kepada bot-bot kecil, rekreasi laut dan sukan laut.

Selain itu, ribut petir di perairan Kelantan dan Pahang dijangka berterusan sehingga lewat malam ini, kata jabatan itu dalam kenyataan hari ini.

"Keadaan ini boleh menyebabkan angin kencang sehingga 50 kmsj dan laut bergelora dengan ombak mencapai ketinggian sehingga 3.5 meter dan berbahaya kepada bot-bot kecil," kata jabatan itu.

-- BERNAMA

Umum banjir **seminggu** awal

■ Sistem PRAB mula beroperasi November depan boleh ramal kehadiran bah

Kuala Lumpur

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Dr Wan Junaidi



New early flood warning system in November



DID director of water source management and hydrology Datuk Nor Hisham Mohd Ghazali explains how the early warning system works. — Picture by Hari Anggara.

By Jerry Choong
jerrychoong@mmail.com.my

KUALA LUMPUR — A new flood warning system to start by year's end will give people living in flood-prone areas more time to prepare themselves and evacuate.

Natural Resources and Environment Minister Datuk Seri Wan Junaidi Tuanku Jaafar said the National Flood Forecasting and Warning System would begin operations in November.

"Currently, 350 hydrology stations are being installed at river basins in Pahang, Terengganu and Kelantan. They are expected to be fully operational in time for

the northeastern monsoon," he said.

The system will be operated by the Department of Irrigation and Drainage (DID), and functions by absorbing rainfall data using the radar dishes situated at the stations.

As part of efforts to prevent the flooding disaster that engulfed north of the peninsula at the end of 2014, Wan Junaidi said, the system had the additional advantage of predicting when floods would take place much earlier.

"The existing system can only pinpoint when floods will occur at most three days earlier, but the new system will be able to do so seven days ahead," he said during the DID Hari Raya open house yesterday.

"This will provide sufficient time to prepare, including mass evacuation," yesterday.

The information provided by the system will also be of importance to the National Disaster Management Agency, Civil Defence Department, Fire and Rescue Department, police and the armed forces in coordinating their flood rescue efforts.

"Eventually, we hope to be able to expand the system nationwide, especially with the help of the **Meteorological Department**, which has agreed to cooperate," he said.

Wan Junaidi also said another project in Kelantan to fix and deepen river banks in the state had commenced its tender process with RM560 million in contracts for bidding by private companies.

GLOBAL WARMING

Disaster in the Arctic?

With global warming, in the event of a disaster in the Northern sea route, search and rescue operations will be difficult, writes **HENRY FOUNTAIN**

WHEN the *Crystal Serenity*, a 1,000-passenger luxury liner, sails in August on a month-long Arctic cruise through the Northwest Passage, it will have a far more utilitarian escort: a British supply ship.

The *Ernest Shackleton*, which normally resupplies scientific bases in Antarctica, will help with the logistics of shore excursions along the route from Alaska to New York through Canada's Arctic Archipelago.

But, the escort ship will also be there should the *Serenity* become stuck in ice or something else goes wrong. The *Shackleton* can manoeuvre through ice and will be carrying emergency water and rations for the liner's passengers and 600 crew members, oil spill containment gear and a couple of helicopters.

As global warming reduces the extent of sea ice in the Arctic, more ships — cargo carriers as well as liners like the *Serenity* taking tourists to see the region's natural beauty — will be plying the far northern waters. Experts in maritime safety say this raises concerns about what will happen when something inevitably goes wrong.

"It's what keeps us up at night," said Amy A. Merten, who works on maritime response issues at the National Oceanic and Atmospheric Administration.

Although nations with Arctic territory, including the United States, have agreed to assist each other in the event of disaster, there is very little emergency infrastructure in either US or Canadian Arctic waters, or in Russia along what is known as the Northern Sea Route.

What keeps Merten and other experts on edge is the possibility that a ship could have a problem that would require an extensive search-and-rescue operation.

There are relatively few government icebreakers or cutters in the region, and a long-range air lift by helicopters would be extremely difficult. So an emergen-

cy operation would most likely rely heavily on other commercial ships that happen to be in the area. A rescue could take days.

"There's just no infrastructure for response," Merten said. "Things could be okay. But, it would be a difficult situation."

Although the Arctic has not been the site of a major incident involving a cruise ship in recent years, a smaller liner, the *Explorer*, sank off the Antarctic Peninsula in 2007 after striking an iceberg. Fortunately, several other ships were within 160km of the stricken ship, and the 150 passengers and crew were rescued after five hours in lifeboats.

Commercial ships in northern waters have occasionally run into trouble, sometimes with deadly results. In December 2004, the *Selendang Ayu*, a 225m-long Malaysian ship carrying soybeans and more than 1,000 tonnes of fuel oil, suffered an engine failure, drifted and eventually ran aground and broke apart in the Aleutian Islands in Alaska. Six crew members died when a Coast Guard helicopter that had just picked them up was swamped by a wave.

Sea ice, which completely covers the Arctic Ocean in winter, gradually melts in the spring and reaches its minimum extent in September. That minimum has declined by about 13 per cent per decade compared with the 1981 to 2010 average, according to the National Aeronautics and Space Administration. Scientists say warming, which is occurring faster in the Arctic than any other region, is largely responsible.

As climate change continues, more of the Arctic will be open to ships and for longer. Some scientists predict that the region could be completely ice-free in summers by the 2030s or 2040s.

But, the amount of activity overall in the region is still small, and a huge rush to the Arctic is not expected anytime soon. Even as ice coverage continues to shrink, conditions will remain variable enough that no shipping

company with tight deadlines will try regular Arctic service.

"It only takes a little bit of ice to ruin your day," said Timothy Keane, senior manager for Arctic operations for Fednav, a bulk shipping operator based in Montreal. "So if ice is in a particular area that you need to go, you're still blocked from getting there."

But, in September, Russia will start shipping liquefied natural gas to Europe and Asia from Siberia, using ice-strengthened 305m-long tankers that, by turning around and moving stern-first, can churn through ice up to 2m thick.

And while the *Crystal Serenity*, with its casino and other amenities, was not built with polar cruising in mind, more than two dozen smaller "expedition" class ships, designed to carry up to 200 passengers and handle moderate ice conditions, are under construction around the world.

The amount of shipping in the Arctic is so small that it is difficult to justify the need for additional icebreakers or naval cutters in the region, or for a helicopter base that could aid ships far from land.

"You need investment and you need infrastructure to cover this gap," said Lawson W. Brigham, a former captain of US Coast Guard icebreakers and now on the faculty at the University of Alaska, Fairbanks.

Given the lack of infrastructure, many experts argue that the focus should be on preventing incidents — through better training and certification of mariners, and safety requirements for ships. A new Polar Code, developed by the International Maritime Organisation, sets some safety standards, but critics say it does not go far enough and includes almost no environmental protection provisions.

Even relatively simple monitoring of ships can reduce the potential for disaster. Exchange operators can contact vessels that are getting too close to shore — a ship should usually be far from land so that, in the event of a mechanical problem, there is time for repairs without running aground — and have them change course. **NYT**

The writer covers climate change and other science-related subjects

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