

# MOSTI 2014



KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI  
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION





KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI  
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

# **MOSTI** 2014

Cetakan Pertama 2015


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**INOVASI PEMACU**  
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Agensi Angkasa Negara /  
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Direktorat Oseanografi  
Kebangsaan /  
*National Oceanography  
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DATUK DR. EWON EBIN

Menteri Sains, Teknologi dan Inovasi

*Minister of Science, Technology and Innovation*



# PERUTUSAN MENTERI

## Message From The Minister

Salam hormat dan salam sejahtera.

Buku Laporan Prestasi MOSTI 2014 untuk melihat sejauh mana MOSTI telah melaksana peranan dan tanggungjawabnya untuk memacu pembangunan negara melalui pembudayaan sains, teknologi dan inovasi. Walaupun sukar untuk mengukur pencapaian sebenar, MOSTI masih boleh berbangga kerana prestasi MOSTI dari segi KPI adalah pada tahap yang baik di mana MOSTI telah mampu mengekalkan kecemerlangannya dengan mencapai tahap KPI 134%.

Kita juga telah melakar kejayaan dalam Tahun Pengkomersilan MOSTI 2014 apabila sebanyak 104 produk R&D telah berjaya dikomersilkan sementara 932 lagi berpotensi dikomersilkan. Dalam pada itu, warga MOSTI berkesempatan menghulur bakti dalam dua kes kemalangan pesawat berkenaan dan menghantar seramai 343 orang sukarelawan MOSTI dalam enam Misi Ops Banjir ke negeri Pahang.

Lakaran kejayaan MOSTI bukan sahaja terukir di peringkat tempatan tetapi juga di peringkat antarabangsa apabila beberapa agensi kita telah berjaya merangkul anugerah seperti *Plants Mutation Breeding Award* oleh Agensi Nuklear Malaysia dan *Global Level In The Global Cybersecurity Index* oleh CyberSecurity Malaysia.

Kejayaan MOSTI mengekalkan prestasi ini diharapkan akan dapat dikekalkan dalam tahun 2015 kerana banyak lagi agenda yang kita rancang untuk mencapai misi dan visi kementerian. Antara agenda yang bakal dipacu MOSTI ialah menjadikan Malaysia 'Negara Maju Sains' selaras dengan Dasar Sains, Teknologi dan Inovasi Negara (DSTIN), persediaan Rancangan Malaysia Ke-11, penambahbaikan pengurusan Dana R&D&C yang melibatkan dana inovasi sosial dan usaha merealisasikan Majlis Teknologis Malaysia (MBOT).

Akhir kata, saya ingin menyeru semua warga MOSTI supaya sama-sama mengamalkan nilai kerja yang bermutu tinggi, amanah, berintegriti, berinovatif dan kreatif serta mengamalkan cara kerja yang pantas. Kita tinggalkan tahun 2014 dengan penuh kenangan dan kita janjikan tahun 2015 dengan kecemerlangan.

Sekian, terima kasih.

*Greetings,*

*MOSTI Performance Report 2014 booklet is to announce MOSTI's achievements in implementing its role and responsibilities in driving the country's development through science, technology and innovation. While it is difficult to measure the actual progress, MOSTI can be commended for its good performance in KPI terms, in which it has achieved a KPI of 134%.*

*We have also made great strides in MOSTI Commercialisation Year 2014 when 104 R&D products have been successfully commercialised while another 932 have the potential to be commercialised. In the meantime, MOSTI is fortunate to extend its hand during two aircraft accidents and also sent a total of 343 MOSTI volunteers in six Flood Ops Mission to Pahang.*

*MOSTI has also attained success not only locally but also in the international arena with awards won by a number of its agencies, such as Plants Mutation Breeding Award by the Malaysian Nuclear Agency and Global Level In The Global Cybersecurity Index by CyberSecurity Malaysia.*

*This performance is expected to sustain in 2015 with many more agendas in line to achieve the mission and vision of the ministry. As one of the agenda is aimed in making Malaysia a "Scientifically Advanced Nation" in accordance with the Science, Technology and Innovation (DSTIN) Policy, preparations for the 11th Malaysia Plan and improvements in R&D&C fund management are made involving social innovation funding and efforts to realise the Malaysian Board of Technologists (MBOT).*

*Finally, I call upon all members of MOSTI to practice good work ethics with quality, trust, integrity, and adopt innovative and creative ways of working efficiently. We leave 2014 with great memories and look forward to a year of excellence in 2015.*

*Thank you.*



DATO' SRI DR. NOORUL AINUR  
MOHD. NUR  
Ketua Setiausaha / *Secretary General*

# PRAKATA KETUA SETIAUSAHA

## *Preface From The Secretary General*

Penerbitan Buku Laporan Prestasi Kementerian Sains, Teknologi dan Inovasi (MOSTI) 2014 merupakan satu usaha mendokumentasikan laporan prestasi bagi semua Bahagian/Agensi/Jabatan di bawah MOSTI. Penerbitan ini adalah satu koleksi yang membuktikan pelbagai usaha yang telah dilaksanakan serta kejayaan cemerlang yang telah diperolehi oleh warga MOSTI. Pencapaian ini seterusnya merealisasikan misi dan visi kementerian.

Banyak aktiviti dan program telah berjaya dilaksanakan dalam tahun 2014 mengikut perancangan yang rapi. Justeru saya mengambil kesempatan ini untuk mengucapkan tahniah dan syabas kepada semua warga MOSTI. Warga MOSTI telah membuktikan bahawa prestasi cemerlang MOSTI ini telah berjaya dikekalkan dan agenda yang dirancang terus dapat dilaksanakan walau dalam keadaan kerajaan Malaysia mengamalkan langkah penjimatan dan perbelanjaan berhemah.

Tahun 2014 juga menyaksikan MOSTI berusaha untuk melakukan penstrukturan semula Kementerian selaras dengan pelaksanaan Dasar Sains, Teknologi dan Inovasi Negara (DSTIN), pelaksanaan Pelan Transformasi Perkhidmatan Awam dan juga pelaksanaan sistem pengurusan belanjawan berasaskan *outcome* (*Outcome-based Budgeting* atau OBB). Selain itu, pembangunan sains, teknologi dan inovasi (STI) terus disemarakkan dengan peningkatan sistem penyampaian perkhidmatan STI merangkumi penyampaian maklumat secara cepat, tepat dan mudah difahami oleh umum.

Akhirnya, setinggi-tinggi ucapan terima kasih saya rakamkan kepada pucuk pimpinan MOSTI yang diterajui oleh YB Datuk Dr. Ewon Ebin dan YB Datuk Dr. Abu Bakar Mohamad Diah. Kerjasama rapat dan komitmen padu yang ditunjukkan oleh semua komponen yang menunjangi MOSTI telah membolehkan Kementerian melunaskan tanggungjawabnya kepada masyarakat dan negara.

*The publication of the Ministry of Science, Technology and Innovation (MOSTI) Performance Report 2014 is an effort to document the performances of all Divisions/Agencies/Departments under the purview of MOSTI. This publication provides details of the accomplishments achieved by MOSTI's workforce in maintaining excellent performance towards the realisation of the mission and vision of the Ministry.*

*Many activities and programmes which had been planned meticulously in 2014 have been successfully implemented. Thus, I take this opportunity to congratulate everyone in MOSTI for this success. MOSTI's workforce has proven time and again that such performance can be maintained and its planned agenda can be accomplished successfully despite the austerity measures and prudent spending practised by the government.*

*The year 2014 also witnessed the restructuring of the Ministry which is in line with the National Policy on Science, Technology and Innovation (DSTIN), the implementation of the Public Service Transformation Plan as well as the implementation of the budget management system based on outcome (Outcome-Based Budgeting or OBB). In addition, the development of science, technology and innovation (STI) continues to advance forward, fuelled by an increase performance in STI service delivery system of fast, accurate and user-friendly delivery of information.*

*Finally, I would like to express my deepest gratitude to MOSTI's leadership led by YB Datuk Dr. Ewon Ebin and YB Datuk Abu Bakar Mohamad Diah. The close cooperation and firm commitment shown by all concern allows MOSTI to deliver and fulfill its obligations to the community and the nation.*



KEMENTERIAN SAINS,  
TEKNOLOGI DAN INOVASI (MOSTI)

BLOK C5  
BLOK C5  
KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

Ibu Pejabat MOSTI

*MOSTI Headquarters*

# KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI

*MINISTRY OF SCIENCE,  
TECHNOLOGY AND INNOVATION  
(MOSTI)*

# L A T A R B E L A K A N G

Kementerian ini telah ditubuhkan pada 1973 sebagai Kementerian Teknologi, Penyelidikan dan Kerajaan Tempatan. Pada tahun 1976, selaras dengan fungsi dan tanggungjawab baharu yang berkaitan dengan isu-isu alam sekitar, nama Kementerian telah ditukar kepada Kementerian Sains, Teknologi dan Alam Sekitar (MOSTE). Seterusnya, Jemaah Menteri pada 27 Mac 2004 telah bersetuju dengan penstrukturan semula MOSTE dan nama Kementerian ditukar kepada Kementerian Sains, Teknologi dan Inovasi (MOSTI) bagi menerajui fungsi pembangunan ICT negara, Multimedia dan Inovasi. Pada tahun 2007, fungsi sains dan teknologi dipecahkan mengikut kluster Bioteknologi, ICT, Industri, Angkasa, Laut dan Atmosfera dan Teras Sains dan Teknologi.

## BACKGROUND

*The Ministry was established in 1973 as the Ministry of Technology, Research and Local Government. In 1976, in line with the new functions and responsibilities related to environmental issues, the name was changed to the Ministry of Science, Technology and Environment (MOSTE). Soon, the Cabinet on March 27, 2004 agreed to the restructuring of MOSTE and the name was changed to the Ministry of Science, Technology and Innovation (MOSTI) to lead the development of national ICT, Multimedia and Innovation. In 2007, the science and technology function was divided into the Biotechnology, ICT, Industrial, Aerospace, Marine and Atmosphere and Core Science and Technology cluster.*

### VISI

Peneraju agenda Sains, Teknologi dan Inovasi Negara

#### *Vision*

*Leading the nation in Science, Technology and Innovation*

### MISI

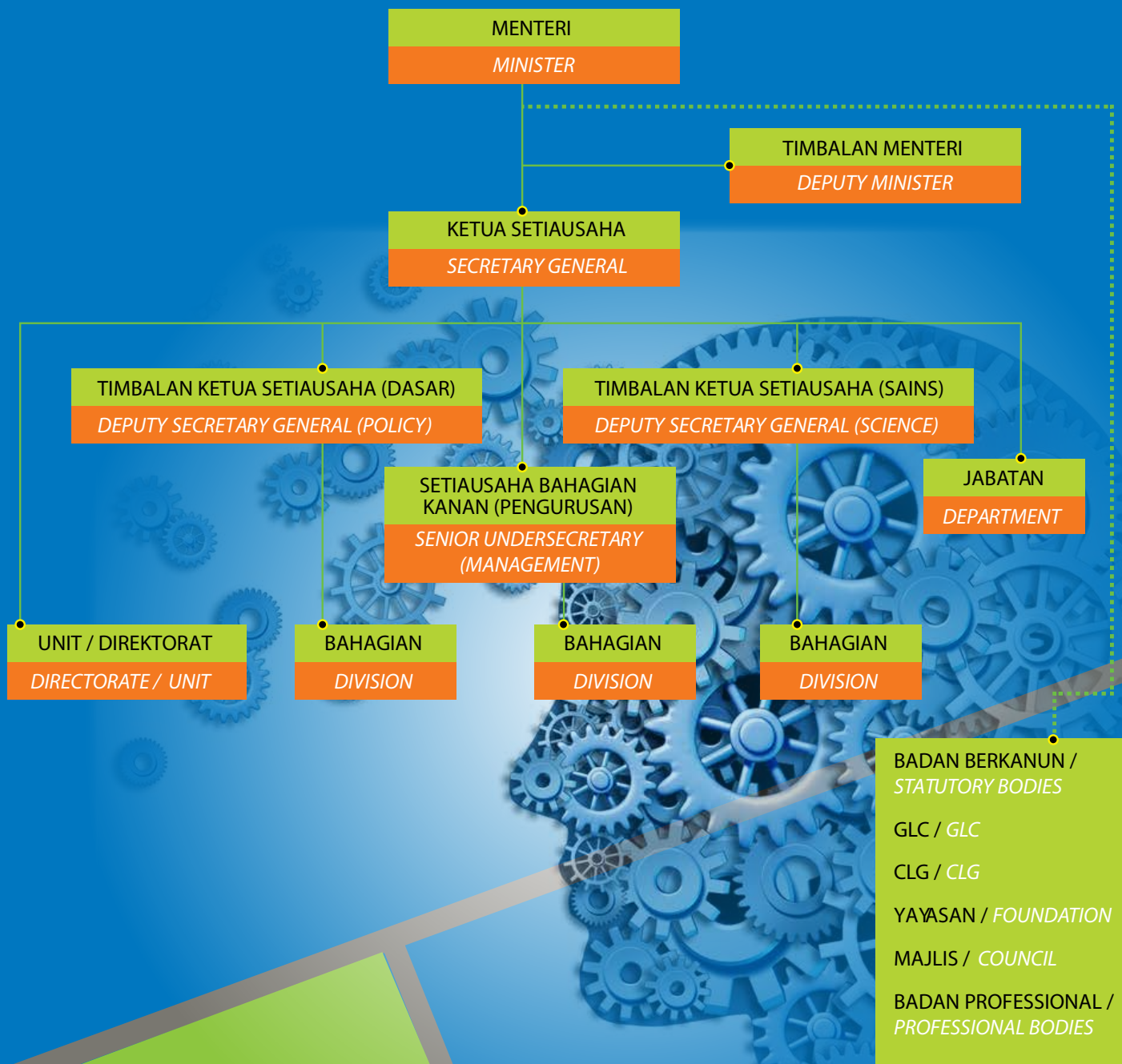
Meneroka, membangun dan memanfaatkan STI untuk menjana ilmu pengetahuan, mencipta kekayaan dan kesejahteraan masyarakat ke arah mencapai ekonomi berpendapatan tinggi yang kompetitif, mampan dan terangkum.

#### *Mission*

*Exploring, developing and utilising STI to generate knowledge, creating wealth and prosperity to society towards achieving sustainable, inclusive and competitive high-income*

# CARTA ORGANISASI

## ORGANIZATION CHART



# PENGURUSAN TERTINGGI

## TOP MANAGEMENT



YB Datuk Dr. Ewon Ebin  
Menteri / *Minister*



YB Datuk Dr. Abu Bakar Bin Mohamad Diah  
Timbalan Menteri / *Deputy Minister*



YBhg. Dato' Sri Dr. Noorul Ainur Mohd. Nur  
Ketua Setiausaha / *Secretary General*



YBhg. Dato' Dr. Mohd Azhar Bin Haji Yahaya  
Timbalan Ketua Setiausaha (Dasar) /  
*Deputy Secretary General (Policy)*



YBrs. Dr. Zulkifli Bin Mohamed Hashim  
Timbalan Ketua Setiausaha (Sains)/  
*Deputy Secretary General (Science)*



YBrs. Encik Kamel b. Mohamad  
Setiausaha Bahagian Kanan (Perancangan)/  
*Senior Undersecretary (Planning)*

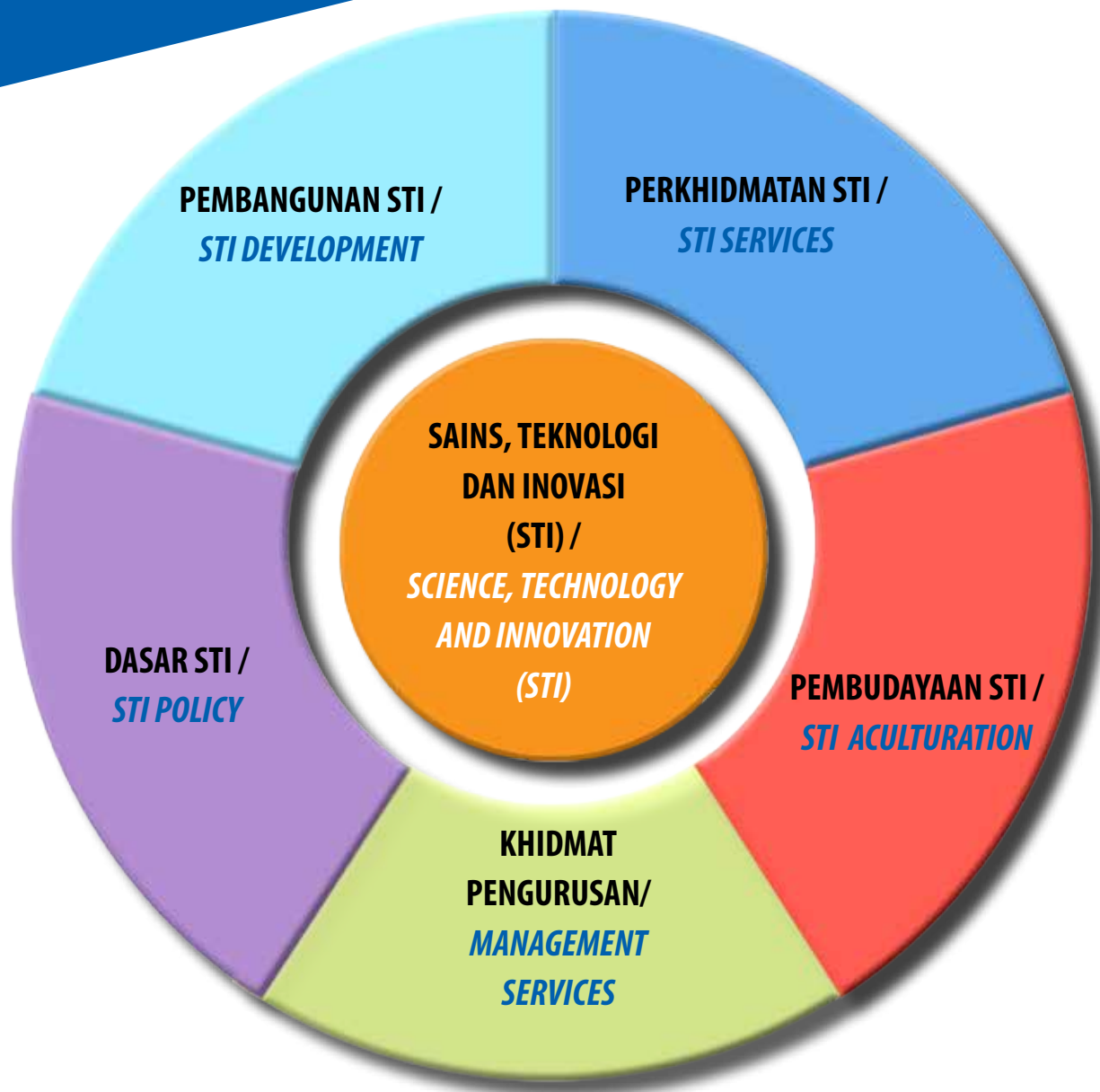


YBrs. Encik Khairulazli Bin Othman  
Setiausaha Bahagian Kanan (Pengurusan)/  
*Senior Undersecretary (Management)*



# KHIDMAT TERAS MOSTI

## *MOSTI CORE SERVICES*



# TERAS STRATEGIK

## STRATEGIC THRUST

1

Membangunkan modal insan dalam sains, teknologi dan inovasi (STI) ke arah menjana dan meningkatkan ekonomi berasaskan pengetahuan dan berpandukan model inovasi;

*Development of Human capital in STI towards generating and enhancing knowledge / innovation-led economy;*

2

Memanfaat dan memperbaiki R&D tempatan, perolehan teknologi dan inovasi untuk pasaran;

*Harnessing and intensifying home grown R&D, technology acquisition and innovation for markets;*

3

Mengurusperanakan STI, memupuk dan membudayakan pemikiran kreatif dan inovatif;

*Mainstreaming of STI, nurturing and acculturation of creative and innovative thinking;*

4

Meningkat dan memperkukuhkan jalinan dan jaringan strategik (kolaborasi, kerjasama dan perkongsian);

*Enhancement and strengthening strategic alliances (collaboration, cooperation and partnerships);*

5

Memperkukuhkan dana penyelidikan, pembangunan dan pengkomersilan;

*Strengthening of RDC funding;*

6

Memperhebatkan pengkomersilan dan harta intelek bagi penghasilan kekayaan dan kesejahteraan masyarakat;

*Harnessing of commercialisation and intellectual property for wealth creation and societal well-being;*

7

Memperkasa komuniti melalui STI untuk pembangunan mampan;

*Empowering society through innovation for sustainable development;*

8

Pengantarabangsaan; dan  
Internationalisation; and

9

Pemeriksaan keupayaan dan kapasiti perkhidmatan sokongan MOSTI

*Strengthening the ability and capacity of MOSTI support services*

# JABATAN/AGENSI

# DEPARTMENT/AGENCIES

## JABATAN



Agensi Nuklear Malaysia  
(NUKLEAR MALAYSIA)  
[www.nuclearmalaysia.gov.my](http://www.nuclearmalaysia.gov.my)



Jabatan Standards Malaysia  
(STANDARDS MALAYSIA)  
[www.jsm.gov.my](http://www.jsm.gov.my)



Lembaga Perlesenan Tenaga  
Atom (LPTA)  
[www.aelb.gov.my](http://www.aelb.gov.my)



Jabatan Kimia Malaysia  
(KIMIA MALAYSIA)  
[www.kimia.gov.my](http://www.kimia.gov.my)



Pusat Sains Negara (PSN)  
[www.psn.gov.my](http://www.psn.gov.my)



Agensi Angkasa Negara  
(ANGKASA)  
[www.angkasa.gov.my](http://www.angkasa.gov.my)



Agensi Remote Sensing Malaysia  
(ARSM)  
[www.remotesensing.gov.my](http://www.remotesensing.gov.my)



Jabatan Meteorologi Malaysia  
(MET MALAYSIA)  
[www.met.gov.my](http://www.met.gov.my)

## BADAN BERKANUN

Akademi Sains Malaysia (ASM)  
[www.akademisains.gov.my](http://www.akademisains.gov.my)



## CLG

National Institutes of  
Biotechnology Malaysia (NIBM)  
[www.nibm.my](http://www.nibm.my)



CyberSecurity Malaysia  
[www.cybersecurity.my](http://www.cybersecurity.my)



NanoMalaysia Berhad

[www.nanomalaysia.com.my](http://www.nanomalaysia.com.my)



NANOMALAYSIA

## MAJLIS



Majlis Rekabentuk Malaysia  
[www.mrm.gov.my](http://www.mrm.gov.my)

## YAYASAN

Yayasan Penyelidikan Antartika  
Sultan Mizan  
[www.ypsasm.my](http://www.ypsasm.my)



Yayasan Angkasawan Malaysia  
(YAM)



Yayasan Inovasi Malaysia  
[www.yim.my](http://www.yim.my)



## BADAN PROFESIONAL



Institut Kimia Malaysia  
[www.ikm.org.my](http://www.ikm.org.my)

## GLC



Astronautic Technology (M) Sdn  
Bhd (ATSB®)  
[www.atsb.my](http://www.atsb.my)



Malaysia Biotechnology  
Corporation Sdn Bhd (BiotechCorp)  
[www.biotechcorp.com.my](http://www.biotechcorp.com.my)



InnoBio

Inno Biologics Sdn. Bhd.  
(INNOBIO)  
[www.innobiologics.com](http://www.innobiologics.com)



Kumpulan Modal Perdana  
Sdn. Bhd.  
[www.modalperdana.com](http://www.modalperdana.com)



Malaysia Venture Capital  
Management Berhad (MAVCAP)  
[www.mavcap.com](http://www.mavcap.com)



Malaysia Dept Ventures (MDV)  
[www.mdv.com.my](http://www.mdv.com.my)

MIMOS



MIMOS BERHAD  
[www.mimos.my](http://www.mimos.my)



MTDC

Malaysian Technology  
Development Corporation (MTDC)  
[www.mtdc.com.my](http://www.mtdc.com.my)



SIRIM Berhad  
[www.sirim.my](http://www.sirim.my)



TECHNOLOGY PARK  
MALAYSIA

Technology Park  
Malaysia (TPM)  
[www.tpm.com.my](http://www.tpm.com.my)

# PIAGAM PELANGGAN

## 1. Menguruskan dan Mengagihkan Dana R&D&C

1.1 Memproses dan memaklumkan keputusan permohonan dana dalam tempoh 50 hari dari tarikh penerimaan permohonan lengkap.

1.2 Mengeluarkan surat tawaran dan dokumen perjanjian kepada penerima dana dalam tempoh 30 hari dari tarikh keputusan diperoleh.

1.3 Membuat pembayaran kepada penerima dana dalam tempoh 14 hari selepas penerimaan dokumen perjanjian yang lengkap.

1.4 Membuat pembayaran kemajuan projek kepada penerima dana dalam tempoh 14 hari dari tarikh keputusan diperoleh.

## 2. Meningkatkan Bilangan dan Kualiti Modal Insan STI

2.1 Memproses dan membuat keputusan ke atas permohonan dana Pembangunan Modal Insan (HCD) dalam tempoh 45 hari dari tarikh penerimaan dan permohonan lengkap.

2.2 Memaklumkan keputusan dana HCD dalam tempoh 7 hari dari tarikh keputusan diperolehi.

## 3. Menyebarluaskan Data dan Maklumat Mengenai Sains, Teknologi dan Inovasi (STI) Negara

3.1 Memastikan data dan maklumat STI atas talian sentiasa terkini.

3.2 Memberi maklum balas ke atas permohonan mendapatkan data dan perkhidmatan STI dalam tempoh tiga hari bekerja.



## 4. Meningkatkan Penyampaian Khidmat Pelanggan

4.1 Memberi maklumbalas awal kepada aduan dalam tempoh 3 hari bekerja aduan diterima.

4.2 Memproses dan membayar bil dan invois dalam tempoh 14 hari dari tarikh penerimaan dokumen yang lengkap.

4.3 Memastikan ketersediaan capaian Portal Rasmi MOSTI sentiasa tidak kurang dari 99.9%.

4.4 Memberi maklum balas terhadap aduan ketidakcapaian Portal Rasmi MOSTI dalam masa 1 jam selepas penerimaan aduan.

# CUSTOMER CHARTER

## 1. **Managing and Distributing of R&D&C Funds**

1.1 Process and inform applicants on funding decisions within 50 days of upon receiving completed applications.

1.2 Issue offer letters and agreement documents to the beneficiary within 30 days from the date of approval.

1.3 Make payment to the beneficiary within 14 days from the acceptance of complete agreement.

1.4 Make progress payments to the beneficiary within 14 days of approval.

## 2. **Increase Quality and Number of STI's Human Capital**

2.1 Process and decide on applications for Human Capital Development Fund (HCD) within 45 days from the acceptance of complete agreement.

2.2 Inform the decision of HCD funds within 7 days from the date of the approval.

## 3. **Disseminate Information and Data of National Science, Technology and Innovation (STI)**

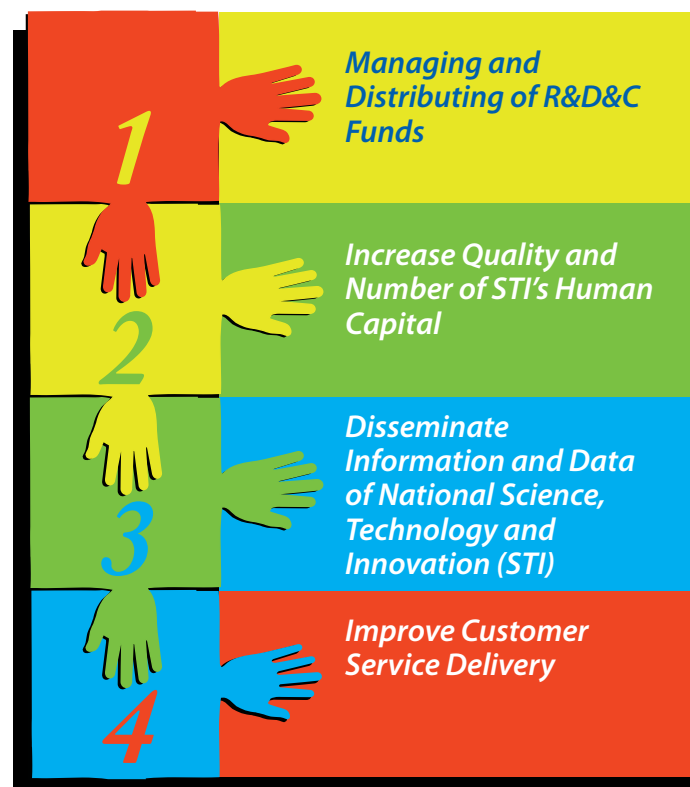
3.1 Ensure that STI data and information is available online and always up-to-date.

3.2 Respond to the request to get STI's data and services within 3 working days.

## 4. **Improve Customer Service Delivery**

4.1 Provide early feedback on complaints within 3 working days.

4.2 Process and issue payment of bills and invoices within 14 days from receipt of documents.



4.3 Ensure the availability to access MOSTI Portal not less than 99.9%.

4.4 To respond to complaints of non-access of MOSTI Portal within 1 hour from the receipt of the complaint.

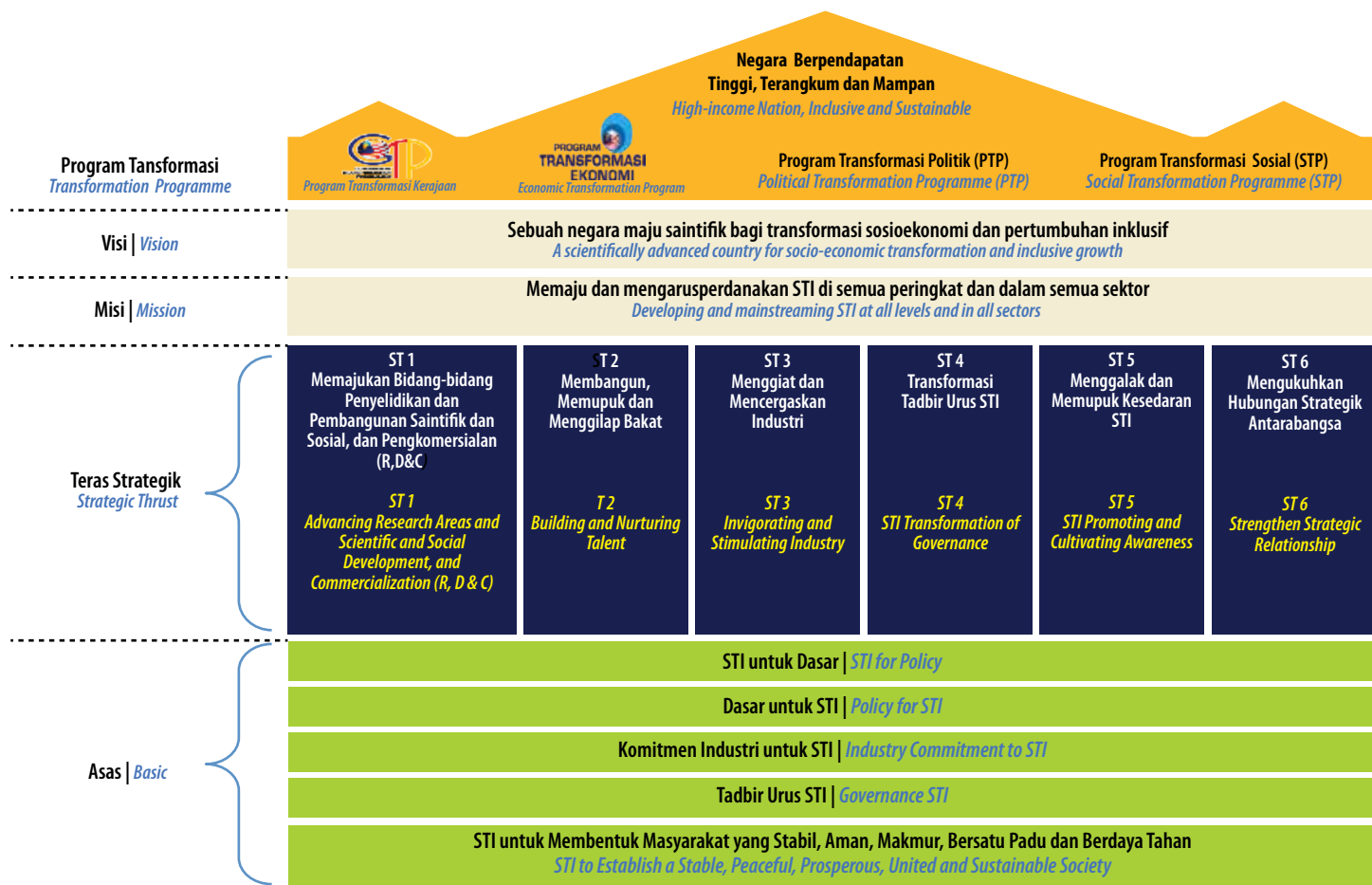
# PENGANUGERAHAN KEPADA MOSTI *MOSTI AWARDS*

1. ANUGERAH PENGURUSAN ADUAN CEMERLANG  
TAHUN 2013  
COMPLAINTS MANAGEMENT EXCELLENCE  
AWARD 2013
2. SIJIL PENGHARGAAN - TEMPAT PERTAMA  
ANUGERAH BEST PRACTICES PENILAIAN  
INSPEKTORAT (Kategori Projek Bukan Fizikal)  
CERTIFICATE OF APPRECIATION - 1ST PLACE  
AWARD FOR BEST PRACTICES IN INSPECTORATE  
RATING (Non-Physical Project Category)
3. SIJIL PENGHARGAAN - TEMPAT KEDUA  
ANUGERAH LAWATAN TURUN PADANG TERBAIK  
CERTIFICATE OF APPRECIATION - 2ND PLACE  
AWARD FOR BEST FIELD VISIT



# RANGKA KERJA DASAR SAINS, TEKNOLOGI DAN INOVASI NEGARA (DSTIN)

## SCIENCE POLICY, TECHNOLOGY AND INNOVATION FRAMEWORK (DSTIN)



# DANA | FUND



## SCIENCE FUND

ScienceFund merupakan geran yang disediakan oleh kerajaan untuk melaksanakan projek-projek R&D yang menyumbang kepada penerokaan idea baharu dan kemajuan dalam bidang sains gunaan dengan memfokuskan kepada penyelidikan berinovasi dan berimpak tinggi.

Kumpulan sasar:

- IPTA & IPTS
- Institut Penyelidikan Kerajaan
- Agensi Sains, Teknologi & Inovasi

Kuantum maksimum dan tempoh pelaksanaan: RM500,000.00 dan 30 Bulan

*ScienceFund is a grant provided by the government to implement R&D projects that contributes to the exploration of new ideas and progress in the field of applied science focusing on innovative and high-impact research.*

**Target Group:**

- Public Higher Learning Institutions & Private Higher Learning Institutions
- Learning Institutions
- National Research Institute of Science, Technology & Innovation Agency

**Maximum quantum & implementation period:**  
RM500,000.00 and 30 months

# 1



## TECHNO FUND

TechnoFund merupakan geran yang bertujuan untuk merangsang pertumbuhan dan inovasi syarikat-syarikat Malaysia dengan meningkatkan tahap R&D dan pengkomersilan. Geran ini menyediakan pembiayaan untuk pembangunan teknologi sehingga ke peringkat pra-pengkomersilan dengan potensi komersil untuk mewujudkan perniagaan baru dan menjana ekonomi negara.

Kumpulan sasar:

- Syarikat SME
- IPTA & IPTS
- Institut Penyelidikan Kerajaan
- Agensi Sains, Teknologi & Inovasi

Kuantum maksimum dan tempoh pelaksanaan :  
RM3,000,000.00 dan 24 Bulan

*TechnoFund is a grant aimed at stimulating growth and innovation of Malaysian companies to increase the level of R&D and commercialisation. This grant provides funds for technological development up to pre-commercialisation with potential commercialisation to create new businesses and drive the national economy.*

**Target group:**

- SME Companies
- Public Higher Learning Institutions & Private Higher Learning Institutions
- National Research Institute
- Science, Technology & Innovation Agency

**Maximum quantum & implementation period:**  
RM3,000,000.00 and 24 months

# 2



## INNOFUND

InnoFund merupakan geran dan pembangunan atau penambahbaikan produk/proses/perkhidmatan baru atau sedia ada yang mempunyai unsur-unsur inovasi. Projek mestilah mempunyai nilai ekonomi dan meningkatkan kesejahteraan masyarakat. InnoFund terbahagi kepada *Enterprise Innovation Fund* (EIF) dan *Community Innovation Fund* (CIF).

Kumpulan sasar:

- Individu
- Syarikat Milikan Tunggal
- Syarikat SME
- Persatuan / NGO/ Kumpulan Komuniti Berdaftar

Kuantum maksimum dan tempoh pelaksanaan

- RM500,000.00 dan 12 Bulan (EIF)
- RM50,000.00 dan 12 Bulan (EIF Individu)
- RM500,000.00 dan 18 Bulan (CIF)

*InnoFund is a grant for the development or improvement of new and current products / processes / services that possess the elements of innovation. Projects must have economic value and improve the welfare of the community. InnoFund is divided into Enterprise Innovation Fund (EIF) and the Community Innovation Fund (CIF).*

**Target Group:**

- Individual
- Wholly-Owned Company
- Small Medium Enterprise Company (SME)
- Associations / Non-Government Organisation / Groups
- Registered Society

**Maximum quantum & implementation period:**

- RM500,000.00 and 12 months (EIF)
- RM50,000.00 dan 12 months (Individual EIF)
- RM500,000.00 and 18 months (CIF)

# 3



## COMMERCIALISATION OF R & D FUND (CRDF)

CRDF menyumbang kepada penjanaan kekayaan dan kandungan teknologi dalam syarikat melalui pengkomersilan hasil R&D tempatan

Kumpulan sasaran:

- Syarikat ditubuhkan di Malaysia dan pemegang saham majoriti syarikat (51% ke atas) mesti dipegang oleh rakyat Malaysia
- Penyelidikan dan pembangunan teknologi telah siap dan prototaip / loji pandu berskala pra-pengkomersilan telah sedia ada

Kuantum maksimum dan tempoh pelaksanaan :  
RM 4,000,000.00 dan 24 bulan

*CRDF contributes to the wealth creation and technological content of the company through the commercialisation of local R&D.*

*Target Group:*

- *Companies incorporated in Malaysia and the majority of company's shares (51% and above) must be held by Malaysians.*
- *Have completed the research and technological development and a prototype / pre-commercialisation scale plant has been set up.*

*Maximum quantum and implementation period:  
RM4,000,000.00 and 24 months*

4

## TECHNOLOGY ACQUISITIONS FUND (TAF)

TAF menyumbang kepada ekonomi berasaskan inovasi dengan menyediakan jalan pintas bagi meningkatkan teknologi syarikat tempatan melalui perolehan teknologi baru dari luar negara yang akan meningkatkan daya saing, kebolehan dan kapasiti syarikat tempatan

Kumpulan sasaran:

- Small & Medium Enterprise (SME)

Kuantum maksimum dan tempoh pelaksanaan :  
RM 4,000,000.00 dan 24 bulan

*TAF contributes to the innovation-based economy by providing a shorter method for local companies to upgrade its technology through the acquisition of new technologies abroad that will increase competitiveness, capability and capacity of the local company.*

*Target Group:*

- *Small & Medium Enterprise (SME)*

*Maximum Quantum and implementation period:  
RM4,000,000.00 and 24 months*

5

## BIOTECHNOLOGY COMMERCIALISATION FUND (BCF)

BCF menyediakan sokongan pembiayaan bagi syarikat BioNexus mengembangkan aktiviti pengkomersilan produk dan perkhidmatan bioteknologi yang berdaya maju.

Kumpulan sasaran:

- Syarikat berstatus BioNexus

Kuantum maksimum dan tempoh pelaksanaan :  
RM 3,000,000.00 dan 7 tahun

*BCF provides support funding for BioNexus companies to develop sustainable biotechnology products and services.*

*Target Group:*

- *BioNexus status Company*

*Maximum quantum and implementation period:  
RM3,000,000.00 and 7 years*

6



TECH MALA

MAKING MALAYSIA  
HARVEST  
CONCERT  
ceramah  
RAIK

GREEN WORLD GENETICS  
**HIBRIMAS**  
F1 Hybrid Sweet Corn  
100% Sweet  
100% Hybrid

GREEN WORLD GENETICS  
**HIBRIMAS**  
F1 Hybrid Sweet Corn  
100% Sweet  
100% Hybrid

# LAPORAN BAHAGIAN SEKTOR DASAR

- ◆ Bahagian Perancangan
- ◆ Bahagian Inovasi Dan Pengkomersilan
- ◆ Urusetia Majlis Sains dan Penyelidikan Kebangsaan
- ◆ Bahagian Antarabangsa
- ◆ Bahagian Pusat Maklumat Sains Dan Teknologi (MASTIC)
- ◆ Bahagian Dana

## *DIVISION REPORT* **POLICY SECTOR**

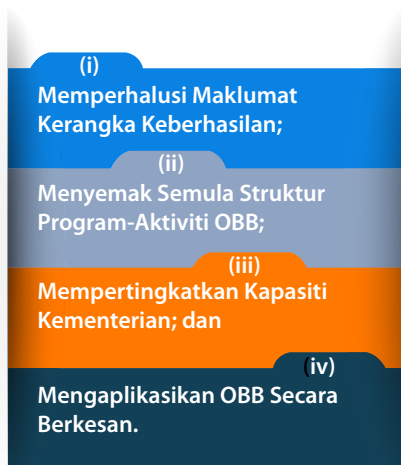
- ◆ *Planning Division*
- ◆ *Division of Innovation and Commercialisation*
- ◆ *Secretariat of Science and National Research Council*
- ◆ *International Division*
- ◆ *Division of Science and Technology Information Centre (MASTIC)*
- ◆ *Fund Division*

# BAHAGIAN PERANCANGAN (UNIT STRATEGIK) PLANNING DIVISION (STRATEGIC UNIT)

## Outcome Based Budgeting (OBB)

Kementerian Sains, Teknologi dan Inovasi (MOSTI) telah dipilih sebagai salah satu daripada enam Kementerian terpilih dalam memperhalusi Kerangka Keberhasilan Outcome Based Budgeting (OBB).

**Antara objektif utama inisiatif ini adalah:**



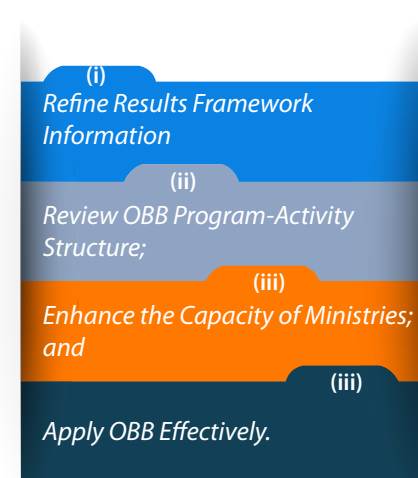
Salah satu tindakan yang perlu dilaksanakan sebagai Kementerian terpilih adalah menubuhkan Pasukan Khas yang berperanan untuk menerajui proses OBB serta menyelaraskan semua mesyuarat dan bengkel di peringkat Kementerian.

Sehingga 31 Disember 2014, MOSTI telah melaksanakan dua Sesi Penambahbaikan Kerangka Keberhasilan seperti yang berikut:

## Outcome Based Budgeting (OBB)

*Ministry of Science, Technology and Innovation (MOSTI) has been selected as one of the Six Selected Ministries in refining the Outcome Based Budgeting (OBB) Result Framework.*

**Among the main objectives of this initiative are:**



*One of the actions that need to be implemented as selected Ministries is to set up a Special Team whose role is to lead the process of OBB and to coordinate all meetings and workshops at the Ministerial level.*

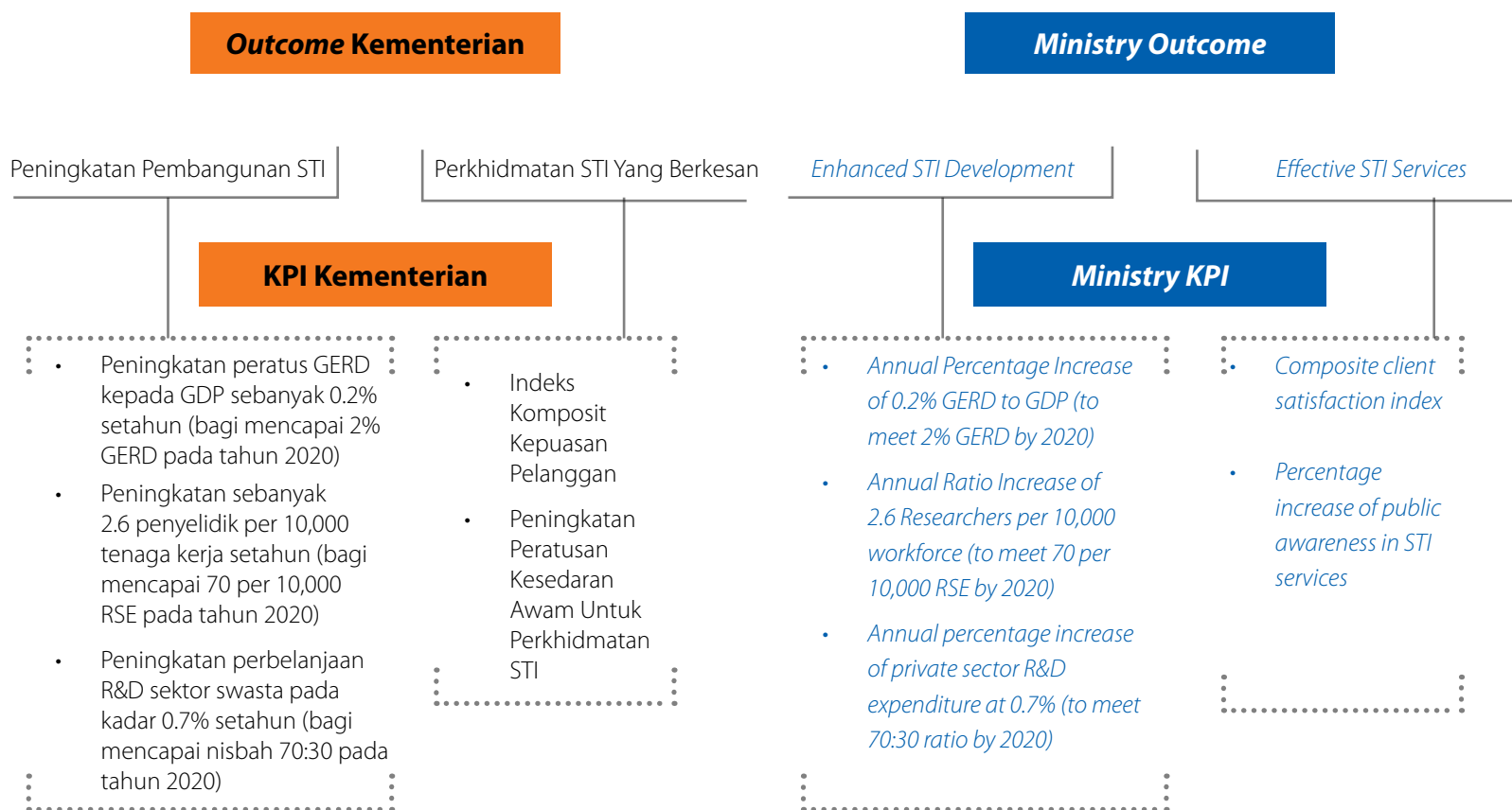
*As of 31st December 2014, two OBB Data Refinement Workshops have been conducted by MOSTI as follows:*

- i. Bengkel Pemurnian Data OBB Peringkat Kementerian pada 10 November 2014; dan
- ii. Bengkel Pemurnian Data OBB Peringkat Program pada 16 dan 17 Disember 2014.

Hasil daripada bengkel pemurnian data yang diadakan, dan Petunjuk Prestasi Utama (KPI) Kementerian yang telah dimurnikan adalah seperti berikut:

- i. *Ministerial Level OBB Data Refinement Workshop was held on the 10th November 2014; and*
- ii. *Program Level OBB Data Refinement Workshop was held on the 16th and 17th December 2014.*

*As a result from the workshop, the Outcome and Key Performance Indicator (KPI) for MOSTI has been refined as follows:*





Bengkel Pemurnian Data OBB dikendalikan oleh En. Koshy Thomas dan Pasukan Khas OBB daripada Pejabat Belanjawan Negara, Kementerian Kewangan Malaysia.

*OBB Data Refinement Workshop conducted by Mr. Koshy Thomas and the OBB Special Team from National Budget Office, Ministry of Finance.*

Pembentangan hasil pemurnian outcome dan KPI OBB oleh YBrs. Dr. Ibrahim bin Abu Ahmad, Timbalan Setiausaha Bahagian Kanan (Perancangan) di Bengkel Pemurniaan Data OBB Peringkat Kementerian di Marina Putrajaya.

*YBrs. Dr. Ibrahim bin Abu Ahmad, Deputy Senior Under Secretary (Planning) presenting the refined OBB outcome and KPI during the Ministry Level OBB Data Refinement Workshop at Marina Putrajaya.*



# BAHAGIAN INOVASI DAN PENGKOMERSILAN INNOVATION AND COMMERCIALISATION DIVISION

## PROGRAM TAHUN PENGKOMERSILAN MOSTI 2014 (MCY2014)

Tahun Pengkomersilan MOSTI 2014 telah dilancarkan pada 23 Januari 2014 oleh YB Menteri Sains, Teknologi & Inovasi dengan mensasarkan pengkomersilan 360 produk dalam tempoh 5 tahun.

MCY 2014 berjaya lancar 65 produk berbanding sasaran asal 60 produk

### objektif MCY 2014 :

- Menyedia platform pengkomersilan
- Meluaskan peluang pasaran
- Kukuhkan kerjasama strategik
- Fasilitasi akses kepada pasaran
- Tingkat rantaian promosi produk R&D

24 program/aktiviti dirangka untuk rangsang aktiviti pengkomersilan produk R&D



## MOSTI COMMERCIALISATION YEAR 2014 PROGRAMME (MCY2014)

The MOSTI Commercialisation Year (MCY) 2014 programme was launched on January 23rd 2014 by MOSTI with the aim to commercialise 360 products by the year 2020.

MCY 2014 managed to launch 65 products compared to the target of 60 on original products

### MYC 2014 objective:

- Prepare commercialisation platform
- Expand market opportunities
- Strengthen strategic cooperation
- Facilitate access to the market
- Level chain of R&D products

24 programme / activities designed to stimulate commercialisation activities of R&D products

## PROGRAM KREATIVITI & SCIENCE 4U

Program Kreativiti & Science 4U adalah sebahagian daripada usaha MOSTI untuk membudayakan STI. Program ini dirancang untuk memberi fokus kepada kelompok utama masyarakat seperti pelajar, penuntut IPT, Belia, Wanita, Badan Bukan Kerajaan (NGO), dan Akar Umbi. Di antara pengisian program termasuklah pameran sains, teknologi dan inovasi, pertandingan inovasi, kuiz sains, bengkel, ceramah/forum dan aktiviti interaktif. Sepanjang tahun 2014, sebanyak 14 program Kreativiti & Science 4U telah berjaya dilaksanakan di seluruh negara dengan penyertaan seramai 34,210 orang.

## PERSIDANGAN DAN PAMERAN INOVASI KEBANGSAAN 2014 DAN ANUGERAH INOVASI NEGARA 2014

Persidangan Dan Pameran Inovasi Kebangsaan (NICE) dan Anugerah Inovasi Negara (AIN) merupakan aktiviti tahunan MOSTI yang telah diperkenalkan semenjak tahun 2006. Pada tahun 2014, pelaksanaan program ini telah ditambah elemen pengkomersilan sejajar dengan MCY 2014 dengan memberi fokus kepada pengkomersilan serta menyampaikan Anugerah MIMOS Prestigious Awards semasa Malam Anugerah Inovasi Negara. NICE telah dihadiri sejumlah 5,000 orang dan impak dari program merekodkan sejumlah RM2.5 juta transaksi pengkomersilan.



**RM 2.5 Juta**  
**Transaksi**  
**Pengkomersilan**  
**RM 2.5 Million**  
**Commercialisation**  
**Transaction**



## CREATIVITY AND SCIENCE 4U PROGRAMME

The Creativity and Science 4U programme is one of the efforts undertaken by MOSTI to enculturate Science, Technology and Innovation (STI), in tandem with the Government's aim in attracting interest in STI amongst the community as well as to highlight the roles and contribution made by STI towards generating wealth, knowledge and promoting societal well-being amongst its people. The program has been specifically planned to give focus to several segments of society which includes school children, students of Higher Learning Institutions, Youths, Womens Organisations, Non-Governmental Organisations dan Grassroots. Amongst its activities include: sti exhibitions, innovation competition, science quiz, workshops, discussion / forums and interactive activities. Throughout 2014, a total of 14 Creativity & Science 4U programs were successfully conducted throughout the country which received some 34,210 visitors from all walks of life.

## NATIONAL INNOVATION CONFERENCE & EXHIBITION 2014 (NICE) AND NATIONAL INNOVATION AWARD 2014 (AIN)

National Innovation Conference and Exhibition (NICE) and National Innovation Awards (AIN) are MOSTI annual programmes since its inception in 2006. In the year 2014, the commercialisation element was incorporated to provide focus on commercialisation as well as the addition of MIMOS Prestigious Awards during AIN Gala Nite. A total of 5,000 people attended NICE 2014 and its impact include a transaction of RM2.5 million on product commercialisation.



## PROGRAM PENGALAKKAN KESEDARAN KEPENTINGAN HARTA INTELEK

Sepanjang tahun 2014, empat (4) program pengalakkan kesedaran harta intelek telah dilaksanakan dengan objektif memberi pendedahan kepada para pegawai kerajaan yang terlibat secara langsung dalam aktiviti penyelidikan mengenai kepentingan dan perlindungan harta intelek. Seramai 265 peserta telah menerima manfaat daripada program ini.

### BENKEL CABARAN MYIDEAS 2014

Bengkel *Training The Trainers – Essentials of Innovation* merupakan program tahunan yang dilaksanakan MOSTI bagi mengukuhkan budaya inovasi dan kreativiti di kalangan penjawat awam yang bertanggungjawab di unit Inovasi Kementerian-kementerian selaras dengan keperluan semasa untuk memberi nilai tambah inovasi kepada sistem penyampaian kerajaan. Dua (2) Bengkel telah diadakan pada tahun 2014 dengan melatih 100 orang.

## INTELLECTUAL PROPERTY PROMOTION AND AWARENESS PROGRAMME

*Four (4) intellectual property awareness programmes were implemented with the objective to provide awareness for government officers who are directly involved in government research activities on the importance of intellectual property protection. 265 participant have benefited from this programme.*

### MYIDEAS CHALLENGE WORKSHOP 2014

*Training The Trainers – Essentials of Innovation workshop is an annual programme organised by MOSTI to enculturate innovation and creativity among civil servants. It aims to support by providing value add to the government delivery system through innovation and creativity culture. A total of 100 participants from various ministries benefited from the two workshops held in 2014.*



**4** Program  
Galak Kesedaran  
**Harta Intelek**  
**265**  
Peserta Terima Manfaat



**4** Programme  
Promote Awareness  
**Intellectual Property**  
**265**  
Participants Received Benefits



**2** Bengkel Cabaran  
**MyIdeas**  
**2014**  
Latih 100 orang peserta



**2** Workshop Challenges  
**MyIdeas**  
**2014**  
Trained 100 participants

# BAHAGIAN ANTARABANGSA MOSTI

## MOSTI INTERNATIONAL DIVISION

### Kerjasama Bilateral

- Empat mesyuarat Jawatankuasa Bersama (JCM)
- Negara terlibat - Myanmar, Mozambique, Afrika Selatan & China
- MoU dengan Afrika Selatan

### *Bilateral Cooperation*

- *Four meetings Joint Committee*
- *Countries Involved - Myanmar, Mozambique, South Africa & China*
- *MoU with South Africa*

### Kerjasama Bilateral

- 13 mesyuarat multilateral (contoh: ASEAN, APEC, NAM)
- Pemilihan Malaysia sebagai penganjur 34th *Scientific Committee on Antarctic Research* dan 2016 *Open Science Conference*
- YBhg. Dato' Sri Dr. Noorul Ainur Mohd. Nur diberi penghormatan berucap dalam upacara penutup SCAR.

### *Bilateral Cooperation*

- *13 multilateral meetings (Example: ASEAN, APEC, NAM)*
- *The selection of Malaysia as the organiser of 34th Scientific Committee on Antarctic Research and 2016 Open Science Conference*
- *Her Excellency Dato' Sri Dr. Noorul Ainur Mohd. Nur was given the honour to speak at the SCAR's closing ceremony.*



## Kejayaan peringkat ASEAN

Dua orang saintis Malaysia menerima pengiktirafan tertinggi dalam Majlis Anugerah Sains dan Teknologi ASEAN yang berlangsung di Bogor, Indonesia pada 25 Ogos 2014.

1. ASEAN Young Scientist and Technologist Award (AYSTA)
2. ASEAN Outstanding Scientist and Technologist Award (AOSTA)

### Bengkel/Forum

- Bahagian Antarabangsa telah menganjurkan tiga bengkel dan dua forum.
- Impak bengkel dan forum ini ialah agensi di bawah MOSTI mendapat pembiayaan APEC bagi menganjurkan projek mereka iaitu Akademi Sains Malaysia dan Jabatan Standard.



## Achievement at ASEAN level

- Two Malaysian scientists received the highest recognition in the ASEAN Science and Technology Council Award held in Bogor Indonesia on August 25 2014.

1. ASEAN Young Scientist and Technologist Award (AYSTA)
2. ASEAN Outstanding Scientist and Technologist Award (AOSTA)

### Workshop/Forums

- The International Division has organised three workshops and two forums.
- Outcome of the workshops and the forums sees agencies under MOSTI receive APEC funding to organise the Science Academy and the Malaysia Department of Standards projects.

# The 8<sup>th</sup> Informal ASEAN Ministerial Meeting on S&T (8<sup>th</sup> IAMMST)

25 August 2014 IBB International Convention Center, Bogor, Indonesia



*The official opening ceremony of the 8th Informal ASEAN Ministerial Meeting on Science and Technology on 25 August 2014 in Bogor, Indonesia.*

## Lawatan Kerja

1. China - bersempena dengan ulang tahun ke-40 hubungan diplomatik Malaysia-China.
2. Korea Selatan - jemputan Presiden Park Geun-hye.
3. Amerika Syarikat

## Work Visits

1. China - in conjunction with the 40th anniversary of Malaysia - China diplomatic relations.
2. South Korea - the invitation of President Park Geun-hye.
3. United States of America

# 40

ULANG TAHUN / ANNIVERSARY  
HUBUNGAN DIPLOMATIK / **DIPLOMATIC RELATION**  
**MALAYSIA - CHINA**

# BAHAGIAN PUSAT MAKLUMAT SAINS DAN TEKNOLOGI MALAYSIA

(MASTIC)

## MALAYSIAN SCIENCE AND TECHNOLOGY INFORMATION CENTER (MASTIC)



### LAPORAN PENCAPAIAN 2014 PERFORMANCE REPORT 2014

Dua kajian utama

1. Kajian Penyelidikan dan Pembangunan (R&D) Kebangsaan 2013
2. Kajian Kesedaran Awam mengenai Sains, Teknologi dan Inovasi (STI) 2014.

*Conducted two national survey*

1. *National Research and Development (R&D) Survey 2013 and*
2. *National Public Awareness of Science, Technology and Innovation (STI) 2014.*

#### 2 Kajian Utama / 2 National Survey



- Mengadakan Seminar Pangkalan Data STI Negara 2014 bertujuan untuk mengumpul dan mengemas kini maklumat STI serta mempromosikan dan menghebahkan penggunaan sistem KRSTE.my kepada pelanggan MASTIC dalam pangkalan data MASTIC. Mewujudkan jalinan kerjasama serta peluang perkongsian maklumat bersama dengan pelanggan MASTIC yang terlibat serta menambah baik kaedah pengumpulan data bagi pangkalan data MASTIC.



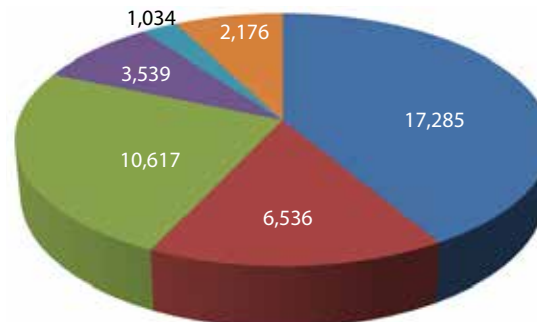
- Pangkalan data MASTIC mengandungi **17,285** maklumat profil penyelidik (**6,536** merupakan pakar), **10,617** projek STI, **3,539** teknologi atau produk tempatan berpotensi untuk dikomersilkan, **1,034** kemudahan (makmal, kemudahan khusus) dan peralatan saintifik bagi melaksanakan kerja-kerja penyelidikan dan pembangunan (R&D) serta aktiviti STI.

<span style="color: blue;">■</span>	PROFIL PENYELIDIKAN / <i>RESEARCH PROFILE</i>
<span style="color: red;">■</span>	PAKAR / <i>SPECIALIST</i>
<span style="color: green;">■</span>	PROJEK STI / <i>STI PROJECTS</i>
<span style="color: purple;">■</span>	TEKNOLOGI PRODUK / <i>TECHNOLOGY PRODUCTS</i>
<span style="color: teal;">■</span>	KEMUDAHAN / <i>AMENITIES</i>
<span style="color: orange;">■</span>	PERALATAN / <i>EQUIPMENT</i>

- Conducted the 2014 Science, Technology and Innovation (STI) Database Seminar. The seminar aims to collect, update information and to promote and publicise the KRSTE.my system. It also creates opportunities for collaboration and information sharing with clients.*

- MASTIC's data base contains 17,285 information on researchers and experts from various fields of STI (6,536 are an expert in their respective fields of STI), 10,617 STI project, 3,539 technology or local products are ready for commercialisation, 1,034 S&T facilities (labs and specific facilities) and 3,176 scientific equipments for research and development (R&D) and STI activities.*

**Pangkalan data MASTIC / MASTIC database**



- Pembangunan Sistem eKaji Selidik STI Negara. Pembangunan sistem aplikasi bagi membantu dalam pengurusan dan pelaksanaan kajian STI Negara secara atas talian. Pengoperasian kerja-kerja pengumpulan dan penyebaran maklumat dapat dilakukan dengan lebih berkesan dan terus ke kumpulan sasaran. Pembangunan sistem ini meliputi tiga kajian utama iaitu Kajian Penyelidikan dan Pembangunan Kebangsaan, Kajian Inovasi Kebangsaan dan Kajian Kemudahan dan Peralatan STI Negara.

- Developing a National STI e-survey system. A system designed to assist in the management and implementation of online National STI survey. Through this system the collecting and disseminating of information can be done more effectively and directly to the target group. Development of this system comprises three major surveys which include the National Survey of Research and Development, National Survey of Innovation and National STI Facilities and Equipment Inventory.*

- Menggantikan penyelenggaraan Iportal Perpustakaan dengan Sistem Chamo yang lebih mesra pelanggan. Melalui sistem ini pelanggan boleh membuat carian buku dan permohonan pinjaman secara atas talian kepada 16,854 judul dan 18,003 naskah buku yang ada di perpustakaan MOSTI. Sistem Chamo ini boleh berintegrasi dengan Sistem Perpustakaan VITAL yang sedia ada di perpustakaan MOSTI. Sistem Perpustakaan VITAL merupakan sistem Pembangunan Kandungan Digital (gambar dan keratan akhbar) bagi penyediaan bahan-bahan secara digital untuk kegunaan warga MOSTI.
- Menerbitkan laporan kajian yang dilaksanakan oleh MASTIC iaitu:
  - Laporan Kajian Penyelidikan dan Pembangunan 2013;
  - Laporan Kajian Inovasi Kebangsaan 2012;
  - Laporan Kajian Petunjuk STI 2013; dan
  - Laporan Kajian Kesedaran Awam STI 2014.
- Menerbitkan data-data mengenai MOSTI bagi rujukan bagi pengurusan atasan MOSTI seperti berikut :
  - Buku MOSTI in Figures 2014,
  - Laporan Ringkasan Peruntukan MOSTI 2015,
  - Booklet R,D & C 2014,
  - Buku MOSTI Facts and Figures 2014.
- Menerbitkan buku *Jimat dan Mudah dengan Inovasi*. Ia merupakan kompilasi maklumat mengenai 20 produk/teknologi yang mudah dan inovatif untuk kegunaan seharian.

- *Replacing current iPortal Library System to Chamo Library system which is more user friendly. Through this system, users can search and book online loan applications to 16,854 titles and 18,003 volumes of books in MOSTI e-library. The system can be integrated with the existing Library System. VITAL Library System is a system of Digital Content Development (pictures and newspaper clippings) for the provision of materials for use in digital MOSTI citizens. Currently, there are 122 newspaper articles, 31 and 31 multimedia images that have been uploaded.*
- *Published reports of surveys conducted by MASTIC, namely:*
  - Research and Development Report 2013;*
  - National Innovation Survey Report 2012;*
  - STI Indicators Research Report 2013; and*
  - Public Awareness STI Report 2014.*
- *Published data for MOSTI top management reference as follows:*
  - MOSTI in Figures 2014,*
  - MOSTI Allocation Summary Report 2015,*
  - Booklet R, D & C 2014,*
  - MOSTI Facts and Figures 2014.*
- *Published 'Jimat dan Mudah dengan Inovasi' booklet. It is a compilation of information on 20 products / technologies and innovative tools for everyday use.*



# BAHAGIAN DANA

## FUNDS DIVISION

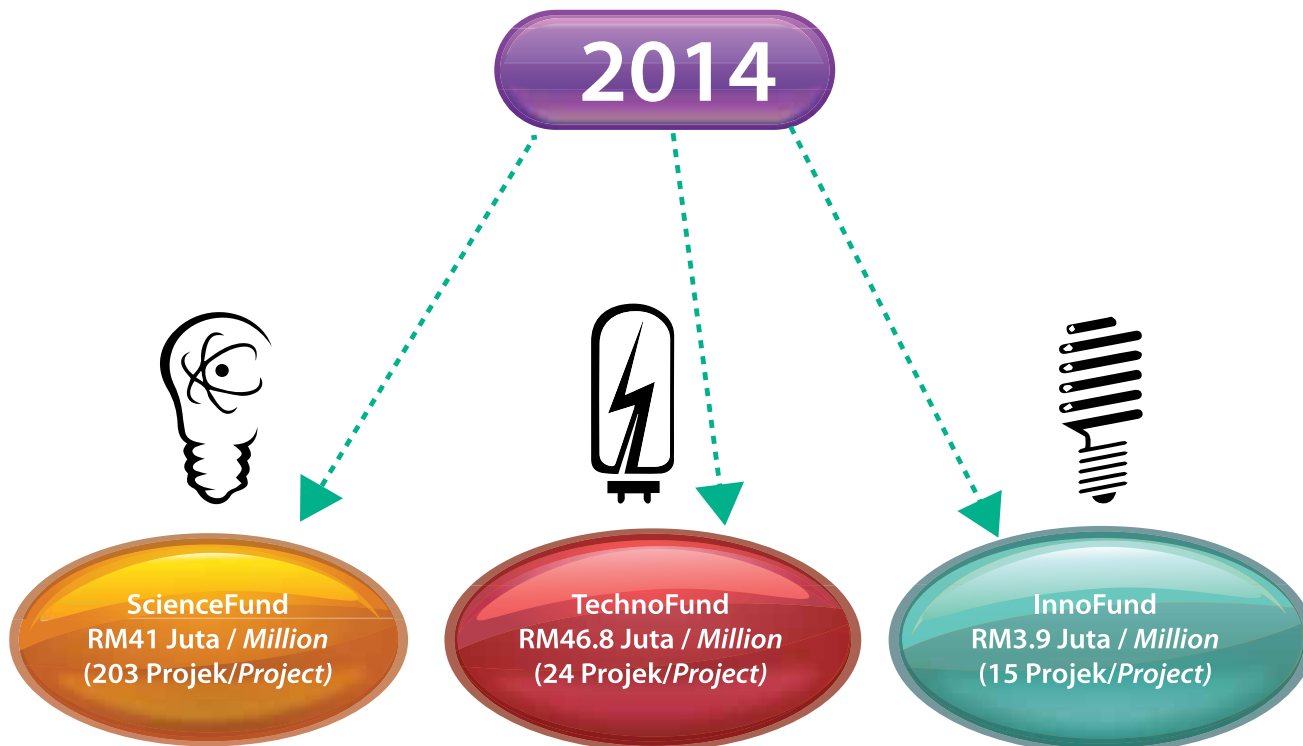


### Pencapaian/Program/Aktiviti Utama

Bahagian Dana berperanan dalam pengurusan dana Penyelidikan, Pembangunan dan pengkomersilan (R,D&C) yang cekap dan berkesan ke arah penjanaaan ilmu, sosio-ekonomi dan kesejahteraan negara. Terdapat tiga jenis dana yang disediakan iaitu Dana ScienceFund, Dana InnoFund dan Dana TechnoFund.

### Achievements/Programme/Main Activities

The main function of the Fund Division is to manage the Research, Development and Commercialisation funds effectively and efficiently to generate knowledge, socio-economy and the welfare of the nation. Three types of funds available are ScienceFund, InnoFund and TechnoFund.





Permohonan serta kelulusan mengikut jenis penerima dana bagi RMKe-10 sehingga tahun 2014 adalah seperti berikut:

*Application and approval by type of recipient of the 10th MP up to 2014 are as follows:*

**JENIS PENERIMA DANA SCIENCEFUND 2011-2014 / RECIPIENTS OF FUNDS SCIENCEFUND 2011-2014**

Penerima/Receiver	Permohonan/Application		Kelulusan/Approval		
	Bil. Projek/Project No.	Jumlah/Total (RM)	Bil. Projek/Project No.	% Bil. Projek/% Project No.	Jumlah/Total (RM)
Public IHLs	4,265	1,132,018,920	848	19.88	167,377,071
Private IHLs	894	223,368,997	181	20.25	33,595,956
GRI	451	119,736,403	111	24.61	19,467,754
PRI	13	4,429,297	4	30.77	854,000
STI Agencies	584	217,560,451	232	39.73	65,115,866
<b>Jumlah/Total</b>	<b>6,207</b>	<b>1,697,114,068</b>	<b>1,376</b>	<b>22.17</b>	<b>286,410,647</b>

**JENIS PENERIMA DANA TECHNOFUND 2011-2014 / RECIPIENTS OF FUNDS TECHNOFUND 2011-2014**

Penerima/Receiver	Permohonan/Application		Kelulusan/Approval		
	Bil. Projek/Project No.	Jumlah/Total (RM)	Bil. Projek/Project No.	% Bil. Projek/% Project No.	Jumlah/Total (RM)
Small and Medium Enterprises	770	2,581,904,014	70	9.09	131,037,271
Public IHLs	83	200,000,182	8	9.64	19,144,495
Private IHLs	9	19,076,375	4	44.44	7,159,841
GRI	29	82,973,998	3	10.34	4,828,640
STI Agencies	189	394,104,696	51	26.98	91,578,546
<b>Jumlah/Total</b>	<b>1,080</b>	<b>3,278,059,264</b>	<b>136</b>	<b>12.59</b>	<b>253,748,792</b>

**JENIS PENERIMA DANA INNOFUND 2011-2014 / RECIPIENTS OF FUNDS INNOFUND 2011-2014**

Penerima/Receiver	Permohonan/Application		Kelulusan / Approval			
	Bil. Projek/Project No.	Jumlah/Total (RM)	Bil. Projek/Project No.	% Bil. Projek/% Project No.	Jumlah/Total (RM)	
EIF	Individual	28	1,678,290	10	35.71	560,777
	Sole Proprietor	18	5,100,532	-	-	-
	Small and Medium Enterprises	158	90,639,450	37	23.42	12,378,709
CIF	Registered Associations/ NGOs	66	31,841,428	25	37.88	7,949,032
<b>Jumlah/Total</b>		<b>270</b>	<b>129,259,700</b>	<b>72</b>	<b>26.67</b>	<b>20,888,519</b>

## AKTIVITI 2014

### Majlis Penyerahan Pembiayaan Dana

Majlis Penyerahan Pembiayaan Dana Kementerian Sains, Teknologi dan Inovasi oleh Y.B. Menteri MOSTI pada 8 Januari 2014 dan 12 Mac 2014. Majlis ini sebagai salah satu medium untuk mempromosi MOSTI sebagai agensi peneraju pembangunan sains dan teknologi melalui pembiayaan dana.

## ACTIVITIES IN 2014

### Funding Presentation Event

*Funding Presentation Event by His Excellency, Minister from the Ministry of Science, Technology and Innovation on 8 January 2014 and 12 March 2014. The event is one of the mediums to promote MOSTI as an agency that leads the development of science and technology through funding.*



### Sesi Dialog YB Menteri MOSTI bersama Penerima dan Pemohon Dana serta Klinik Dana R,D&C Kementerian Sains, Teknologi dan Inovasi (MOSTI)

Program ini telah diadakan di Sabah pada 26 November 2014 di Hyatt Regency, Sabah. Sesi Dialog ini diadakan sebagai medium untuk MOSTI mendengar maklum balas daripada pihak pemohon, penerima geran dan koordinator penyelidikan mengenai isu, masalah dan cadangan untuk menambah baik sistem pengurusan sedia ada serta langkah-langkah ke arah pengkomersilan produk yang dibiayai oleh dana R,D&C MOSTI. Sesi Dialog ini juga bertujuan untuk memberi maklumat terperinci mengenai pembiayaan dana R,D&C MOSTI, terutama Dana ScienceFund dan Dana Pra-Pengkomersilan.

### *Honourable The Minister of MOSTI dialogue session together with Fund Recipients and Applicants including the R,D&C Fund Clinic of the Ministry of Science, Technology and Innovation (MOSTI)*

*This programme was held at Hyatt Regency, Sabah on 26 November 2014. Dialogue Session was held as a channel for MOSTI to receive feedback from the applicants, recipients and research coordinators on issues, problems and suggestions to improve the current management systems and formulating measures towards commercialisation of products funded by MOSTI's R,D&C. The dialogue session also aims to provide detailed information on the funding of MOSTI R, D & C, especially for ScienceFund and Pre - Commercialisation Funds.*



**Gambar 1:** Buat pertama kalinya sesi dialog turut diadakan berserta dengan sesi penilaian kewangan, teknikal dan komersil oleh panel penilai bertujuan memudahkan para pemohon dana

*Figure 1: For the first time a dialogue was held together with a financial evaluation, technical and commercial assessment panels to facilitate the fund applicants*

### Sesi Klinik Dana R,D&C

Sesi Klinik Dana R,D&C bersama pemohon Dana Kementerian Sains, Teknologi & Inovasi (MOSTI) telah diadakan pada 22 September 2014 di PICC. Matlamat utama sesi klinik ini adalah sebagai medium bagi Kementerian dalam membantu pemohon-pemohon dana MOSTI untuk mendapatkan pembiayaan bagi projek penyelidikan yang dijalankan serta memastikan permohonan projek yang dikemukakan adalah berkualiti dan menepati garis panduan dana yang dipohon. Sesi ini juga diharap dapat memberikan peluang kepada pemohon yang tidak berjaya dalam permohonan mendapatkan dana MOSTI sebelum ini melalui pertemuan dan perbincangan secara terus bersama panel penilai.

### *R,D&C's Fund Clinic sessions*

*R,D&C's Fund Clinic sessions with fund applicants of Ministry of Science, Technology and Innovation (MOSTI) was held on 22 September 2014 at PICC.*

*The main objective of the clinic is to assist MOSTI's fund applicants to finance their ongoing research and to ensure the proposed projects submitted are of quality and meets the guidelines of the applied funds.*

*This session is also to provide an opportunity for previous unsuccessful MOSTI fund applicants via meetings and discussions directly with the evaluation panel.*

## RETREAT PENGURUSAN DANA BERSAMA KLUSTER

Sesi Retreat Pengurusan Dana bersama Kluster telah diadakan pada 19-20 Disember 2014 di Ancasa Residences, Port Dickson bertujuan untuk memperhalusi dan menambah baik SOP aliran kerja, mengemas kini carta alir kerja dan menyediakan pelan tindakan jangka pendek dan jangka panjang. Sesi ini juga bertindak sebagai medium untuk mengemukakan cadangan penambahbaikan pengurusan dana MOSTI secara keseluruhan dan mengenal pasti langkah-langkah untuk mengoptimumkan penggunaan peruntukan dan perbelanjaan tahunan.

### Pameran

Dana juga turut serta dalam pameran-pameran utama yang bertujuan untuk mempromosi Dana yang ditawarkan oleh MOSTI dan meningkatkan pengetahuan dan kefahaman orang ramai tentang Dana Sains dan Pra Pengkomersilan yang ditawarkan oleh MOSTI.

- Persidangan Inovasi Dan Pengkomersilan Kementerian Sains, Teknologi Dan Inovasi (MOSTI) pada 13-14 Ogos 2014 di SACC Shah Alam.
- Pameran Intrade 2014 yang berlangsung pada 20-22 Oktober 2014 di Matrade.
- Persidangan & Pameran Inovasi Kebangsaan (NICE2014) pada 31 Oktober – 2 November di PWTC.
- Pameran 5th I-INNOVA'2014 pada 28-29 November 2014 di Universiti Sains Islam Malaysia.

## FUND MANAGEMENT RETREAT WITH CLUSTER

*The session with Fund Management Retreat with Cluster was held on 19 - 20 December 2014 in Deluxe Residences, Port Dickson aimed to enhance and improve SOP workflows, updating workflow charts and formulate short term and long term action plans.*

*This session also serves as a vehicle to propose the overall improvements of MOSTI fund management and also identify measures to optimise the utilisation of annual allocation and expenses.*

### Exhibition

*The Funds also participated in major exhibitions to promote Funds by MOSTI and to enhance public understanding and knowledge of science and Pre- Commercialisation Funds offered by MOSTI.*

- *MOSTI Innovation and Commercialisation.*
- *Conference held in SACC Shah Alam on 13-14 August 2014.*
- *Intrade Exhibition 2014 held on 20-22 October 2014 at the Matrade.*
- *National Innovation Conference & Exhibition (NICE2014) on October 31 to November 2 at PWTC.*
- *5th I-INNOVA'2014 Exhibition on 28-29 November 2014 at Islamic Science University of Malaysia.*



## Dana Yang Diuruskan Bahagian Dasar ICT

Bahagian Dasar ICT bertanggungjawab menguruskan beberapa dana di bawah Peruntukan Pembangunan yang bertujuan untuk menggalakkan penemuan-penemuan baru dalam bidang ICT seperti penciptaan inovasi, perisian baru dan meningkatkan bilangan *technopreneur*.

Dana-dana yang diuruskan adalah seperti berikut :

- i. ScienceFund
- ii. Pra-Pengkomersilan (TechnoFund); dan
- iii. Pra-Pengkomersilan (InnoFund)

Berikut adalah bilangan permohonan yang diluluskan mengikut kategori sepanjang **tahun 2014** iaitu:

**Rajah 1: Bilangan Projek ScienceFund yang diluluskan mengikut FOR (2014)**

*Figure 1: Number of sciencefund project approved by FOR (2014)*

Jenis Dana <i>Type of Fund</i>	Bil Permohonan <i>No. Participation</i>	Bil Projek Diluluskan <i>No. of Projects Approved</i>	Amaun Diluluskan (RM) <i>Approved Amount</i>	Pencapaian tahun 2014/ <i>Achivement in 2014</i>		
				Bil. Projek Siap <i>No. of Completed Projects</i>	Harta Intelek (difaikkan) <i>Intellectual Property (filed)</i>	Kertas Kerja Diterbitkan Untuk Persidangan <i>Working Papers Published In Conference</i>
<i>Science Fund</i>	170	27	3.8juta / <i>Million</i>	70	59	308
<i>Techno Fund</i>	65	6	7.6juta/ <i>Million</i>	4	3	0
<i>Inno Fund</i>	18	2	414,140	0	0	0

## Dana Yang Diluluskan Bahagian Industri

### • SCIENCEFUND

Sebanyak 267 permohonan projek ScienceFund telah diterima oleh Kluster Industri dan daripada jumlah tersebut, 50 projek telah diluluskan dengan jumlah peruntukan sebanyak RM 13,508,473.00. Sains Kejuruteraan merupakan bidang yang tertinggi diluluskan pada tahun 2014 iaitu sebanyak 19 projek dengan jumlah yang diluluskan sebanyak RM 4,365,729.00. (sila rujuk Rajah 1).

## Funds Managed by ICT Policy Division

*ICT Policy Division is responsible for managing several funds under Development Allocation which aims to encourage the development of new discoveries in the field of ICT, such as innovation of new software and increasing the number of technopreneurs.*

*The managed funds are as follows:*

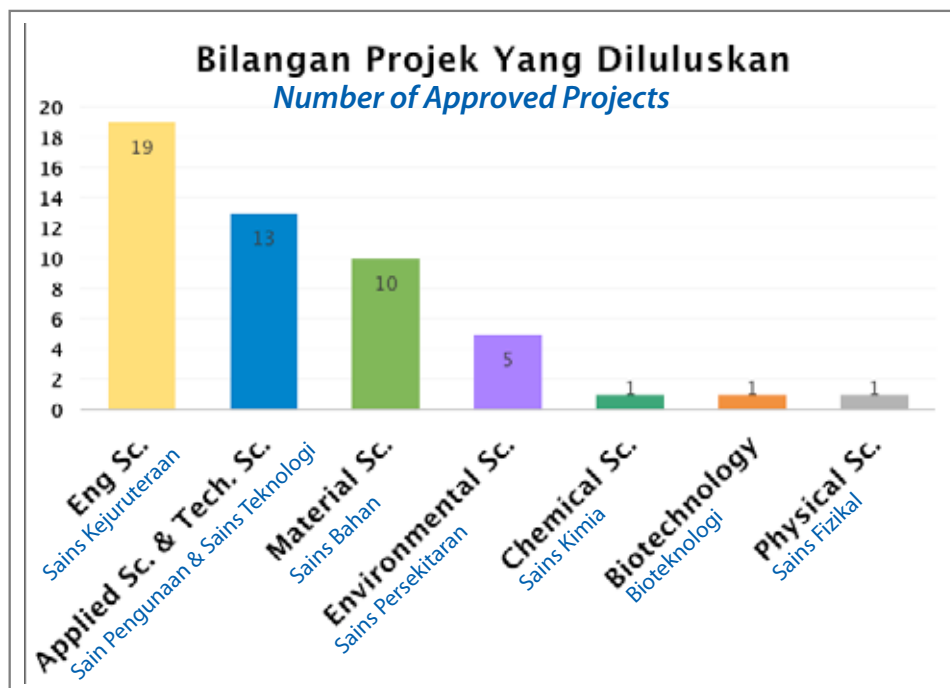
- *ScienceFund*
- *Pre-Commercialisation (TechnoFund); and*
- *Pre-Commercialisation (InnoFund)*

*Below are the number of approved applications by category for the year 2014:*

## Fund Approved by Industry Section

### • SCIENCEFUND

*A total of 267 ScienceFund project applications were received by Industry Cluster and 50 projects of these were approved with a total allocation of RM13,508,473.00. Engineering Science is the highest approved field in 2014 with 19 approved projects with a total of RM4,365,729.00. (see Figure 1).*



Rajah 1: Bilangan Projek ScienceFund yang diluluskan mengikut FOR (2014)

Figure 1: Number of sciencefund project approved by FOR (2014)

#### • TECHNOfUND

Sebanyak 112 permohonan projek TechnoFund telah diterima dan daripada jumlah tersebut, 14 projek telah diluluskan dengan jumlah peruntukan sebanyak RM24,640,497.19 Sains Kejuruteraan merupakan bidang yang tertinggi diluluskan pada tahun 2014 iaitu sebanyak 11 projek. Untuk lain-lain bidang sila rujuk Jadual 1.

#### • TECHNOfUND

*A total of 112 TechnoFund project applications were received and the total of 14 projects were approved with a total allocation of RM24,640,497.19. Engineering Science is the highest approved field in 2014 with a total of 11 projects. For other fields, kindly refer to Table 1.*

Table 1: Projek TechnoFund yang diluluskan pada tahun 2014 berdasarkan bidang fokus

*Table 1: TechnoFund projects approved in the year 2014 based on the areas focus*

Bidang Fokus / Focus Areas	Bilangan Projek / Number of Projects
Sains Kejuruteraan / Engineering Sciences	11
Sains Bahan Termaju / Advanced Materials Science	2
Sains Persekitaran / Environmental Science	1
Sains Pertanian / Agricultural Science	0
Sains Perubatan dan kesihatan / Medical and Health Sciences	0

**Jadual 1: Statistik permohonan projek-projek penyelidikan bagi tahun 2014***Table 1: Statistics on application of research projects for 2014*

Bil. No	Dana R&D <i>R&amp;D Fund</i>	Bilangan Projek Diterima <i>No. of Projects Received</i>	Bilangan Projek Diluluskan <i>No. of Projects Approved</i>	Bilangan Projek Tidak Diluluskan <i>No. of Projects Not Approved</i>	Bilangan Projek KIV <i>No. of KIV Projects</i>
1.	ScienceFund	163 (65 dalam bidang S2S) <i>(65 in S2S related fields)</i>	10	44	11
2.	TechnoFund	5	0	5	0
3.	InnoFund	0	0	0	0
4.	Flagship DSTIN	3	0	1	2

**Jadual 2: Bilangan Projek Sedia Ada Dalam Pemantauan Sepanjang 2014***Table 2: No. of Existing Projects Being Monitored in 2014*

Bil. No.	Petunjuk Prestasi <i>Performance Indicators</i>	Pencapaian (Kuantiti) <i>Achievement (Quantity)</i>
1.	Bil. Projek R&D yang dibiayai <i>No. of funded R&amp;D Projects</i>	118
2.	Bil. Projek yang diluluskan (ScienceFund/ TechnoFund/ Innofund) <i>No. of approved R&amp;D Projects</i>	10
3.	Bil. Mesyuarat Penilaian dan Kewangan (ScienceFund/ TechnoFund/ Innofund) <i>No. of Evaluation and Financial Meetings</i>	19
4.	Bil. Bengkel Pemantauan Projek-Projek (ScienceFund/ TechnoFund/ Innofund) <i>No. of Project Monitoring Workshops</i>	12

**Dana Yang Diuruskan Bahagian Teras Sains dan teknologi**

- 76 mesyuarat penilaian bagi permohonan di bawah Dana ScienceFund (SF) telah diadakan sepanjang tahun 2014 melibatkan sebanyak 526 permohonan telah dinilai. Jumlah permohonan yang diterima pada tahun ini adalah 14% lebih tinggi dari tahun sebelumnya.
- Penilaian permohonan di bawah Dana Pra-pengkomersilan (Community InnoFund (CIF) dan TechnoFund (TF) dijalankan dalam format mesyuarat secara berkala mengikut keperluan. Sebanyak enam permohonan CIF dan 27 permohonan TF telah dinilai bagi tahun 2014.

**Fund Managed by Division of Core Science and Technology**

- 76 evaluation meetings for the application under ScienceFund (SF) were held in 2014 constituting a total of 526 applications. The number of applications received this year is 14% higher than the previous year.
- Evaluation of applications under the Pre-commercialisation Community InnoFund (CIF) and TechnoFund (TF) was conducted in regular meetings as and when required. A total of six CIF applications and 27 TF applications were assessed in 2014.

- Dua Bengkel Pemantauan Projek di bawah SF telah diadakan pada **24** Jun 2014 dan pada 4 Disember 2014 dengan sejumlah **85** projek telah dipantau. Tujuan bengkel-bengkel ini diadakan adalah untuk memantau perkembangan setiap projek supaya projek berjalan lancar dan mengikut jadual seperti yang telah dirancang.
- **12 lawatan pemantauan ke tapak projek di bawah Dana CIF** telah dijalankan bagi projek yang berstatus *on-going* bagi tahun 2014. Lawatan bertujuan untuk memantau perkembangan setiap projek supaya projek berjalan lancar dan mengikut jadual seperti yang telah dirancang.
- Tujuh lawatan pemantauan tapak projek di bawah Dana TF telah dijalankan bertujuan untuk mengesahkan Laporan Pencapaian *Milestone* Projek dan Laporan Kewangan Projek sebelum mengesyorkan pembayaran berperingkat dibuat kepada projek.
- *Two workshops under SF Monitoring Project were held on June 24, 2014 and on December 4, 2014 with a total of 85 monitored projects. The objective of the workshops was to monitor the progress of each project to ensure it runs smoothly as scheduled.*
- **12 sites monitoring visits to the on-going status projects under CIF Funds** were conducted for the year 2014. The visit was to monitor the progress of each project to ensure the project runs smoothly and on schedule as planned.
- *Seven site monitoring visits to the projects under TF Fund were conducted to verify the Milestone Project Performance Report and the Project Financial Report before recommending the staggered payments made to the project.*



**Gambar 3 dan 4:**  
Pemantauan Projek  
di bawah dana  
TechnoFund

*Figures 3 and 4:  
Monitoring Projects  
under TechnoFund*

**“ The objective of the workshops was to monitor the progress of each project to ensure it runs smoothly as scheduled. ”**

**“ Tujuan bengkel-bengkel ini diadakan adalah untuk memantau perkembangan setiap projek supaya projek berjalan lancar dan mengikut jadual seperti yang telah dirancang. ”**





# LAPORAN BAHAGIAN SEKTOR PENGURUSAN

- Bahagian Kewangan
- Bahagian Pengurusan Sumber Manusia
- Bahagian Akaun
- Bahagian Pengurusan Teknologi Maklumat
- Bahagian Pembangunan
- Bahagian Pentadbiran

## *DIVISION REPORT* **MANAGEMENT SECTOR**

- ◆ *Finance Division*
- ◆ *Human Resource Management Division*
- ◆ *Accounts Division*
- ◆ *Information Technology Management Division*
- ◆ *Development Division*
- ◆ *Administration Division*

# BAHAGIAN KEWANGAN

## LAPORAN PRESTASI PERBELANJAAN MENGRUS BAGI TAHUN 2014 KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI (MOSTI)

### LATAR BELAKANG

Bagi tahun 2014, peruntukan Perbelanjaan Mengurus MOSTI berjumlah RM724,263,110.

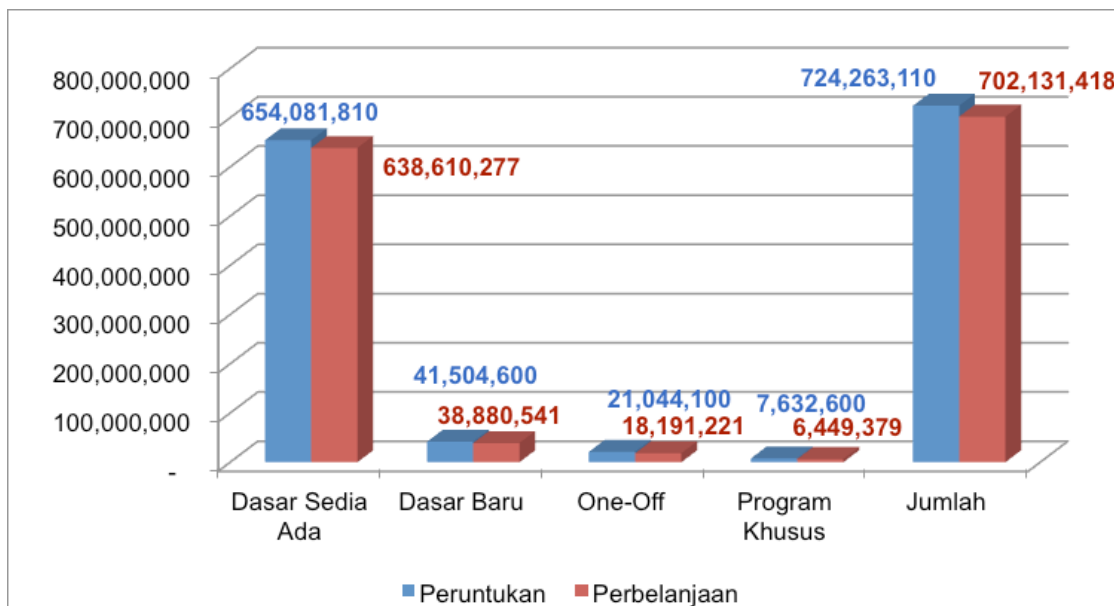
## PRESTASI PERBELANJAAN KESELURUHAN MENGRUS MOSTI SEHINGGA 31 DISEMBER 2014

Sehingga 31 Disember 2014, prestasi perbelanjaan adalah sebanyak RM702,131,420 (96.94%). Pecahan butiran perbelanjaan sehingga 31 Disember 2014 mengikut Dasar Sedia Ada, Dasar Baru, *One-Off* dan Program Khusus adalah seperti di Jadual 1.

**Jadual 1: Pecahan Peruntukan Dan Perbelanjaan Mengikut Dasar**

	Peruntukan (RM)	Perbelanjaan (RM)	Prestasi (%)
Dasar Sedia Ada	654,081,810	638,610,277	97.63
Dasar Baru	41,504,600	38,880,541	93.68
One-Off	21,044,100	18,191,221	86.44
Program Khusus	7,632,600	6,449,379	84.50
<b>JUMLAH</b>	<b>724,263,110</b>	<b>702,131,420</b>	<b>96.94</b>

**Carta 1: Perbandingan Antara Peruntukan Dan Perbelanjaan Mengikut Dasar**



# FINANCE DIVISION

## OPERATIONAL EXPENDITURE PERFORMANCE REPORT FOR THE YEAR 2014

MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION (MOSTI)

### BACKGROUND

For the year 2014, the operating budget allocated for MOSTI was RM724,263,110.

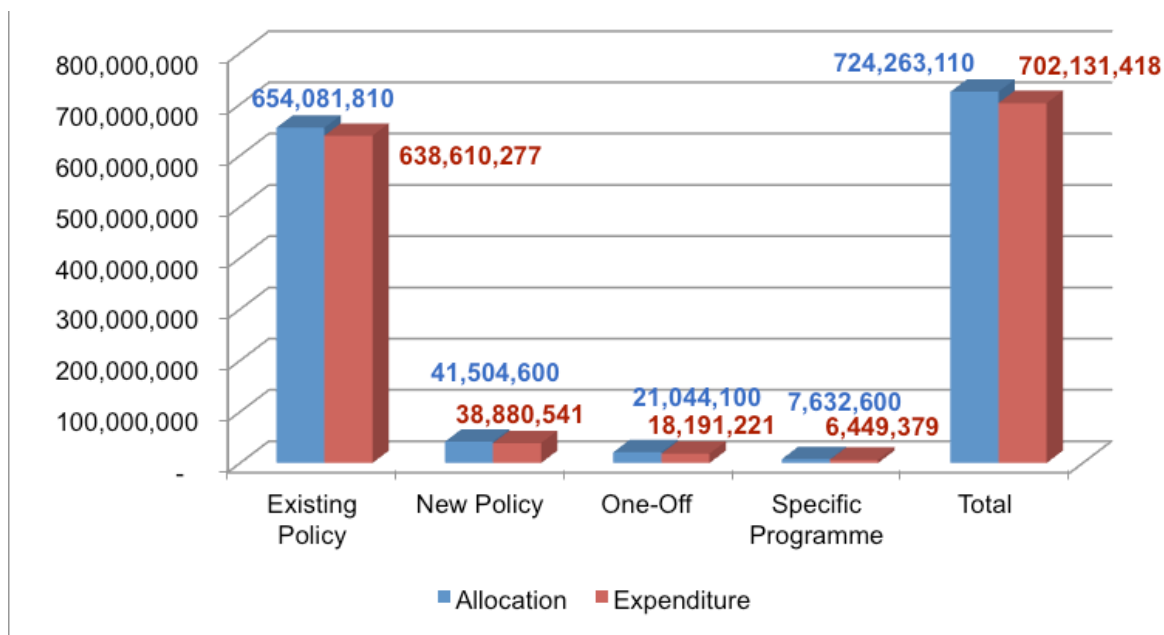
## OPERATIONAL EXPENDITURE PERFORMANCE AS ON 31ST DECEMBER 2014

Until 31st December 2014, MOSTI's total operational expenditure was RM702,131,420 (96.94%). Details of expenditure according to Existing Policy, New Policy, One-Off and Specific Programme are shown in Table 1.

**Table 1: Breakdown of Allocations and Expenditures Based on Policy**

	Allocation (RM)	Expenditure (RM)	Performance (%)
Existing Policy	654,081,810	638,610,277	97.63
New Policy	41,504,600	38,880,541	93.68
One-Off	21,044,100	18,191,221	86.44
Specific Programme	7,632,600	6,449,379	84.50
<b>TOTAL</b>	<b>724,263,110</b>	<b>702,131,420</b>	<b>96.94</b>

**Chart 1: Comparison Between Allocation and Expenditure Based on Policy**



# BAHAGIAN PENGURUSAN SUMBER MANUSIA *HUMAN RESOURCES MANAGEMENT DIVISION*



Lawatan Tapak Penubuhan Pusat Nano Negara /  
*Site Visit The establishment of the National Centre for Nano*



Lawatan ke Agensi Angkasa Negara / *A visit to the National Space Agency*



Lab Transformasi Perkhidmatan Awam di Intan Bukit Kiara /  
*Public Service Transformation Lab at Intan Bukit Kiara*

## 1. SEKSYEN PEMBANGUNAN ORGANISASI DAN PERANCANGAN SUMBER MANUSIA

- Penyusunan semula Lembaga Perlesenan Tenaga Atom. Cadangan ini telah diluluskan oleh Jabatan Perkhidmatan Awam (JPA) pada 17 Julai 2014. Tarikh kuat kuasa adalah mulai 1 Januari 2015.
- Pengukuhan perjawatan Direktorat Nanoteknologi Kebangsaan Fasa I telah diluluskan pada 17 Julai 2014. Pertambahan sebanyak enam perjawatan baharu berkuatkuasa mulai 1 Mac 2015.
- Penstrukturan semula dan pengukuhan perjawatan Jabatan Kimia Malaysia telah diluluskan pada 16 Mei 2014 dan tarikh kuat kuasa adalah mulai 16 Mei 2014. Sebanyak 117 perjawatan telah diluluskan.

## 1. ORGANISATIONAL DEVELOPMENT AND HUMAN RESOURCES PLANNING SECTION

- *The restructuring of Atomic Energy Licensing Board. This proposal was approved by the Public Service Department (JPA) on 17 July 2014. The effective date was January 1, 2015.*
- *Strengthening of the National Nanotechnology Directorate staffing Phase I was approved on July 17, 2014. The increase of six new posts effective 1 March 2015.*
- *Restructuring and strengthening the designation of the Malaysia Chemistry Department was approved on May 16, 2014 and the effective date was from 16 May 2014. A total of 117 posts was approved.*

- Sebanyak 15 permohonan pindaan/pembetulan waran perjawatan telah diperakukan oleh JPA dan diluluskan oleh Kementerian Kewangan.
- Semakan dan pindaan terhadap Deraf Senarai Perjawatan Tahun 2015 berdasarkan kepada waran-waran perjawatan yang dikeluarkan sehingga 15 Julai 2014 tercapai sepenuhnya. Semua pindaan telah dikemukakan kepada JPA dan Kementerian Kewangan (MOF). Buku Senarai Perjawatan ini diterbitkan oleh MOF bagi tujuan pembentangan Bajet 2015 di Parlimen.
- Semua rekod dikemas kini secara berkala setiap bulan. Maklumat menjadi sumber rujukan utama perjawatan di peringkat Kementerian.

## 2. SEKSYEN PERKHIDMATAN, BAHAGIAN PENGURUSAN SUMBER MANUSIA, MOSTI

- Mesyuarat MBJ Peringkat Ibu Pejabat MOSTI telah berjaya diadakan sebanyak empat kali pada tahun 2014 mengikut sukuan tahun yang ditetapkan
- Kursus Pengukuhan Prinsip Perkhidmatan telah berjaya diadakan pada 3 hingga 6 September 2014 di Hotel Seri Malaysia, Bagan Lalang untuk meningkatkan kemahiran pegawai tentang prinsip perkhidmatan supaya selari dengan prosedur / pekeliling yang berkuat kuasa.

- *A total of 15 applications for amendments / corrections of employment warrant have been endorsed by the JPA and approved by the Ministry of Finance.*
- *Revisions and amendments of the 2015 Designation List Draft based on employment warrants issued until July 15, 2014 have been fully achieved. All amendments were submitted to the JPA and the Ministry of Finance (MOF). The Employment List book was published by MOF for the presentation of Budget 2015 in Parliament.*
- *All records are updated monthly. Information is the key source of reference for designations at Ministerial level.*

## 2. SERVICES SECTION, HUMAN RESOURCE MANAGEMENT DIVISION, MOSTI

- *MOSTI MBJ Headquarters Meetings was successfully held for four times in 2014 based on the yearly quarters.*
- *The Principles of Service Enhancements courses was successfully held from 3 to 6 September 2014 at the Hotel Seri Malaysia Bagan Lalang to upgrade the skills of officers on the principles of service so as to be in line with the procedures / circulars currently enforced.*



Mesyuarat MBJ MOSTI Bil. 4/2014 di Kuching, Sarawak /  
MBJ meeting MOSTI Num. 4/2014 in Kuching, Sarawak



Lawatan Kerja ke Pejabat Setiausaha Kerajaan Negeri Sarawak semasa Mesyuarat MBJ MOSTI Bil. 4/2014 di Kuching, Sarawak /  
Visit to the State Secretary's Office  
MOSTI MBJ Meeting No. 4/2014 in Kuching, Sarawak

### 1. SEKSYEN PEMBANGUNAN SUMBER MANUSIA DAN KOMPETENSI

- 63 program latihan melibatkan 3,195 orang peserta.
- 89.6% atau 456 pegawai menghadiri sekurang-kurangnya tujuh hari kursus.
- Memproses 101 permohonan penganjuran kursus.
- Melaksanakan 11 Program Hal Ehwal Islam.
- Memproses 29 permohonan untuk Hadiah Latihan Persekutuan.
- Memproses 25 permohonan pegawai untuk cuti belajar.
- Menerima 93 permohonan untuk menjalani latihan industri.

### 3. HUMAN RESOURCE DEVELOPMENT AND COMPETENCY SECTION

- 63 training programs involving 3,195 participants.
- 89.6 % or 456 officers attended at least seven days of the course.
- Processed 101 course organisation applications.
- Implemented 11 Islamic Affair Programmes.
- Processed 29 applications for Federal Training Gifts.
- Processed 25 officers' study leave applications.
- Received 93 industrial training applications.



Program Transformasi Minda Siri 1 2014  
Pada 6 Hingga 11 April 2014 Di Pusat  
Latihan Lkim Camar Laut, Bagan Lalang

*Mind Transformation Program Series 1  
2014 on 6 until 11 April 2014 at the Training  
Centre LKIM Sea gulls, Bagan Lalang*

Kursus Bina Insan Zon Sabah  
Pada 28 Hingga 30 April 2014  
Bertempat Di Hotel Klagan, Kota  
Kinabalu Sabah

*Human Development Courses  
Zone Sabah on 28 until 30 April  
2014 in Klagan Hotel, Kota  
Kinabalu, Sabah*



Kursus Setiausaha Cemerlang Pada  
30 Mei Hingga 01 Jun 2014 Bertempat  
Di Hotel Emerald Puteri Sungai Petani  
Kedah

*Excellent secretary courses on May 30  
until June 1, 2014 in Emerald Princess  
Hotel Sungai Petani Kedah*



### 1. UNIT PENTADBIRAN

- Hari Terbuka Bahagian Pengurusan Sumber Manusia (PSM), MOSTI telah diadakan pada 16 hingga 19 Disember 2015 dengan pelbagai pengisian program. Rekod kehadiran telah dicatat dengan seramai 246 orang yang hadir secara keseluruhan.

### 4. ADMINISTRATIVE UNIT

- *MOSTI Human Resource Management Open Day (PSM), was held on 16 and 19 December 2015 with a variety of programs. Attendance was recorded at a total of 246 people.*



Sesi Semakan Buku Perkhidmatan Sempena Hari Terbuka PSM Tahun 2014 / Book Review session in conjunction Services Open Day PSM 2014



Kaunter Pengurusan Psikologi Sempena Hari Terbuka PSM Tahun 2014 / Psychological Management counter in conjunction with the PSM Open Day 2014



Sesi Semakan Sistem Profail Latihan (SPL) Sempena Hari Terbuka PSM Tahun 2014/ Revision sessions Training Profile System (SPL) in conjunction with Open Days 2014 PSM

### UNIT HRMIS

- Bengkel Pengemaskinian Maklumat Perjawatan HRMIS bersama Jabatan/Agensi pada 3 hingga 5 November 2014 bertempat di Bilik Mesyuarat MASTIC, MOSTI.

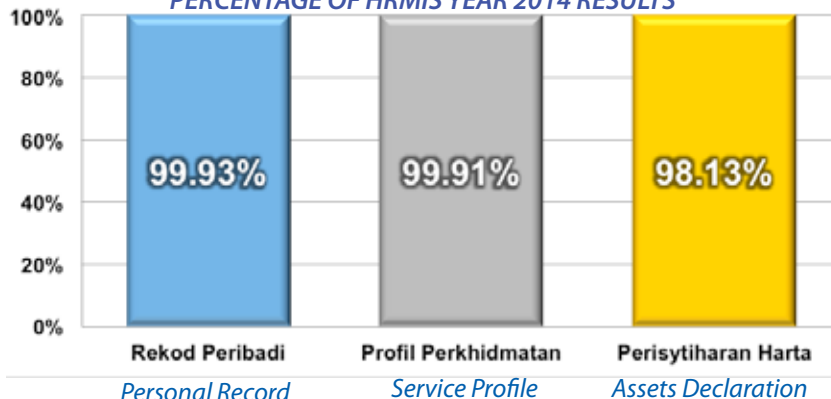
### HRMIS UNIT

- *HRMIS Employments Information Update Workshop with Departments / Agencies was held from 3 to 5 November 2014 at MASTIC meeting room, MOSTI.*



### PERATUSAN PENCAPAIAN PELAKSANAAN HRMIS TAHUN 2014

PERCENTAGE OF HRMIS YEAR 2014 RESULTS



# BAHAGIAN AKAUN

## ACCOUNT DIVISION



### Latar Belakang Penubuhan Bahagian Akaun MOSTI

Bahagian Akaun MOSTI diwujudkan pada 10 Oktober 2013 diketuai oleh Setiausaha Bahagian Akauntan Gred W54. Terdapat empat (4) seksyen iaitu Seksyen Perakaunan Pengurusan, Seksyen Perundingan dan Pemantauan, Seksyen Perakaunan Kewangan, serta Seksyen Pentadbiran dan Kewangan. Terdapat 24 perjawatan di Bahagian Akaun MOSTI. Sehingga kini, tujuh belas (17) perjawatan telah diisi. Jawatan yang belum dibuat pengisian ialah satu (1) perjawatan bagi Fasa 1 dan enam (6) perjawatan bagi Fasa 3 menjadikan tujuh (7) perjawatan lagi yang belum diisi.

### Pencapaian KPI 2014

Secara umumnya Bahagian Akaun MOSTI telah mencapai KPI yang ditetapkan pada tahun 2014 seperti berikut:

BIL	INDIKATOR	SASARAN	PENCAPAIAN
1	Mesyuarat JPPAK	4 kali	4 kali
2	Latihan dan Pengurusan Perubahan		
i)	Latihan (Polisi & Standard)	4 Latihan	4 Latihan (Kursus)
ii)	Aktiviti Pengurusan Perubahan	6 Aktiviti	6 Aktiviti (4 Dialog Akruan, 2 Taklimat)
iii)	End User Training (functional)	100% EU 1GFMAS di setiap PTJ sebelum 31/12/2014	Ditangguhkan berdasarkan keputusan Mesyuarat Pengurusan JANM
iv)	Manual Perakaunan Akruan	100% EU 1GFMAS di setiap PTJ sbml 31/12/2014	<ul style="list-style-type: none"> <li>Latihan kpd trainers (3-5 Jun)</li> <li>Latihan kpd PTJ (11-12 Nov)</li> </ul>
3	Mesyuarat Kumpulan Kerja Pengumpulan Data Kementerian	KK ATA & AUC - 6 mesyuarat KK AA - 6 mesyuarat KK ABT - 6 mesyuarat KK ABB - 6 mesyuarat	KK ATA & AUC - 5 mesyuarat KK AA - 6 mesyuarat KK ABT - 6 mesyuarat KK ABB - 3 mesyuarat

### Background of the Establishment of the Account Department

Account Department of MOSTI was established on 10th October 2013 and headed by the Secretary of Account Department Grade W54. There are four (4) sections which are Management Accounting Section, Consulting and Monitoring Section, Financial Accounting Section, and Administration and Finance Section. There are 24 posts in the Account Department of MOSTI. To date, seventeen (17) of the posts have been filled. Vacant positions are (1) staffing for Phase 1 and six (6) positions for Phase 3 to make seven (7) other posts unfilled.

### KPI Achievement of 2014

In general, the Account Department of MOSTI has achieved the KPI set in 2014 such as follows:

NO	INDICATOR	TARGET	ACHIEVEMENT
1	JPPAK Meeting	4 times	4 times
2	Training and Change Management		
i)	Training (Policy & Standard)	4 Training	4 Training
ii)	Change Management Activity	6 Activites	6 Activities (4 Accrual Dialogs, 2 Briefing)
iii)	End User Training (functional)	100% EU 1GFMAS at every PTJ before 31/12/2014	Suspended by decision of the AG's Management Meeting
iv)	Accrual Accounting Manual	100% EU 1GFMAS at every PTJ before 31/12/2014	<ul style="list-style-type: none"> <li>Training of trainers (3<sup>rd</sup>-5<sup>th</sup> June)</li> <li>Training of PTJ (11<sup>th</sup>-12<sup>th</sup> Nov)</li> </ul>
3	Meeting of the Working Group on Data Collection Ministry	KK ATA & AUC - 6 meetings KK AA - 6 meetings KK ABT - 6 meetings KK ABB - 6 meetings	KK ATA & AUC - 5 meetings KK AA - 6 meetings KK ABT - 6 meetings KK ABB - 3 meetings



BIL	INDIKATOR	SASARAN	PENCAPAIAN		
4.	Penyerahan Data Baki Awal Aset & Liabiliti untuk disahkan oleh UAD				
	Data "Cut-Off" Date Yang Disemak	Data Baki Awal Diserah Untuk Diaudit	Pengesahan Juruaudit Dalam Selesai	Data Baki Awal Diserah Untuk Diaudit	Pengesahan Juruaudit Dalam Selesai
i)	31 Januari 2014	8 Mac 2014	14 Julai 2014	1 Julai 2014 3 Julai 2014	25 Julai 2014
ii)	31 Mei 2014	1 Julai 2014		4 Julai 2014 7 Julai 2014 4 Ogos 2014	21 Ogos 2014 26 Sept 2014
iii)	30 September 2014	13 Oktober 2014	27 Oktober 2014	13 Okt 2014 14 Okt 2014 15 Okt 2014	13 Jan 2015 29 Jan 2015
iv)	31 Disember 2014	19 Januari 2015	6 Februari 2015	16 Jan 2015 23 Jan 2015	26 Mac 2015 15 April 2015

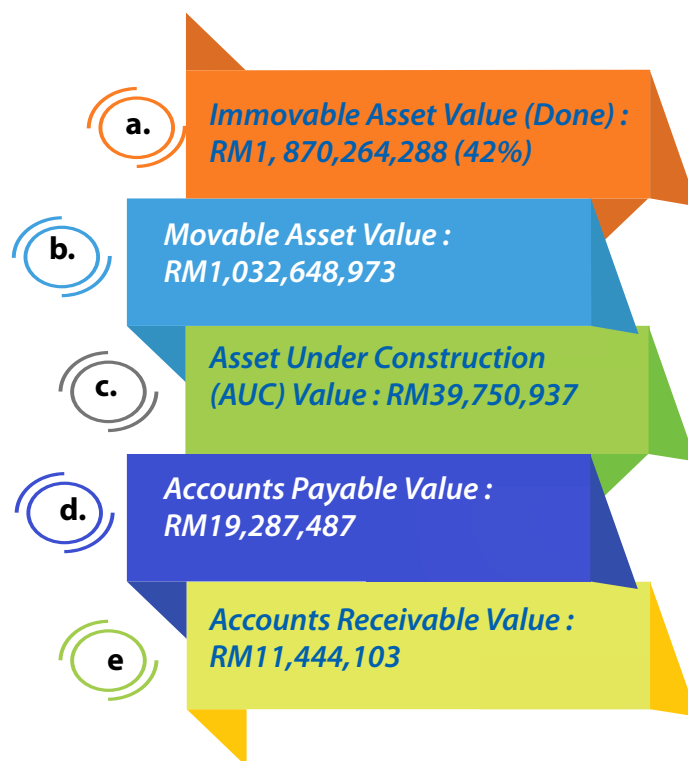
NO	INDICATOR	TARGET	ACHIEVEMENT		
4.	Opening Balance Data submission Assets & Liabilities to be confirmed by the UAD				
	Data "Cut-Off" Revised Date	Opening Balance data Submit to Audited	Auditor Confirmation Done	Opening Balance data Submit to Audited	Auditor Confirmation Done
i)	31 <sup>st</sup> January 2014	8 <sup>th</sup> March 2014	14 <sup>th</sup> July 2014	1 <sup>st</sup> July 2014 3 <sup>rd</sup> July 2014	25 <sup>th</sup> July 2014 21 <sup>st</sup> August 2014
ii)	31 <sup>st</sup> May 2014	1 <sup>st</sup> July 2014		4 <sup>th</sup> July 2014 7 <sup>th</sup> July 2014 4 <sup>th</sup> August 2014	26 <sup>th</sup> Sept 2014
iii)	30 <sup>th</sup> September 2014	13 <sup>th</sup> October 2014	27 <sup>th</sup> October 2014	13 <sup>th</sup> Oct 2014 14 <sup>th</sup> Oct 2014 15 <sup>th</sup> Oct 2014	13 <sup>th</sup> Jan 2015 29 <sup>th</sup> Jan 2015
iv)	31 <sup>st</sup> December 2014	19 <sup>th</sup> January 2015	6 <sup>th</sup> February 2015	19 <sup>th</sup> Jan 2015 23 <sup>rd</sup> Jan 2015	26 <sup>th</sup> March 2015 15 <sup>th</sup> April 2015

**Aktiviti pengumpulan data baki awal aset dan liabiliti**

Dalam tahun 2014 aktiviti Bahagian Akaun MOSTI tertumpu kepada persediaan pelaksanaan perakaunan akruan. Aktiviti utama yang dijalankan ialah pengumpulan data baki awal aset dan liabiliti. **Nilai baki awal aset dan liabiliti sehingga 31 Disember 2014 adalah seperti berikut:**

**Collection Data Activities for Beginning Balances of Assets and Liabilities**

*In 2014 Account Department of MOSTI activities focused on the preparation of the implementation of accrual accounting. The main activities carried out was data collection balances of assets and liabilities. **The balances of assets and liabilities until 31st December 2014 such as follows:***



# BAHAGIAN PENGURUSAN TEKNOLOGI MAKLUMAT *INFORMATION TECHNOLOGY MANAGEMENT DIVISION*



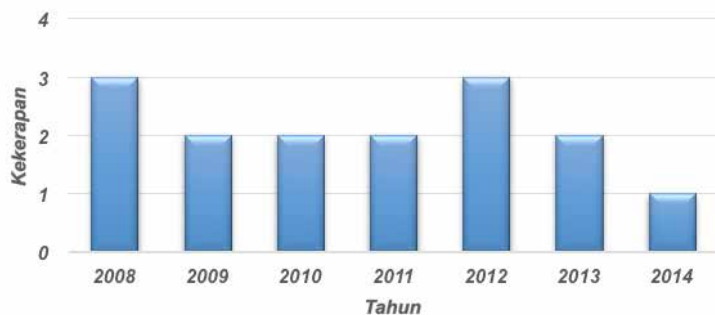
## 1. PENCAPAIAN DAN PRESTASI 2014

- a. Keputusan Penilaian Laman Web/Portal Agensi Kerajaan 2013 telah dikeluarkan oleh MDeC pada Mac 2014. **Portal MOSTI telah berjaya mengekalkan penarafan lima (5) bintang bagi Penilaian Laman Web/Portal Agensi Kerajaan 2013 bagi kali ketiga sejak tahun 2010.** Manakala dari segi kedudukan antara kementerian, Portal MOSTI mendapat kedudukan ke empat belas (14) daripada kesemua 24 Kementerian. Portal MOSTI berkongsi kedudukan dengan lima (5) Kementerian lain.
- b. Portal MOSTI juga berjaya mendapat tempat ketiga bagi pertandingan laman sesawang versi Bahasa Melayu sempena Bulan Bahasa Kebangsaan** Peringkat MOSTI tahun 2014.
- c. MOSTI kini adalah pengguna teknologi *Augmented Reality* dan *Kinect* (3D depth sensor) dimana ia digunakan untuk meningkatkan tahap penyampaian perkhidmatan MOSTI kepada orang awam. Terdapat ruangan yang dikenali "Dinding Interaktif MOSTI" di lobi blok C5, MOSTI dan aplikasi mudah alih yang boleh dimuat turun melalui Google Play dan Appstore iaitu "MOSTI Mobile" yang menyediakan maklumat mengenai dana/geran, ePerkhidmatan, indeks prestasi utama (KPI), berita, jabatan/agensi, tahap kepuasan pelanggan dan permainan interaktif.

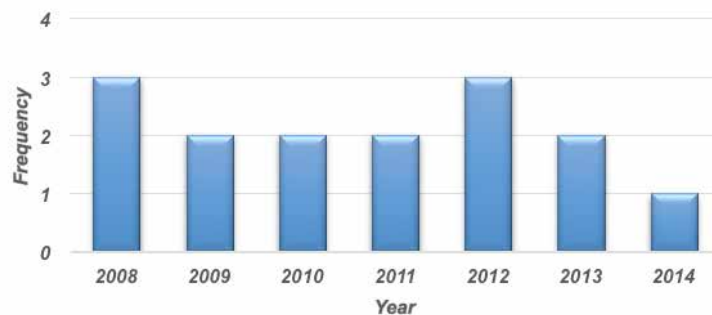
## 1. ACHIEVEMENT AND PERFORMANCE 2014

- a. *The results for Malaysia Government Portals and Websites Assessment (MGPWA) has been announced by MDeC in March 2014. MOSTI portal was rated five (5) stars in the Malaysia Government Portals and Websites Assessment (MGPWA) 2013 for the third times since year 2010. MOSTI Portal was also ranked fourteen (14) among 24 ministries. MOSTI portal sharing position together with five (5) other Ministries.*
- b. MOSTI Portal also won third place in the Malay version website competition in conjunction with the National Language Month** MOSTI 2014.
- c. *MOSTI is using Augmented Reality and Kinect (3D depth sensor) technology used to enhance MOSTI's services delivery to the public. There is an area called "MOSTI Interactive Wall" at the lobby of block C5, MOSTI and the mobile application that could be downloaded via Google Play and Appstore called "MOSTI Mobile" which provides information on funds/grants, eServices, key performance index (KPI), news, departments/agencies, level of customer satisfaction and 3D interactive games.*

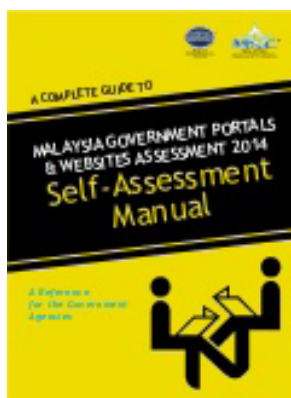
**Bilangan Insiden ICT antara 2008 dan 2014**



**Number of ICT Incident between 2008 and 2014**



- d. MOSTI telah dipersijilkan dengan MS ISO/IEC 27001:2007 *Information Security Management System* (ISMS) untuk tempoh 8 Februari 2013 – 7 Februari 2016. Skop yang telah dipersijilkan adalah “Sistem Pengurusan Keselamatan Maklumat (ISMS) bagi Pengurusan, Penyelenggaraan dan Pengoperasian Sistem Aplikasi di Pusat Data, MOSTI”. Hasil ketara daripada pelaksanaan ISMS adalah penurunan bilangan insiden keselamatan ICT sejak
- e. MOSTI dengan kerjasama MAMPU telah melaksanakan Pusat Data Sektor Awam 2 (GDC2) ke atas 22 aplikasi kritikal di Pusat Data MOSTI pada pertengahan tahun 2013. Lokasi Pusat Pemulihan Bencana (DRC) adalah di Petaling Jaya, Selangor. MOSTI dengan kerjasama MAMPU telah berjaya melaksanakan aktiviti Pengujian Pemulihan Bencana di Government Data Centre 2 pada bulan Disember tahun 2014 yang melibatkan Bahagian Teknologi Maklumat, Bahagian Pusat Maklumat Sains dan Teknologi Malaysia (MASTIC) dan Bahagian Direktorat Oseanografi Kebangsaan (NOD).
- d. *MOSTI received the certification of MS ISO/IEC 27001:2007 Information Security Management System (ISMS) the period of 8 February 2013 – 7 February 2016. The scope covered for the certification is “Information Security Management System for Management, Maintenance and Operational of Application System in MOSTI Data Center”. The most significant impact achieved by implementing ISMS is the reduction of information security incident for the past 2 years of its implementation.*
- e. *MOSTI in collaboration with MAMPU successfully implemented Disaster Recovery Centre in Government Data Center 2 (GDC2). 22 critical applications system involved in this initiatives and successfully setup by mid 2013. The location of the DRC is in Petaling Jaya, Selangor. Disaster Recovery Test was successfully carried out by MOSTI with the assistance of MAMPU on 2nd December 2014. Other division involved in the test is Information Technology Division (BPTM), Malaysian Science and Technology Information Centre (MASTIC) and National Oceanography Directorate (NOD).*



# BAHAGIAN PEMBANGUNAN DEVELOPMENT DIVISION

## Prestasi Perbelanjaan Pembangunan Sehingga 31 Disember 2014

MOSTI telah diluluskan peruntukan pembangunan bagi tahun 2014 sebanyak RM360,766,010.00. Pencapaian perbelanjaan sehingga 31 Disember 2014 adalah sebanyak RM338,074,839.74 (93.7%).

### Pencapaian

MOSTI telah menerima dua anugerah di dalam Majlis Anugerah Ikon Pengurusan Projek 2014 yang dianjurkan oleh Unit Penyelarasan Ekonomi, Jabatan Perdana Menteri pada 18 Februari 2015 iaitu di dalam kategori berikut:

- i. Tempat Pertama Anugerah Best Practices Penilaian Inspektorat (Kategori Projek Bukan Fizikal).
- ii. Tempat Kedua Anugerah Lawatan Turun Padang Terbaik.

## Prestasi Fizikal Pelaksanaan Projek/Program Pembangunan

Daripada peruntukan tersebut di atas, sebanyak 63 projek/program telah diluluskan untuk dilaksanakan pada tahun 2014. Status pelaksanaan projek/program adalah seperti berikut:-

**Jadual 1: Status pelaksanaan projek / program**

STATUS	BILANGAN
Dahului Jadual	15
Ikut Jadual	39
Lewat Jadual	1
Siap Sepenuhnya	8
Jumlah	63

## Development Expenditure Performance Until 31st December 2014

From RM360,766,010.00 approved allocation, MOSTI has spent RM338,074,839.74 (93.7%).

### Achievements

MOSTI has received two awards in Project Management Icon Awards 2014 organised by the Economic Coordination Unit, Prime Minister's Office on 18th February 2015 as follows:

- i. First Place for Best Practices Assessment Inspectorate (Project Category for Non-Physical)
- ii. Second Place Award for Best Field Monitoring Trip

## Implementation Development Project/Programme Performance

A total of 63 projects/programmes have been approved for implementation in 2014. The status of implementation of project/programmes are shown in Table 1.

**Table 1: The status of implementation of project/program.**

STATUS	QUANTITY
Ahead of Schedule	15
On Schedule	39
Behind Schedule	1
Completed	8
Total	63



## Aktiviti Pemantauan Projek/Program

Sepanjang tahun 2014, MOSTI juga giat menjalankan beberapa aktiviti pemantauan projek/program pembangunan seperti berikut:-

AKTIVITI PEMANTAUAN	BILANGAN
Lawatan Projek oleh YB Menteri	25
Lawatan Projek oleh Ketua Setiausaha	42
Mesyuarat Jawatankuasa Pembangunan Kementerian (JTPK)	12
Lawatan /Mesyuarat tapak projek/ program oleh Bahagian Pembangunan	37
<b>Jumlah</b>	<b>104</b>

Berikut adalah gambar – gambar sekitar lawatan pemantauan projek/program pembangunan sepanjang tahun 2014.

## Project/Programmes Monitoring

*In year 2014, MOSTI actively monitors/monitored the activities of development projects/programs. The quantity of monitoring activities done for the year 2014 are shown in Table 2.*

**Table 2: The quantity of monitoring done for the year 2014.**

MONITORING ACTIVITIES	QUANTITY
Site Visit by YB Minister	25
Site Visit by Secretary General	42
Ministry of Development Action Committee Meetings (JTPK)	12
Site Visit/Project Meeting by Development Division	37
<b>Total</b>	<b>104</b>

*The pictures shown below were taken during the monitoring activities for development project/programme throughout the year 2014.*

**Gambar 1:** Lawatan ke projek pembinaan bangunan tambahan Jabatan Kimia Malaysia, Cawangan Bintulu oleh YBhg. Dato' Dr. Rosli Bin Mohamed pada 4 Mei 2014 di Bintulu, Sarawak.

*Figure 1: A visit to the project construction of additional buildings for Department of Chemistry Malaysia, Bintulu Branch by YBhg. Dato' Dr. Rosli Bin Mohamed on 4th May 2014 at Bintulu, Sarawak.*



**Gambar 2:** Lawatan Kerja YBhg. Dato' Sri Dr. Noorul Ainur Mohd Nur, Ketua Setiausaha MOSTI ke Agensi Angkasa Negara (ANGKASA) di Sungai Lang, Banting pada 14th July 2014.

*Figure 2: Working Visit of YBhg. Dato' Sri Dr. Noorul Ainur Mohd Nur, Secretary General of MOSTI to the National Space Agency (ANGKASA) in Sungai Lang, Banting on 14th July 2014.*





Warta

Bidang Keberhasilan  
Utama Negara

# LAPORAN UNIT

- ◆ Unit Komunikasi Korporat
- ◆ Unit Perundangan
- ◆ Unit KPI

## UNIT REPORT

- ◆ *Corporate Communication Unit*
- ◆ *Legal Unit*
- ◆ *KPI Unit*

# UNIT KOMUNIKASI KORPORAT

# CORPORATE COMMUNICATIONS UNIT



Sidang Akhbar NICE Press Conference

BERITA ONLINE BERNAMA.COM  
TARIKH: 31 NOVEMBER 2014 (SABTU)

**Moti Capai Sasaran Pengkomersialan Projek R&D Tahun Ini**

KUALA LUMPUR, 31 Nov (Bernama) – Kementerian Sains, Teknologi dan Inovasi (MOSTI) telah mencapai sasaran pengkomersialan projek penyelidikan dan pembangunan (R&D) sebanyak 87 projek tahun ini dengan perolehan nilai lebih 200 juta ringgit.

**Menteri Sains, Teknologi dan Inovasi Eka Ekus Mulyadin** berkata, ia merupakan kejayaan kerana pengkomersialan projek R&D merupakan proses yang sangat kompleks dan memerlukan masa yang panjang. Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

MOSTI akan berusaha untuk meningkatkan jumlah projek R&D yang diperkenalkan ke pasaran dan meningkatkan nilai projek R&D yang diperkenalkan ke pasaran.

Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

MOSTI akan berusaha untuk meningkatkan jumlah projek R&D yang diperkenalkan ke pasaran dan meningkatkan nilai projek R&D yang diperkenalkan ke pasaran.

KERATAN AKHBAR  
ASTRO AWANI (http://www.astroawani.com)  
TARIKH: 3 NOVEMBER 2014 (AHAD)

**Industri dan Penyelidik Bina Ekosistem Inovasi Mampu - Mulyadin**

KUALA LUMPUR, 3 Nov (Astro Awani) – Menteri Sains, Teknologi dan Inovasi (MOSTI) berkata, industri dan penyelidik bina ekosistem inovasi mampu. Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

MOSTI akan berusaha untuk meningkatkan jumlah projek R&D yang diperkenalkan ke pasaran dan meningkatkan nilai projek R&D yang diperkenalkan ke pasaran.

BERITA ONLINE BERNAMA.COM  
TARIKH: 01 NOVEMBER 2014 (SABTU)

**Industri Dan Penyelidik Bina Ekosistem Inovasi Mampu - Mulyadin**

KUALA LUMPUR, 1 Nov (Bernama) – Menteri Sains, Teknologi dan Inovasi (MOSTI) berkata, industri dan penyelidik bina ekosistem inovasi mampu. Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

MOSTI akan berusaha untuk meningkatkan jumlah projek R&D yang diperkenalkan ke pasaran dan meningkatkan nilai projek R&D yang diperkenalkan ke pasaran.

KERATAN AKHBAR  
MY NEWS 24 (http://www.mynews24.com)  
TARIKH: 2 NOVEMBER 2014 (JUMAAT)

**Industri Dan Penyelidik Bina Ekosistem Inovasi Mampu**

KUALA LUMPUR, 2 Nov (MyNews24) – Menteri Sains, Teknologi dan Inovasi (MOSTI) berkata, industri dan penyelidik bina ekosistem inovasi mampu. Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

Beliau berkata, ia menunjukkan bahawa projek R&D yang dijalankan oleh universiti dan pusat penyelidikan di negara ini kini semakin matang dan bersedia untuk diperkenalkan ke pasaran.

MOSTI akan berusaha untuk meningkatkan jumlah projek R&D yang diperkenalkan ke pasaran dan meningkatkan nilai projek R&D yang diperkenalkan ke pasaran.





Promosi & publisiti NICE 2014  
Publicity and promotion





YBTM ke BERNAMA  
8 April 2014

YBTM to BERNAMA  
8 April 2014



Tahun Pengkormersilan MOSTI  
(MYC) 2014 di BERNAMA /  
MOSTI Commercialisation Year  
(MYC) 2014 at BERNAMA



KERATAN AKHBAR  
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TARIKH : 24 JANUARI 2014 (JUMAAT)

**Mosti To Issue Special Number Plates To Promote Commercialisation Year**

SHAH ALAM, Jan 23 (Bernama) – The Ministry of Science, Technology and Innovation (MOSTI) will issue special motor vehicle number plates to promote Mosti Commercialisation Year (MYC) 2014.

Its minister, Datuk Dr Ewon Ebin, said a total of 370 units of the special number plates would be issued once the Cabinet's approval was obtained.

"The numbers on each special plate will be preceded by "MYC". It also uses a global positioning system and light refractor material. However, Mosti is still waiting for approval from the Cabinet to issue this special plate.

"Once approved, vehicle owners can start buying the special number plates at the Road Transport Department (JPJ) at a stipulated price," he told reporters after launching the MYC 2014 at SIRIM headquarters here Thursday.

He said the number plates would only be issued this year as Mosti had no plan to continue issuing the plates after MYC 2014.

Meanwhile, Ewin said Mosti had set a target to commercialise at least 60 of its research and development (R&D) products each year.

With the target, he said the ministry was confident that over 360 innovative local products from various industries would be produced by 2020.

"Prior to this, we only aimed at commercialising 20 products each year, but by declaring the year 2014 as the Mosti Commercialisation Year, we hope the number will increase to 60," he said.

– BERNAMA.



Tahun Pengkormersilan MOSTI  
(MYC) 2014 di TV AlHijrah  
MOSTI Commercialisation Year  
(MYC) 2014 at TV AlHijrah



# MOSTI COMMERCIALISATION YEAR 2014

STI for Wealth Creation

KERATAN AKHBAR  
ASTRO AWANI.COM\_ENGLISH  
TARIKH : 24 JANUARI 2014 (JUMAAT)



### Special 1MCY plate number for Commercialisation Year



**SILAH ALAM:** The Ministry of science, Technology and Innovation (MOSTI) minister Datuk Dr Ewon Ebin (center) holds the vehicle plate number with special license - 1MCY2014.

His minister, Datuk Dr Ewon Ebin, said a total of 370 units of the special number plates would be issued once the Cabinet's approval was obtained.

"The numbers on each special plate will be preceded by '1MCY'. It also uses a global positioning system and light refractor

Ministry of Science, Technology and Innovation (MOSTI) minister Datuk Dr Ewon Ebin (center) holds the vehicle plate number with special license - 1MCY2014.

material. However, MOSTI is still waiting for approval from the Cabinet to issue this special plate.

"Once approved, vehicle owners can start buying the special number plates at the Road Transport Department (JPJ) at a stipulated price," he told reporters after launching the MCY 2014 at Sim headquarters here Thursday.

He said the number plates would only be issued this year as Mosti had no plan to continue issuing the plates after MCY 2014.

Meanwhile, Ewon said Mosti had set a target to commercialise at least 60 of its research and development (R&D) products each year.

With the target, he said the ministry was confident that over 360 innovative local products from various industries would be produced by 2020.

"Prior to this, we only aimed at commercialising 20 products each year, but by declaring the year 2014 as the Mosti Commercialisation Year, we hope the number will increase to 60," he said.

Story first published on: January 24, 2014 07:30 (MYT)



STRATEGI PENGKOMERSIALAN INOVASI

KPWKM sedia hantar pegawai bantu psngn di Sweden



Tahun Pengkormersilan MOSTI (MYC) 2014 di ASTRO Awani MOSTI Commercialisation Year (MYC) 2014 at ASTRO Awani



STRATEGI PENGKOMERSIALAN INOVASI

Argentina hadkan aktiviti beli-belah dlm talian



*MOSTI Commercialisation Year (MYC) 2014 at MHI TV3*



Tahun Pengkormersilan MOSTI (MYC) 2014 di SP1M & Hello on 2 di RTM 1 & 2  
 MOSTI Commercialisation Year (MYC) 2014 SP1M & Hello on 2 RTM 1 & 2



# UNIT PERUNDANGAN

## LEGAL UNIT



### Pencapaian Tahun 2014

Statistik Unit Perundangan bagi tahun 2014 berdasarkan kepada fungsi-fungsi Unit adalah seperti berikut:

Fungsi	Kuantiti
Pandangan Undang-Undang (bertulis)	111
Pandangan Undang-Undang (lisan)	277
Semakan Perjanjian / Memorandum Persefahaman	614
Gubalan Undang-Undang	40
Tindakan Guaman	29

### Aktiviti Tahun 2014

Unit Perundangan telah mengadakan Bengkel Pengukuhan Dan Penambahbaikan Kecekapan Serta Pemahaman Arahan Peguam Negara Dalam Proses Kerja Warga Unit Perundangan MOSTI di Hotel Georgetown City, Pulau Pinang pada 6 hingga 8 November 2014.

Objektif Bengkel diadakan bertujuan untuk meneliti arahan-arahan terkini Jabatan Peguam Negara serta memahami dengan lebih terperinci kaedah-kaedah penterjemahan dan semakan undang-undang bagi tujuan untuk menambah baik dan memantapkan perkhidmatan Unit Perundangan MOSTI dalam melaksanakan tugas.

Bengkel tersebut telah dihadiri oleh dua orang Pegawai Undang-Undang, tiga orang Pegawai Kumpulan Pelaksana dan dua orang Pegawai Sambilan Harian (PSH) dari Unit Perundangan MOSTI.

#### **Achievement For The Year 2014**

*Statistics of the Legal Unit for the year 2014 according to the functions are as follows:*



<b>Function</b>	<b>Quantity</b>
<b>Legal Opinion (written)</b>	<b>111</b>
<b>Legal Opinion (oral)</b>	<b>277</b>
<b>Vetting of Agreement / Memorandum of Understanding</b>	<b>614</b>
<b>Drafting of Laws</b>	<b>40</b>
<b>Civil Litigation</b>	<b>29</b>

#### **Activity For The Year 2014**

*A workshop to strengthen and improve efficiency and understanding the Attorney General's Circular in MOSTI Legal Unit's work process was held at The Georgetown City Hotel, Penang from 6 to 8 November 2014. The objective of this Workshop was to study and understand the current instructions of the Attorney General's Chambers and to scrutinize the methods in law translation and law revision in order to improve and strengthen MOSTI Legal Unit's service in performing its functions.*

*The Workshop was attended by two Legal Officers, three staffs and two temporary staffs from the MOSTI Legal Unit.*



# UNIT PETUNJUK PRESTASI UTAMA (KPI)

## KPI UNIT



### Pencapaian

Skor pencapaian **KPI YB Menteri adalah 133%**

### Menteri

Menyediakan maklumat-maklumat berikut:

- Pencapaian 20 KPI (2014) dan pengesahan 27 KPI (2015) menerusi Sesi Kajian Akhir Tahun PM-Menteri 2014 (17 Februari); dan
- Pencapaian pertengahan tahun KPI 2014 dan perubahan sasaran tahunan bagi Sesi Kajian Pertengahan Tahun PM-Menteri 2014 (4 September).
- Mengemukakan 11 laporan pencapaian bulanan KPI (Februari hingga Disember 2014) kepada Unit Pengurusan Prestasi dan Pelaksanaan (PEMANDU), Jabatan Perdana Menteri (JPM) dan membentangkan semua laporan dalam Mesyuarat Pengurusan/Pasca Kabinet;

### Achievements

The **KPI achievements of the Hon. Minister of MOSTI was 133%**

*Honourable Minister of MOSTI*

*Following information was provided:*

- *20 KPI achievements (2014) and verification of 27 KPI (2015) through 2014. PM-Minsiter Session End of Year Review (17 February); and*
- *Mid-term 2014 KPI achievements and changes of annual targets for the 2014 PM-Minister Mid Year Review (4 September)*
- *Submitted 11 reports of KPI monthly performance (February to December 2014) to the Performance Management and Delivery Unit (PEMANDU), Prime Minister's Office) and presented all reports at the Management Meeting/Post-Cabinet;*





Sesi Change Acceleration Process (CAP) pada 20 hingga 21 Januari 2014, Di Thistle Port Dickson, Negeri Sembilan

- Mengadakan enam sesi mesyuarat/Brainstorming/ taklimat (14 Oktober, 23 Oktober, 29 Oktober, 12 November, 24 November dan 27 November) melibatkan pengurusan atasan MOSTI dan semua pegawai Focal Point KPI bagi membentuk 35 KPI untuk tahun 2015 dan dikemukakan kepada PEMANDU; dan
- Menyelaras satu Sesi Klinik bersama PEMANDU (1 Disember) dan Sesi Pertemuan YB Senator Dato' Sri Idris Jala (DSIJ), Ketua Pegawai Eksekutif (CEO) PEMANDU bersama KSU (DSIJ-KSU) yang diwakili TKSU(D) (16 Disember) bertujuan memuktamadkan KPI MOSTI 2014. 35 KPI telah disenarai pendek sebagai KPI YB Menteri.
- *Held six meetings/brainstorming sessions/briefings (14 October, 23 October, 29 October, 12 November, 24 November and 27 November 2014) involving KPIs of MOSTI's top management and all employees of Focal Point to generate 35 KPI for 2015 and presented them to PEMANDU; and*
- *Coordinated one Clinic Session with PEMANDU (1 December) and Meeting Session with Hon. Senator Dato' Sri Idris Jala (DSIJ), Chief Executive Officer (CEO) DRIVER with KSU (DSIJ-KSU), which was represented by Deputy Secretary General (P) (16 December), was aimed to finalise 2014 MOSTI's KPI. 35 KPIs were shortlisted as KPIs*

#### **Ketua Setiausaha (KSU)**

Menghadiri lima sesi taklimat/ mesyuarat (5 Februari, 17 Mac, 24 Jun, 18 November dan 1 Disember) oleh Jabatan Perkhidmatan Awam (JPA) bagi memuktamadkan/ memantau urusan 31 KPI YBhg. Dato' Sri Dr. KSU (Merangkumi Dimensi Daya Saing Negara, Dimensi Kecekapan dan Keberkesanan Penyampaian Perkhidmatan Awam, Dimensi Tadbir Urus dan Akauntabiliti dan Dimensi Transformasi Perkhidmatan Awam.

“

**31 KPI YBhg. Dato' Sri Dr. KSU Merangkumi Dimensi Daya Saing Negara, Dimensi Kecekapan dan Keberkesanan Penyampaian Perkhidmatan Awam, Dimensi Tadbir Urus dan Akauntabiliti dan Dimensi Transformasi Perkhidmatan Awam.**”

#### **Secretary General (SG)**

*Attended five briefing sessions/meetings (5 February, 17 March, 24 June, 18 November and 1 December) by the Public Service Department (PSD) to finalise/monitor the affairs of 31 KPI of the Hon. SG (includes National Competitiveness Dimensions, Efficiency Dimensions and Effectiveness of Public Services Delivery, Governance and Accountability Dimensions and Public Service Transformation Dimensions).*

“

**31 KPI of the Hon. SG includes National Competitiveness Dimensions, Efficiency Dimensions and Effectiveness of Public Services Delivery, Governance and Accountability Dimensions and Public Service Transformation Dimensions.**”



Sesi Brainstorming Penetapan KPI MOSTI 2015 pada 23 Oktober 2014, Di Hotel Bangi-Putrajaya, Bandar Baru Bangi, Selangor  
 MOSTI Fixed KPI 2015 brainstorming session on 23 October 2014 at Bangi-Putrajaya Hotel, Bandar Baru Bangi, Selangor

#### Program Transformasi Penyampaian Perkhidmatan Awam (PSDTP)

- Tiga projek berimpak tinggi kepada rakyat dikenal pasti:
  - Projek 1 – *Research, Development & Commercialisation (R,D&C) Transformation*;
  - Projek 2 - *MySTI Portal*; dan
  - Projek 3 - *Tele-Primary Care – Oral Health Clinical Information System (TPC-OHCIS)* oleh MIMOS untuk Kementerian Kesihatan.

#### Public Service Delivery Transformation Programme (PSDTP)

- *Three high impact projects were identified to the people:*
  - *Project 1 - Research, Development & Commercialisation (R,D & C) Transformation*;
  - *Project 2 - MySTI Portal*; and
  - *Project 3 - Tele-Primary Care – Oral Health Clinical Information System (TPC-OHCIS) by MIMOS for the Ministry of Health.*

### 3 projek berimpak tinggi kepada rakyat dikenal pasti

#### *3 high impact projects identified to the people*

<b>Project 1</b>	<b>Research, Development &amp; Commercialisation (R,D&amp;C) Transformation</b>
<b>Project 2</b>	<b>MySTI Portal</b>
<b>Project 3</b>	<b>Tele-Primary Care – Oral Health Clinical Information System (TPC-OHCIS) by MIMOs for Ministry of Health</b>

- Satu Sesi Change Acceleration Process (CAP) pada 20 hingga 21 Januari 2014 melibatkan 35 ahli projek PSDTP MOSTI bagi meningkatkan soft skills dalam menangani perubahan dan mempengaruhi stakeholders menerima cadangan transformasi projek-projek berimpak tinggi kepada rakyat;
- Dua sesi pembentangan oleh semua ahli Projek kepada pihak pengurusan MOSTI;
- Cadangan dua projek dibentangkan dalam Mesyuarat Jawatankuasa Pemandu PSDTP Bil. 3/2014 pada 18 Jun 2014 yang dipengerusikan bersama oleh CEO PEMANDU dan Ketua Setiausaha Negara:
  - TPC-OHCIS; dan
  - R,D&C Transformation.
- Mesyuarat meluluskan projek TPC-OHCIS;
- Satu Kick Off Meeting PSDTP Project TPC-OHCIS pada 4 Julai 2014;
- Satu Mesyuarat Governance Structure for TPC-OHCIS Project pada 13 Ogos 2014; dan
- Projek TPC-OHCIS bermula dengan rasmi pada 1 Disember 2014 dengan kelulusan Dana RM30.9 juta.

#### **Pemeriksaan Ekonomi Bumiputera (PEB)**

- Menghadiri taklimat/ mesyuarat (7 Januari, 13 Januari, 16 April, 4 Jun, 18 Jun, 21 Ogos, 19 September dan 5 November) berhubung peranan dan fungsi PEB; dan
- Mengadakan sesi perbincangan/mesyuarat (27 Januari, 20 Mac, 24 November dan 27 November) bagi meneliti cadangan KPI PEB dalam program semasa yang dilaksanakan oleh agensi-agensinya di bawah MOSTI.

**Projek TPC-OHCIS  
bermula dengan rasmi pada  
1 Disember 2014 dengan  
kelulusan Dana  
RM30.9 juta**

- *Session one of the Change Acceleration Process (CAP) was held on 20 to 21 January 2014 included 35 project members of PSDTP MOSTI to improve soft skills in dealing with changing and influencing stakeholders to accept proposals to transform the high-impact projects for the people;*
- *Two presentation sessions by all members of the project to the MOSTI management;*
- *Two project proposals were presented in the PSDTP Steering Committee Meeting No. 3/2014 on 18 June 2014, which was jointly chaired by the CEO PEMANDU and Chief Secretary:*
  - *TPC-OHCIS; and*
  - *R,D&C Transformation.*
- *The meeting approved the TPC-OHCIS project;*
- *One Kick-Off Meeting of PSDTP Project TPC-OHCIS on 4 July 2014;*
- *One meeting of Governance Structure for TPC-OHCIS Project on 13 August 2014; and*
- *TPC-OHCIS project officially commenced on 1 December 2014 with the approval of RM30.9 million fund.*

#### **Bumiputera Economic Empowerment (Pemeriksaan Ekonomi Bumiputera)**

- *Attended briefings/meetings (7 January, 13 January, 16 April, 4 June, 18 June, 21 August, 19 September and 5 November 2014) on the role and functions of PEB; and*
- *Held discussion sessions/meetings (27 January, 20 March, 24 November and 27 November) to examine the proposal on PEB KPI in the current programme implemented by the agencies under MOSTI.*

**TPC-OHCIS project officially  
commenced on 1 December 2014  
with the approval of  
RM30.9 million fund**



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# LAPORAN KLUSTER **BIOTEK**

- ◆ Bahagian BIOTEK
- ◆ Malaysian Biotechnology Corporation (Biotechcorp)
- ◆ National Institute Of Biotechnology Malaysia (NIBM)
- ◆ Inno Bio Ventures
- ◆ Technology Park Malaysia (TPM)

## CLUSTER REPORT **BIOTECH**

- ◆ *BIOTECH Division*
- ◆ *Malaysian Biotechnology Corporation (Biotechcorp)*
- ◆ *National Institute Of Biotechnology Malaysia (NIBM)*
- ◆ *Inno Bio Ventures*
- ◆ *Technology Park Malaysia (TPM)*

# BAHAGIAN BIOTEKNOLOGI KEBANGSAAN

## NATIONAL BIOTECHNOLOGY DIVISION

Di peringkat Kementerian, BIOTEK telah mengambil pelbagai usaha untuk memastikan pelaksanaan inisiatif-inisiatif bidang bioteknologi selaras dengan sasaran yang digariskan dalam DBN. Bagi 2014, kami berada dalam Fasa 2 Dasar Bioteknologi Negara (DBN) iaitu dari fasa Sains kepada Pasaran (2011-2015).

Antara aktiviti utama tahun 2014 adalah seperti berikut:

- i. Transformasi tiga Institut Penyelidikan Bioteknologi sebagai Syarikat Berhad Menurut Jaminan (CLG);
- ii. Mengarus perdana Majlis Bioetika Negara agar berperanan mencapai agenda DBN;
- iii. Memastikan kandungan program promosi yang dilaksanakan seperti BioMalaysia 2014, BioBorneo 2014 dan program promosi diperingkat komuniti memenuhi salah satu daripada sembilan teras DBN;
- iv. Laporan pengurusan, penilaian dan pemantauan projek penyelidikan bioteknologi; dan
- v. Kerjasama dan jaringan antarabangsa.

### I. Transformasi Tiga Institut Penyelidikan Bioteknologi di bawah National Institutes of Biotechnology Malaysia (NIBM);

Bagi memastikan agenda di bawah DBN dapat bergerak selaras dengan perkembangan kemajuan penyelidikan bioteknologi di peringkat nasional dan global, tiga buah institut iaitu Institut Agro-Bioteknologi Malaysia (ABI), Institut Farmaseutikal dan Nutraceutikal Malaysia (IPharm) dan Institut Genom Malaysia (MGI) telah digabungkan sebagai CLG yang tidak bermotifkan keuntungan di bawah NIBM. Di bawah transformasi ini, seramai 54 kakitangan Kerajaan telah memilih opsyen untuk bersama dengan NIBM. Perjanjian korporat telah ditandatangani pada 21 Mei 2014.

*At the ministerial level, BIOTEK has taken various steps to ensure the implementation of biotechnology initiatives are in line with the targets outlined in the National Biotechnology Policy (NBP). As for 2014, we were in Phase 2 of the NBP i.e. Science to Business (2011-2015).*

*Main activities of 2014 are as follows:*

- i. Transformation of three (3) Biotechnology Research Institutes as Company Limited by Guarantee (CLG);*
- ii. Mainstreaming the National Bioethics Council to achieve the agenda of NBP;*
- iii. Ensuring the content of promotional programmes that were carried out such as BioMalaysia 2014, BioBorneo 2014 and other promotional programmes at community level fulfills one out the nine thrusts of NBP;*
- iv. Reporting of management, evaluation and monitoring of biotechnology research projects; and*
- v. International cooperation and networking.*

### **I. Transformation of Three (3) Biotechnology Research Institutes under National Institutes of Biotechnology Malaysia (NIBM)**

*In ensuring the agenda under NBP is moving in accordance with the advancement of Biotechnology in research and development both nationally and globally, three institutes namely the Malaysia Agro-Biotechnology Institute (ABI), Malaysia Institute of Pharmaceuticals and Nutraceuticals (IPharm) and Malaysia Genome Institute (MGI) were combined as a CLG, not for profit under NIBM. Under this transformation, 54 government staff chose the option of joining NIBM. The Corporate Agreement was signed in a signing ceremony in MOSTI on 21 May 2014.*



## II. Mengarusperdana Majlis Bioetika Negara

Majlis Bioetika Negara yang ditubuhkan pada 9 Julai 2010 berperanan sebagai panel penasihat yang membincangkan dan menyelesaikan isu-isu bioetika yang boleh membawa impak ke atas persekitaran, sosial, kesihatan, budaya, undang-undang dan agama serta masyarakat Malaysia secara umumnya. Pada tahun 2014, Malaysia telah menerima pengiktirafan diperingkat antarabangsa di mana Malaysia telah dilantik menjadi ahli *International Bioethics Committee* (IBC) bagi tempoh 4 tahun (2014-2017). Malaysia telah dijemput untuk menghadiri Persidangan *International Bioethics Committee (IBC) and Joint Session of the IBC and the Intergovernmental Bioethics Committee (IGBC)* di Ibu Pejabat UNESCO, Paris yang berlangsung dari 9 - 10 September 2014 dan dihadiri oleh Pengerusi dan Ketua Sekretariat MBN. Bagi tahun 2014, MBN telah meneruskan usaha meningkatkan kepakaran dan pendedahan kepada semua ahli dengan mengadakan bengkel latihan dari 25 - 28 November 2014 di Everly Hotel, Putrajaya yang disokong oleh *Assisting Bioethics Committee (ABC) UNESCO*.

## II. *Mainstreaming the National Bioethics Council to Achieve the Agenda of NBP*

*The National Bioethics Council (NBC) was established on 9 July 2010 to play a role as an advisory panel that discusses and resolves bioethical issues that may have an impact on the environment, social, health, culture, laws and religions and Malaysian society in general. In 2014, Malaysia received recognition at the international level whereby Malaysia was appointed as a member of the International Bioethics Committee (IBC) for a term of 4 years (2014-2017). Malaysia was invited to attend the Conference of the International Bioethics Committee (IBC) and Joint Session of the IBC and the Intergovernmental Bioethics Committee (IGBC) at UNESCO Headquarters, Paris which was held on 9-10 September 2014, attended by the Chairman and Head of Secretary of MBN. For year 2014, MBN continued to upgrade and provide exposure to its members by conducting a training workshop from 25-28 November 2014 at Everly Hotel, Putrajaya supported by the Assisting Bioethics Committee (ABC) UNESCO.*



Bengkel  
Latihan Bioetika  
bersama  
Assisting  
Bioethics  
Committee  
(ABC) UNESCO

*Training workshop  
at Everly Hotel,  
Putrajaya  
supported by the  
Assisting Bioethics  
Committee (ABC)  
UNESCO*

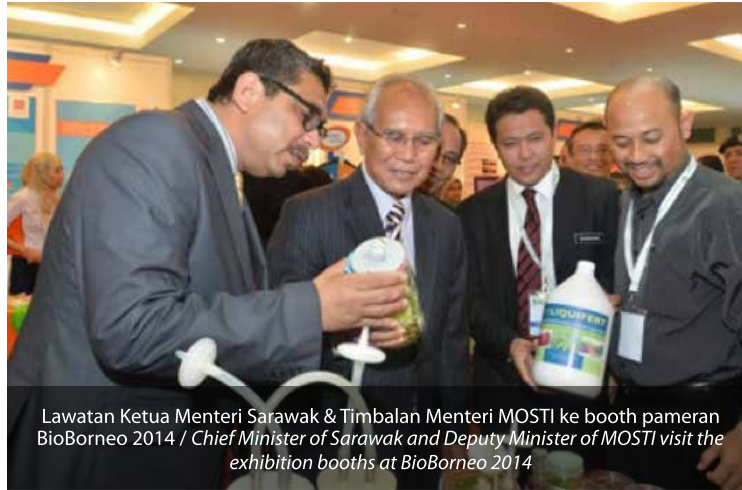
### III. Program Promosi Bioteknologi

Bagi tahun 2014, dua persidangan dan pameran telah dianjurkan. BioBorneo 2014 yang bertemakan "Sustaining the Bioeconomy Community" dan dirasmikan oleh Ketua Menteri Sarawak telah diadakan dari 5-7 Mei 2014 di Dewan Tunku Abdul Rahman Putra, Universiti Malaysia Sarawak (UNIMAS). BioMalaysia 2014 pula telah diadakan pada 19 dan 20 September 2014 di Kompleks

Penyelidikan dan Pengurusan Inovasi, Universiti Malaya Kuala Lumpur dengan tema "Partnership for Innovation, Investment & Growth for the Bio-based Industry" dan dirasmikan oleh YAB Perdana Menteri.

### IV. Pengurusan Penilaian Projek Penyelidikan Bioteknologi.

BIOTEK juga diberi peranan mengurus penilaian projek-projek penyelidikan berkaitan bioteknologi. Bagi tahun 2014, sebanyak 280 permohonan projek telah diterima untuk dibuat penilaian. Maklumat terperinci bilangan projek dan peruntukan yang diluluskan bagi tahun 2014 adalah seperti di **Carta 1**.



Lawatan Ketua Menteri Sarawak & Timbalan Menteri MOSTI ke booth pameran BioBorneo 2014 / Chief Minister of Sarawak and Deputy Minister of MOSTI visit the exhibition booths at BioBorneo 2014

### III. Biotechnology Promotion Programmes

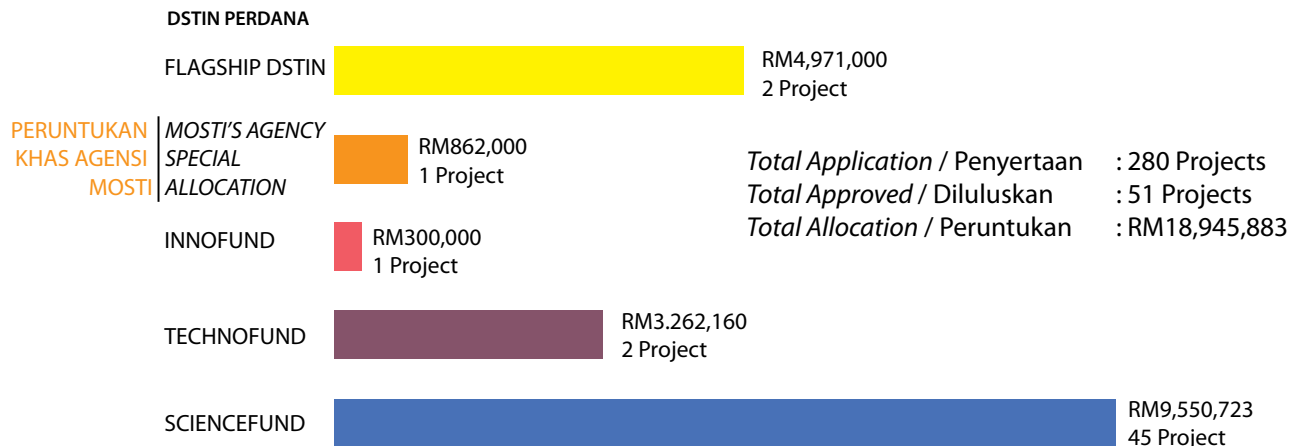
For year 2014, 2 main conferences and exhibitions were held. BioBorneo 2014 with the theme "Sustaining the Bioeconomy Community" and officiated by the Chief Minister of Sarawak, held from 5-7 May 2014 at the Dewan Tunku Abdul Rahman Putra, Universiti Malaysia Sarawak (UNIMAS). BioMalaysia 2014 was held on 19 and 20 September 2014 at the Research and Innovation

Management Complex, University Malaya Kuala Lumpur with the theme "Partnership for Innovation, Investment & Growth for the Bio-based Industry" and officiated by YAB Prime Minister.

### IV. Management, Evaluation and Monitoring of Biotechnology Research Projects

BIOTEK is also given the role to manage the evaluation of research projects relevant to Biotechnology. In 2014, a total of 280 applications were received for evaluation. The details of number of projects and allocation approved for year 2014 are as in Figure 1.

Carta 1: Bilangan projek dan peruntukan yang diluluskan mengikut geran bagi tahun 2014  
Figure 1: Number of projects and allocation approved according to types of grants are as follows:

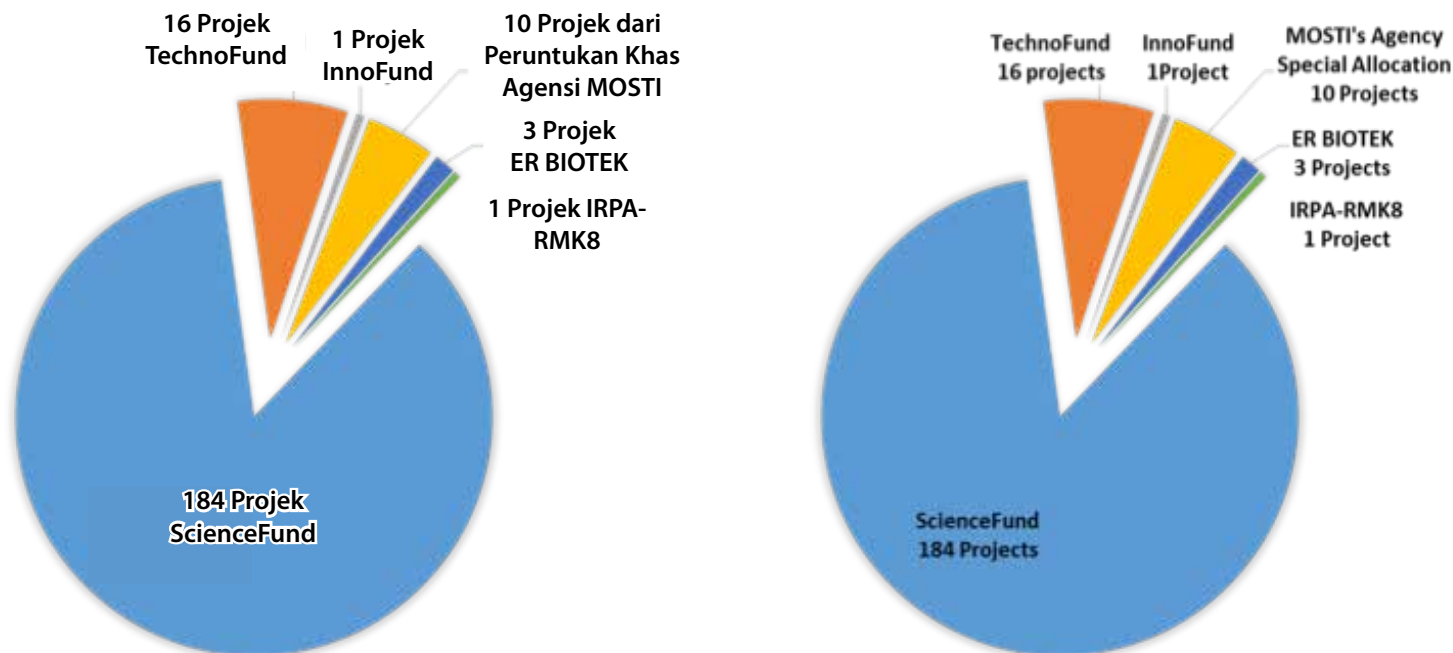




Disamping itu, BIOTEK diberi tanggungjawab untuk memantau projek-projek dalam proses pelaksanaan (on-going). Bagi tahun 2014, sebanyak 215 projek penyelidikan telah dipantau oleh BIOTEK. Pecahan terperinci adalah seperti di **Carta 2**

*In addition, BIOTEK is also given the responsibility to monitor on-going research projects. In 2014, a total of 215 research projects were monitored by BIOTEK. The detailed breakdown is as in **Figure 2***

**Carta 2: Pecahan terperinci bilangan projek yang dipantau**  
*Figure 2: Breakdown of research projects monitored by BIOTEK.*



## V. Kerjasama dan Jaringan Antarabangsa

Diperingkat antarabangsa, MOSTI melalui BIOTEK adalah ahli governan kepada *International Centre for Genetic Engineering and Biotechnology (ICGEB)*. Di antara kemudahan yang terima sebagai ahli ICGEB adalah geran penyelidik (Collaborative Research Programme (CRP) - ICGEB Research Grants), pembiayaan penyertaan kursus saintifik dan terlibat dalam pembuat dasar ICGEB. Bagi tahun 2014, sebanyak 21 permohonan daripada para penyelidik telah diterima dan diproses dibawah CRP. Pada tahun 2014, BIOTEK juga telah menghadiri Mesyuarat Sesi ke-12, ICGEB – Board of Governors di Trieste, Italy pada 13 dan 14 Mei 2014.

## V. International Cooperation and Networking

*At the international level, MOSTI through BIOTEK is the governance member to the International Centre for Genetic Engineering and Biotechnology (ICGEB). Among the facilities provided to the member states of ICGEB are funding opportunities made available through the Collaborative Research Programme (CRP) - ICGEB Research Grants, funding for participation in scientific courses and involvement in the policy making of ICGEB. In 2014, BIOTEK received 21 applications from fellow researchers to be processed under the CRP grant. Apart from that, BIOTEK had the opportunity to attend the 12th Session of ICGEB – Board of Governors meeting at Trieste, Italy from 13 to 14 May 2014.*

# MALAYSIAN BIOTECHNOLOGY CORPORATION SDN BHD (BIOTECHCORP)



**247** RANGKAIAN SYARIKAT BERSTATUS **BIONEXUS** RM4.6 BILLION

**247** BIONEXUS STATUS COMPANIES **network** RM4.6 BILLION

- Sehingga kini, BiotechCorp telah berjaya membina 247 rangkaian syarikat berstatus BioNexus dengan jumlah pelaburan yang diluluskan iaitu RM4.6 bilion dalam Bioperubatan, AgBiotech dan BioIndustri.
- Selepas September 2014, 19 syarikat baru telah dianugerahkan dengan status BioNexus.
- Jumlah pelaburan yang dilaporkan oleh syarikat-syarikat BioNexus dari bulan Januari hingga September 2014 ialah sebanyak RM332.9 juta, di mana RM195.1 juta telah disumbangkan oleh sektor AgBiotech, RM56.2 juta oleh sektor Bioperubatan, dan RM81.6 juta oleh sektor BioIndustri.
- *To date, BiotechCorp has successfully built a network of 247 BioNexus status companies generating more than RM4.6 billion in approved investments in BioMedical, AgBiotech and BioIndustrial.*
- *Post September 2014, 19 new companies have been successfully awarded the BioNexus Status.*
- *Total investments reported by BioNexus companies from January to September 2014 amounting to RM332.9 million, of which RM195.1 million were contributed by the AgBiotech sector, RM56.2 million by the BioMedical sector, and RM81.6 million by the BioIndustrial sector.*



Perdana Menteri Malaysia, YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak (tiga dari kiri) mengagumi produk BioShopp semasa Persidangan dan Pameran BioMalaysia dan Bioekonomi Asia Pasifik 2014. Beliau diiringi oleh Menteri MOSTI, YB Datuk Dr. Ewon Ebin (empat dari kanan), Pengerusi BiotechCorp, YBhg Prof Emeritus Dato' Sri Dr Zakri Abdul Hamid, (tiga dari kanan), dan Ketua Pegawai Eksekutif BiotechCorp, YBhg Dato' Dr. Mohd Nazlee Kamal (dua dari kanan).

*Prime Minister of Malaysia YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak (third from left) admiring a BioShopp product during the 12th BioMalaysia and Bioeconomy Asia Pacific 2014 Conference and Exhibition. He was accompanied by MOSTI Minister, YB Datuk Dr. Ewon Ebin (fourth from right), Chairman of BiotechCorp, YBhg Prof Emeritus Dato' Sri Dr Zakri Abdul Hamid (third from right), and CEO of BiotechCorp, YBhg Dato' Dr. Mohd Nazlee Kamal (second from right).*

- Dari segi pelaburan, BiotechCorp telah berjaya mencapai keputusan yang memberangsangkan dengan melepasi sasaran Fasa 2 Dasar Bioteknologi Negara (NBP) sebanyak RM9 bilion iaitu dengan pencapaian sejumlah RM19.14 bilion kini.
- Dari Januari hingga September 2014, syarikat-syarikat BioNexus telah menjana jumlah pendapatan sebanyak RM987.3 juta. Sektor BioIndustri telah menyumbang pendapatan sebanyak RM466.4 juta, manakala sektor BioPerubatan dan AgBiotech telah menyumbang sebanyak RM276.9 juta and RM244 juta, masing-masing. Ini adalah peningkatan sebanyak 12.7% berbanding dengan tempoh yang sama, iaitu RM876.2 juta dari Januari hingga September 2013.
- Program Pembangunan Komuniti Bioekonomi (BCDP) telah diperkenalkan untuk menyokong BTP sambil memberi kesan positif kepada masyarakat luar bandar melalui penggunaan teknologi berasaskan biologi.
- *In terms of investment, BiotechCorp achieved extremely favourable results as we surpassed the National Biotechnology Policy (NBP) Phase 2 targeted amount of RM9 billion, with an achievement of RM19.14 billion to date.*
- *From January to September 2014, BioNexus companies generated a total of RM987.3 million in revenues. RM466.4 million were contributed by the BioIndustrial sector, while BioMedical and AgBiotech contributed RM276.9 million and RM244 million in revenues, respectively. This is an increase of 12.7% as compared to the corresponding period, which was RM876.2 million from January to September 2013.*
- *The Bioeconomy Community Development Programme (BCDP) was introduced to augment the BTP while creating direct positive impact for rural communities through adoption of bio-based technologies.*

### Bio San Diego 2014

- BiotechCorp telah menyertai BIO San Diego 2014 pada 23 – 26 Jun 2014 di San Diego Convention Centre, San Diego, California.
- Ia merupakan pentas antarabangsa yang pertama untuk mempamerkan BioShoppe, iaitu satu inisiatif kerajaan yang dilaksanakan oleh BiotechCorp. Kedai konsep ini telah memaparkan lebih daripada 100 produk-produk berasaskan biologi oleh lebih daripada 30 syarikat-syarikat berstatus BioNexus.
- YB Datuk Dr. Ewon telah melancarkan logo BioNexus Produk yang baru, bagi menggalakkan pengiktirafan dan keyakinan pengguna.

### Panel Penasihat Antarabangsa Bioteknologi Malaysia Ke-8 (BIO-IAP) 2014

- Perdana Menteri Malaysia, YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak telah mempengerusikan mesyuarat yang diadakan di New York, USA.
- Beliau menyatakan bahawa pada 2013, tahap produktiviti syarikat BioNexus PKS berjumlah RM149,000, yang mengatasi purata produktiviti negara PKS iaitu RM50,000 pada tahun 2012.
- Beliau menyatakan inisiatif BioNext oleh SME Corp dan BiotechCorp untuk mewujudkan PKS yang berjaya adalah satu langkah yang positif dan perlu disokong dan disediakan dengan dana yang diperlukan.

**2012**  **RM50,000**  
**2013**  **RM149,000**

### BioMalaysia & Bioekonomi Asia Pasifik 2014 Ke-12

- BiotechCorp dan MOSTI telah menganjurkan Persidangan dan Pameran BioMalaysia dan Bioekonomi Asia Pasifik ke-12 pada 19 – 20 November 2014 di Kompleks Pengurusan Penyelidikan dan Inovasi Universiti Malaya, Kuala Lumpur.
- 40 penceramah dan 3000 peserta dari industri-industri dan agensi-agensy kerajaan utama menghadiri acara tersebut, termasuk penceramah utama antarabangsa yang terdiri daripada Panel Penasihat Antarabangsa Bioekonomi (IAP).

### Bio San Diego 2014

- *BiotechCorp participated in BIO San Diego 2014 which was held from 23 – 26 June 2014 at San Diego Convention Centre, San Diego, California.*
- *It was the first international platform to showcase BioShoppe, a government initiative implemented by BiotechCorp. This concept store displayed over 100 bio-based products by more than 30 BioNexus status companies.*
- *YB Datuk Dr. Ewon launched the new BioNexus Product logo, which aims to encourage recognition and consumer confidence while representing products that are manufactured with the highest standards in science, quality, and consumer satisfaction.*

### 8th Malaysia Biotechnology International Advisory Panel (Bio-IAP) 2014

- *The Prime Minister of Malaysia YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak chaired the meeting held in New York, USA.*
- *The Prime Minister noted that the total productivity level of BioNexus SMEs in 2013 amounted to RM149,000, which outperformed the national productivity average of SMEs of RM50,000 in 2012.*
- *He stated the BioNext initiative by SME Corp and BiotechCorp to create successful SMEs is a positive move and should be supported and provided with the funds required.*

### 12th BioMalaysia & Bioeconomy Asia Pacific 2014

- *BiotechCorp and MOSTI jointly organized the 12th BioMalaysia and Bioeconomy Asia Pacific 2014 Conference and Exhibition from 19 – 20 November 2014 at University of Malaya Research Management and Innovation Complex, Kuala Lumpur.*
- *40 speakers and 3000 participants from key industries and government agencies attended the event, including key international speakers comprising of the Bioeconomy International Advisory Panel (IAP).*



Perdana Menteri Malaysia, YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak (barisan hadapan, lima dari kiri) mempengerusikan mesyuarat mesyuarat BIO-IAP 2014 di New York City, Amerika Syarikat. Menteri MOSTI, YB Datuk Dr. Ewon Ebin (barisan hadapan, empat dari kiri), YBhg Prof Emeritus Dato' Sri Dr Zakri Abdul Hamid, Penasihat Sains kepada Perdana Menteri Malaysia / Pengerusi BiotechCorp (barisan hadapan, pertama dari kiri) dan YBhg Dato' Dr. Mohd Nazlee Kamal, Ketua Pegawai Eksekutif BiotechCorp (barisan belakang, empat dari kiri) turut hadir di majlis tersebut.

*Prime Minister of Malaysia YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak (front row, fifth from left) chaired the 8th BIO-IAP 2014 in New York City, USA. Among those present include the MOSTI Minister, YB Datuk Dr. Ewon Ebin (front row, fourth from left), YBhg Prof Emeritus Dato' Sri Dr Zakri Abdul Hamid, Science Advisor to the Prime Minister of Malaysia / Chairman of BiotechCorp (front row, first from left) and YBhg Dato' Dr. Mohd Nazlee Kamal, CEO of BiotechCorp (back row, fourth from left).*

- Sebanyak enam perjanjian kerjasama telah diumumkan dan ditukarkan di hadapan YAB Perdana Menteri dengan nilai pelaburan sejumlah RM250 juta.

- *A total of six collaboration agreements were announced and exchanged in front of the YAB Prime Minister with a total investment value of RM250 million.*

### **Bengkel Program Transformasi Bioekonomi (BTP)**

- Sepanjang 2014, BiotechCorp telah menjalankan tiga Bengkel BTP diikuti dengan 3 sesi makmal di Johor, Pahang, dan Melaka.
- Lima Projek Trigger BTP telah diumumkan. Projek-projek ini dijangkakan akan menyumbang hampir RM4 bilion kepada pelaburan baru pada tahun 2020.

### **BIOECONOMY TRANSFORMATION PROGRAMME (BTP) WORKSHOP**

- *Throughout 2014, BiotechCorp conducted 3 BTP Workshops followed by 3 lab sessions in Johor, Pahang and Melaka.*
- *Five new BTP Trigger Projects were announced, which will contribute nearly RM4 billion in new investments by the year 2020.*

# NATIONAL INSTITUTE OF BIOTECHNOLOGY MALAYSIA (NIBM)

**NIBM**  
NATIONAL INSTITUTES OF BIOTECHNOLOGY MALAYSIA

## 1. INSTITUT AGRO-BIOTEKNOLOGI MALAYSIA (ABI)

### PENCAPAIAN R&D

**Kacip Fatimah:** Telah membangunkan satu sistem bioreaktor untuk pengkulturan akar rerambut Kacip Fatimah. Sistem ini berpotensi untuk meningkatkan penghasilan biomas untuk tempoh masa yang lebih singkat didalam kondisi terkawal. ABI dalam proses mendaftarkan paten untuk sistem yang dibangunkan.

**Cendawan:** Program Stewardship Cendawan ABI telah mendapat sokongan dan kelulusan di bawah pembiayaan Peruntukan Khas Agensi MOSTI 2014 untuk melaksanakan projek bertajuk *Sustainable Cultivation of Mushroom for Food and Biobased-industry*. Projek ini melibatkan penglibatan agensi dan rakan strategik untuk pembangunan industri cendawan dengan penerapan teknologi maju dari sumber berkualiti tinggi.

### BIDP

ABI merupakan rakan strategik yang terpilih untuk menjadi hos bagi pelaksanaan kursus *Bioanalytical Industry Development Programme* (BIDP) Fasa II yang dianjurkan oleh Talencorp / Human Architecture Technologies Sdn Bhd (HAT). Seramai 33 peserta sedang mengikuti latihan termasuk empat pegawai ABI. Program ini diperingkat tahun terakhir program yang akan berakhir pada Oktober 2015.



## 1. INSTITUTE AGRO-BIOTECHNOLOGY MALAYSIA (ABI)

### R&D ACHIEVEMENT

**Kacip Fatimah:** ABI has developed a bioreactor system for culturing Kacip Fatimah hairy roots. This system has the potential to increase the production of biomass for a shorter period of time in controlled conditions. ABI is in the process of registering a patent for the system.

**Mushroom:** ABI Mushroom Stewardship Programme has received support and funding approval under MOSTI Agency Special Allocation 2014 for project entitled *Sustainable Cultivation of Mushroom for Food and Biobased-industry*. The project involves participation of agencies and strategic partners for development of mushrooms industry with advance technology from high-quality resources.

### BIDP

ABI is the strategic partner to host the *Bioanalytical Industry Development Program* (BIDP) Phase II course organized by Talencorp / Human Architecture Technologies Sdn Bhd (HAT). A total of 33 participants attended the training, including four officers ABI. This program is at the final stage and will end in October 2015.

## 2. INSTITUT GENOM MALAYSIA (MGI)

Program Penyelidikan Science Fund Peruntukan Khas Agensi (RMKe-10) Pada 2014, MGI meneruskan pelaksanaan lapan projek yang masing-masingnya dimulakan pada 2011 serta dan 2012.

## 2. MALAYSIA GENOME INSTITUTE

*Science Fund Research Program Special Allocation To Agencies (MP10th) In 2014, MGI continues with the execution of eight projects which started in 2011 and 2012.*

Bil. No.	Tajuk Projek / Project Title	Tahun / Years
<b>A. Genomik untuk Perindustrian Bioteknologi / Genomics for Industrial Biotechnology</b>		
1.	Mereka Bentuk Peptida dan Sintesis Berdasarkan Peniruan Enzim untuk Keperluan Industri <i>Post-genomic Discovery of Small Hypothetical Proteins from Bacillus lehensis G1 Alkaliphil</i>	2011 – 2014
2.	Mereka Bentuk Peptida dan Sintesis Berdasarkan Peniruan Enzim untuk Keperluan Industri <i>Peptide Design and Synthesis Based on Enzyme Mimics for Industrial Needs</i>	2011 – 2014
3.	Menjelaskan damar Gaharu dan Laluan Biosintesis yang lain menggunakan Transcriptome dan Metabolit Profiling besar-besaran melalui Perbandingan Pokok dijangkiti dan tidak dijangkiti <i>Elucidating The Gaharu Resin and Other Biosynthetic Pathways using Large-scale Transcriptome and Metabolite Profiling via Comparison of Infected and Uninfected Trees</i>	2011 – 2014
4.	Pengenalan Novel Enzim untuk Jumlah Penggunaan Biomass melalui Transcriptomics daripada anai-anai Digestome <i>Identification of Novel Enzymes for Total Utilization of Biomass via Transcriptomics of Termite Digestome</i>	2011 – 2014
5.	Penemuan Genom Berdasarkan Enzim Teguh untuk Permohonan Perindustrian: Proteomics Pengenalpastian rembesan Enzim daripada Bacillus lehensis G1 <i>Genome Based Robust Enzymes Discovery for Industrial Applications: Proteomics Identification of Secreted Enzymes from Bacillus lehensis G1</i>	2011 – 2014
6.	Pertambangan Extremozymes Teguh dan metabolit sekunder yang unik dari Hyperthermophylic Geobacillus sp. yang asal melalui Deep Sequencing dan Pendekatan Pengkomputeran untuk Aplikasi Industri Bioteknologi <i>Mining for Robust Extremozymes and Unique Secondary Metabolites from an Indigenous Hyperthermophylic Geobacillus sp. through Deep Sequencing and Computational Approaches for Industrial Biotechnology Applications</i>	2011 – 2014
<b>B. Genomik untuk Kesihatan Haiwan / Genomics for Animal Health</b>		
7.	Pengendalian Skrין Molekul sintetik tinggi dan kecil sebagai Anti -jangkitan <i>High Throughput Screen of Synthetic and Small Molecules as Anti-infectives</i>	2011 – 2014
8.	Perbandingan Genomik Klinikal pseudomallei dan Alam Sekitar Burkholderia untuk Memahami Kemunculan kebiasaan <i>Comparative Genomics of Clinical and Environmental Burkholderia pseudomallei to Understand Emergence of Virulence</i>	2012 – 2015

MGI berjaya menghasilkan tujuh (7) penerbitan daripada projek-projek penyelidikan yang dijalankan bagi tahun 2014.

*MGI has successfully published 7 publications for projects' research in 2014.*

### Projek Penyelidikan Kerjasama Antarabangsa

Fasa Kedua projek kerjasama Genomik Struktur dengan Monash University Australia dalam rangka MOU MOSTI-Monash University 2010-2015 telah dimulakan pada awal 2013. Sehingga ke akhir 2013, 10 molekul protein berjaya diselesaikan dan dikenal pasti mempunyai potensi untuk aplikasi bioteknologi industri. Pelaksanaan projek adalah mengikut perancangan bagi mewujudkan *Structural Genomics Pipeline* sebagai platform asas genomik yang baharu untuk aplikasi bioteknologi.

### International Collaboration In Research Project

*The second phase of the international collaboration in structural genomics with Monash University Australia under the MOSTI-Monash MOU 2010-2015 was initiated in early 2013. Up to the end of 2013 the project has solved the structure of 10 proteins and the structures have revealed potential functions for applications in industrial biotechnology. The project is also on track in establishing a Structural Genomics Pipeline as a new genome-based platform for applications in biotechnology.*

## Pengkomersilan

### I. Bioteknologi Industri

"New Technologies for Sustainable Bioeconomy: Development of Cell Biocatalysts for Production of Fine Chemicals" satu projek penyelidikan yang baharu sahaja diluluskan di bawah program Flagship MOSTI pada 18 November 2014 yang mensasarkan hasil penyelidikan bagi kegunaan bioteknologi industri. Projek ini juga akan turut menyumbang kepada penjanaian pengetahuan baharu, penerbitan, IP dan sumber manusia terlatih.

### Pengkomersilan kit-kit diagnosis denggi generasi pertama

Pangkalan data komprehensif mengenai virus denggi dibangunkan melalui projek Dengue virus genome: dynamics of dengue viruses antigenic epitopes di bawah program GMBI. Data 4 subtype sejak 1987 lagi, digunakan bagi memahami wabak denggi dalam populasi Malaysia. Beberapa kit telah dipaten dan digunakan di UMMC sedang dikomersilkan melalui kerjasama dengan syarikat bioteknologi tempatan. Kit-kit generasi pertama ini akan dimajukan lagi untuk hasilkan kit yang lebih tepat, cepat, murah dan mudah digunakan di mana sahaja berjaya dihasilkan.

### Latihan (Pembangunan Modal Insan)

Pelaksanaan lima bengkel saintifik untuk meningkatkan kepakaran sedia ada:

- Biomolecular Nuclear Magnetic Resonance (NMR) Workshop 2014 (5 – 8 Ogos 2014)
- Western Blotting Workshop (15 Oktober 2014)
- Shortcourse On BIACORE X-100 (11 & 12 November 2014)
- Workshop on Developing Right Mindset for Innovative Biological Research (24 & 25 November 2014)
- Miseq Application & Basespace Workshop (12-14 November dan 8 Disember 2014)

“ **Pangkalan data komprehensif mengenai virus denggi dibangunkan melalui projek Dengue virus genome: dynamics of dengue viruses antigenic epitopes di bawah program GMBI.** ”

## Commercialisation

### Industrial Biotechnology

*"New Technologies for Sustainable Bioeconomy: Development of Cell Biocatalysts for Production of Fine Chemicals" a project that has been approved by MOSTI on 18 November 2014, under Flagship Programme which targeted for biotechnology industry application. This project will also contribute to generate new knowledge, publications, IP and trained human resource.*

### Commercialisation of first generation of dengue fever diagnostic kits

*A comprehensive database on the dengue virus was developed through the Dengue Virus genome project: dynamics of dengue viruses antigenic epitopes, under the GMBI program. Data 4 subtype has been used since 1987 to understand the dengue epidemic in the Malaysian population. Several kit were patented and used in UMMC and are being commercialised with the cooperation of local biotechnological companies. These first generation kits will be further developed to produce kits with more accuracy, cheap and easy-to-use.*

### Training (Human Capital Development)

*Organising five (5) scientific workshops to increase existing expertise :-*

- *Biomolecular Nuclear Magnetic Resonance (NMR) Workshop 2014 (5 – 8 August 2014)*
- *Western Blotting Workshop (15 October 2014)*
- *Shortcourse On BIACORE X-100 (11 & 12 November 2014)*
- *Workshop on Developing Right Mindset for Innovative Biological Research (24 & 25 November 2014)*
- *Miseq Application & Basespace Workshop (12-14 November dan 8 December 2014)*

“ **A comprehensive database on the dengue virus was developed through the Dengue Virus genome project: dynamics of dengue viruses antigenic epitopes, under the GMBI program** ”





Majlis Menandatangani Perjanjian Persefahaman (MoU) antara IPharm dan Universiti Malaya (21 Ogos 2014) /  
*Memorandum of Understanding (MoU) Signing Ceremony between IPharm and University of Malaya (21 August 2014)*



### 3. INSTITUT FARMASEUTIKAL DAN NUTRASEUTIKAL MALAYSIA (IPHARM)

#### Program Minat Sains: Bengkel Pembuatan dan Penyediaan Kosmetik dan Nutraseutikal

Program Minat Sains yang disasarkan kepada pelajar sekolah rendah dan sekolah menengah telah berjaya diadakan pada 19 Ogos 2014. Seramai 75 orang pelajar dan 10 orang guru terlibat di dalam program ini yang diberikan pendedahan secara 'hands-on' mengenai pembuatan kosmetik iaitu sabun dan krim.

#### Perjanjian Persefahaman (MoU) antara IPharm dan Universiti Malaya

Perjanjian MoU ini telah dimeterai pada 21 Ogos 2014 di IPharm yang diwakili oleh YBhg. Prof. Dr. Awg Bulgiba Awg Mahmud (Timbalan Naib Canselor Universiti Malaya) dan YBhg. Prof. Dato' Dr. Mohd. Jamil bin Maah (Ahli Lembaga Pemegang Amanah National Institutes of Biotechnology Malaysia).

#### Program Kerjasama Novartis-Malaysia: Pemindahan Teknologi dan Pembangunan Sumber Manusia

Program ini telah diadakan pada 27 Oktober 2014 di IPharm bagi mengukuhkan kerjasama penyelidikan antara Novartis dan IPharm dalam pemindahan teknologi dan pembangunan modal insan. Seminar bertajuk 'Natural Products as Driving Force for Innovation in Pharmaceutical Research and Development' telah disampaikan oleh Dr. Frank Petersen.

### 3. INSTITUTE PHARMACEUTICAL DAN NUTRASEUTIKAL MALAYSIA (IPHARM)

#### 'Minat Sains' Programme: Cosmeceuticals and Nutraceuticals Preparation Workshop

'Minat Sains' Programme which is targeted at primary and secondary school students was successfully held on 19 August 2014. A total of 75 students and 10 teachers were exposed to cosmeceuticals manufacturing (soap and cream) through hands-on session during the programme.

#### Memorandum of Understanding (MoU) between IPharm and University of Malaya

This MoU was signed on 21 August 2014 by University of Malaya representative, YBhg. Prof. Dr. Awg Bulgiba Awg Mahmud (Deputy Vice Cancellor) and YBhg. Prof. Dato' Dr. Mohd. Jamil bin Maah (Member Board of Trustees National Institutes of Biotechnology Malaysia) at IPharm.

#### Novartis-Malaysia Partnering and Cooperation: In Technology Transfer and Human Capital Building Programme

This programme was held on 27 October 2014 at IPharm in order to strengthen the research collaboration between Novartis and IPharm especially in technology transfer and human capital building. During this programme, a seminar entitled 'Natural Products as Driving Force for Innovation in Pharmaceutical Research and Development' was conducted by Dr. Frank Petersen.

### Seminar dan Bengkel *Computer Aided Drug Design*

Seminar dan bengkel ini telah diadakan pada 2 hingga 3 Disember 2014 di Bilik Gerakan Bakawali, IPharm. Objektif utama program adalah untuk memberikan pendedahan kepada para penyelidik mengenai aplikasi *Computer Aided Drug Design* yang digunakan bagi penemuan dan rekacipta ubat-ubatan baharu dalam industri farmasi dan sumbangannya di dalam institusi penyelidikan.

### Seminar dan Bengkel Hasil Semula Jadi

Program ini telah diadakan pada 4 sehingga 5 Disember 2014 di Auditorium Misai Kucing, IPharm yang bertujuan untuk memberikan kefahaman yang lebih mendalam kepada para penyelidik mengenai konsep-konsep asas dan teori yang perlu diketahui dalam pengekstrakan hasil semula jadi dan sebatian.

### Penerbitan Jurnal

Sebanyak 19 penerbitan jurnal di peringkat antarabangsa telah berjaya dihasilkan. Antara jurnal tersebut adalah:

*Applied Biochemistry and Biotechnology, BioMed Central Structural Biology, Phytomedicine, Acta Crystallographica Section E, Journal of Chemical Technology and Biotechnology,*

### Pameran, Persidangan, Lawatan dan Latihan

Sepanjang tahun 2014, IPharm telah menyertai tujuh pameran, empat persidangan dan menerima lapan kunjungan rasmi daripada tokoh korporat dan industri serta empat lawatan daripada pelajar sekolah dan IPTA.

### *Computer Aided Drug Design (CADD) Seminar and Workshop*

*This seminar and workshop was held on 2 to 3 December 2014 at Bilik Gerakan Bakawali, IPharm. The main objective of the programme is to expose the researchers with successful applications of CADD in discovery and design of new drugs by pharmaceutical industries as well as its contribution to the research institutions.*

### *Natural Product Seminar and Workshop*

*This programme was held on 4 until 5 December 2014 at Misai Kucing Auditorium, IPharm. The seminar and workshop aimed to expose researchers to the basic concepts and theories required in the natural product and compound elucidation process.*

### *Journal Publications*

*A total of 19 publications had been published in international journals. The journals include:*

*Applied Biochemistry and Biotechnology, BioMed Central Structural Biology, Phytomedicine, Acta Crystallographica Section E, Journal of Chemical Technology and Biotechnology,*

### *Exhibition, Conference, Visit and Training*

*Throughout 2014, IPharm participated in seven exhibitions, four conferences and received eight official visits from corporate leaders and industry as well as four visits from schools and public institutes of higher learning.*



Seminar dan Bengkel Hasil Semula Jadi (4-5 Disember 2014)

*Natural Product Seminar and Workshop (4-5 December 2014)*



Lawatan Dr. Thierry Diagana daripada Novartis Institute for Tropical Diseases, Singapura (5 Disember 2014)

*Visit from Dr. Thierry Diagana, Novartis Institute for Tropical Diseases, Singapore (5 December 2014)*

BIL	PAMERAN	TARIKH
1.	Pameran Ekspo Teknologi Malaysia 2014 di Pusat Dagangan Dunia Putra, Kuala Lumpur	21–22/02/2014
2.	Persidangan dan Pameran Bio Borneo 2014 di DeTAR Putra, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak	5–7/05/2014
3.	Pameran Outreach STI-Science4U: Kimia ke Desa Zon Utara di Kampung Sungai Chenaam, Nibong Tebal, Pulau Pinang	10/05/2014
4.	Pameran Karnival Pendidikan Sains dan Teknologi Peringkat Negeri Pulau Pinang di Politeknik Seberang Perai, Pulau Pinang	29-31/05/2014
5.	Pameran Sempena Sambutan Hari Denggi ASEAN 2014 Peringkat Kebangsaan di Dataran Samudera, Melaka	15/06/2014
6.	Persidangan dan Pameran Pengkomersilan MOSTI 2014 di Pusat Konvensyen Shah Alam, Selangor	13–15/08/2014
7.	Pameran BioMalaysia dan BioEconomy Asia Pasifik 2014 di Kompleks Pengurusan Penyelidikan dan Inovasi, Universiti Malaya, Kuala Lumpur	19–20/11/2014

BIL	PERSIDANGAN	TARIKH
1.	Persidangan Pasca Siswazah Sains Kesihatan dan Kehidupan di Hotel Renaissance, Kota Bharu, Kelantan	10–11/06/2014
2.	Persidangan Antarabangsa kali ke-5 Bioteknologi untuk Kesejahteraan Industri di Universiti Teknologi Malaysia, Kuala Lumpur	10–11/06/2014
3.	Persidangan Kongres Saintifik Antarabangsa Farmakologi dan Fisiologi di Pusat Konvensyen Kuala Lumpur	22–24/08/2014
4.	Persidangan Pasca Siswazah kali ke-2 dalam Bioteknologi di Universiti Soka, Tokyo	26- 28/08/2014

NO	EXHIBITION	DATE
1.	<i>Malaysia Technology Expo Exhibition 2014 (MTE 2014) at Putra World Trade Centre (PWTC), Kuala Lumpur</i>	<i>21–22/02/2014</i>
2.	<i>Bio Borneo Conference and Exhibition 2014 at DeTAR Putra, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak</i>	<i>05/–7/05/2014</i>
3.	<i>Outreach STI-Science4U Exhibition: Chemistry to Village Northern Region at Sungai Chenaam Village, Nibong Tebal, Penang</i>	<i>10/05/2014</i>
4.	<i>Penang Exhibition on Science and Technology Education Carnival at Politeknik Seberang Perai, Penang</i>	<i>29-31/05/2014</i>
5.	<i>Exhibition on National ASEAN Dengue Day 2014 at Dataran Samudera, Malacca</i>	<i>15/06/2014</i>
6.	<i>MOSTI Conference and Commercialisation Exhibition 2014 (MCCE 2014) at Shah Alam Conevention Centre (SACC), Selangor</i>	<i>13–15/08/2014</i>
7.	<i>BioMalaysia and BioEconomy Asia Pacific 2014 Conference and Exhibition at Research Management and Innovation Complex, Universiti Malaya, Kuala Lumpur</i>	<i>19–20/11/2014</i>

NO.	CONFERENCE	DATE
1.	<i>Health and Life Sciences Postgraduate Conference (HeLiPC 2014) at Renaissance Hotel, Kota Bharu, Kelantan</i>	<i>10–11/06/2014</i>
2.	<i>5th International Conference on Biotechnology for the Wellness Industry at University of Technology Malaysia, Kuala Lumpur</i>	<i>10–11/06/2014</i>
3.	<i>Pharmacology and Physiology International Scientific Congress at Kuala Lumpur Convention Centre (KLCC)</i>	<i>22–24/08/2014</i>
4.	<i>2nd International Postgraduate Conference on Biotechnology (IPCB 2014) at Soka University, Tokyo</i>	<i>26- 28/08/2014</i>

# NIBM

NATIONAL INSTITUTES OF BIOTECHNOLOGY  
MALAYSIA

ABI

GENOM MALAYSIA  
Malaysia Genome Institute



[www.nibm.my](http://www.nibm.my)



identified biotechnology as a key driver for economic growth. In 2005, the government established the National Institute of Biotechnology (NIBM) as one of the three National Institutes of Science and Technology (NISTeP). NIBM is a government-owned corporation (GOC) with a mandate to provide a comprehensive ecosystem for the biotechnology industry.

three National Institutes are the National Institute of Science and Technology (NISTeP) (ABO) and the National Institute of Space Research and Aerospace (NIRSA).

on RDIC of biotechnology and to become a leading center for the acceleration of biotechnology industry and to attract and professionalize national and co-ordinate with the relevant agencies to seek for funding programmes.

Pharmaceuticals provide research and development for National Biotechnology Cooperative

accelerated as National Biotechnology Cooperative and implement the research activities through activities research, innovation and commercialization (RDIC). The

# INNO BIOLOGICS SDN BHD



## InnoBio

VENTURES



### **Forum Mengenai Kerjasama Industri-Universiti-Institusi Penyelidikan Ke Arah Pembangunan Ubatan Biologik Di Malaysia**

Satu forum bertajuk "Kerjasama Industri-Universiti-Institusi Penyelidikan Ke Arah Pembangunan Ubatan Biologik Di Malaysia", anjuran bersama oleh MOSTI dan Inno Biologics Sdn Bhd (IBL), telah diadakan pada 15 Oktober 2014 di Nilai Springs Resort Hotel.

Forum ini diadakan untuk terus menyumbang dalam usaha untuk membawa hasil penyelidikan seperti harta intelek (IP) ke arah pengkomersilan. Antara isu yang diketengahkan di dalam forum ini ialah cabaran ke arah pengkomersilan. Isu lain yang dibincangkan ialah kekurangan penyelarasan, pemantauan dan penyediaan laporan untuk program penyelidikan terlibat.

Inno Bio mengambil inisiatif untuk mengumpul maklumat dan menyediakan cadangan penyelesaian jangka panjang agar usaha yang lebih teratur dapat dilaksanakan untuk projek penyelidikan terutamanya untuk penghasilan ubatan menyelamatkan nyawa.

### ***Forum On Industry-University-Research Institute Collaboration Towards Biologic Drugs Development Program In Malaysia***

*A forum entitled "Industry-University-Research Institute Collaboration Towards Biologic Drugs Development Program in Malaysia", was co-organised by MOSTI and Inno Biologics Sdn Bhd (IBL) held on 15th October 2014 at Nilai Springs Resort Hotel.*

*The forum is to further contribute to the effort in bringing research result such as intellectual property (IP) into commercialisation. Issues that are highlighted in the forum are related to the challenges towards commercialisation. Another issue is the lack of coordination, monitoring and reporting in the programmes.*

*Thus, Inno Bio has taken the initiative to gather the findings to prepare a proposal for long-term solutions for a more organised and coordinated effort in research particularly to produce life saving medicine.*



Majlis Menandatangani Perjanjian Perniagaan di antara Inno Bio dan Aryogen Biopharma disaksikan oleh YB. Menteri MOSTI. Dari kiri: Dr Fereidoun Mahboudi (Pengerusi dan Ketua Pegawai Eksekutif, Aryogen Biopharma), YB Dato Seri Dr. Hilmi (Timbalan Menteri, Kementerian Kesihatan), YB Datuk Dr. Ewon Ebin (Menteri, MOSTI), YB Datuk Dr. Abu Bakar bin Mohamad Diah (Timbalan Menteri, MOSTI), Tan Sri Abdul Rahman Bin Mamat (Pengerusi, Inno Bio Ventures), Datuk Dr. Ahmed Tasir bin Lope Pihie (Presiden, Inno Biologics Sdn Bhd)

*Business Agreement Signing Ceremony between Inno Bio and Aryogen Biopharma witnessed by YB. MOSTI Minister. From left: Dr Fereidoun Mahboudi (Chairman and CEO, Aryogen Biopharma), YB Dato Seri Dr. Hilmi (Deputy Minister, Ministry Of Health), YB Datuk Dr. Ewon Ebin (Minister, MOSTI), YB Datuk Dr. Abu Bakar bin Mohamad Diah (Deputy Minister, MOSTI), Tan Sri Abdul Rahman Bin Mamat (Chairman, Inno Bio Ventures), Datuk Dr. Ahmed Tasir bin Lope Pihie (President, Inno Biologics Sdn Bhd)*

## Inno Bio Akan Mengeluarkan Produk Biosimilar Yang Pertama Di Malaysia

Inno Bio telah menjalinkan kerjasama strategik dengan Aryogen Biopharma untuk mengeluarkan produk biosimilar pertama Malaysia untuk pasaran tempatan dan luar negara.

Aryogen adalah sebuah syarikat pembuatan biofarmaseutikal swasta berpusat di Tehran, Iran. Aryogen telah menghasilkan beberapa produk biofarmaseutikal penting untuk menyelamatkan nyawa ramai pesakit. Produk-produk biosimilar yang dikeluarkan oleh Aryogen terdiri daripada beberapa ubatan utama yang bernilai tinggi.

Kerjasama ini akan meletakkan nama Malaysia sebagai sebuah negara yang berkemampuan dalam pengeluaran ubatan biologik. Dengan adanya ubatan biologik yang dikeluarkan di dalam Malaysia akan mengurangkan kos dan import untuk ubatan tersebut juga meningkatkan akses pesakit kepada ubatan kritikal.

## *Inno Bio To Produce The First Malaysian Made Biosimilar In Malaysia*

*Inno Bio has a strategic partnership with Aryogen Biopharma to produce its Malaysia's first biosimilar for the domestic market and abroad.*

*Aryogen is a private biopharmaceutical manufacturing company based in Tehran, Iran. Aryogen has produced some important biopharmaceutical products to save many patients. The Biosimilar products which are issued by Aryogen consist of several major drugs of high value.*

*This collaboration will place Malaysia as a capable country in producing the biologic drugs. The biologic drugs produced in Malaysia will reduce the cost of importing the medicines and will also improve the patients access to critical medicines.*

# TECHNOLOGY PARK MALAYSIA



## TECHNOLOGY PARK MALAYSIA

YBhg. Dato' Ir. Haji Mohd Azman Haji Shahidin menerima anugerah CyberSecurity Organization of The Year Award 2014 daripada DYTM Sultan Perak, Sultan Nazrin Shah.

*YBhg. Dato' Ir. Haji Mohd Azman Haji Shahidin receiving the CyberSecurity Organization of The Year Award 2014 from HRH the Sultan of Perak, Sultan Nazrin Shah.*

### **Pencapaian: TPM Memenangi Anugerah "CyberSecurity Organization of The Year 2014"**

Technology Park Malaysia Corporation Sdn Bhd (TPM) memenangi anugerah "CyberSecurity Organization of The Year 2014" atas usaha mereka mempromosikan dan mengukuhkan inisiatif keselamatan siber dalam bidang Teknologi Komunikasi dan Maklumat (ICT). TPM memainkan peranan penting dalam transformasi ekonomi negara dengan memperkasa serta menggalakkan keusahawanan akar umbi dan pembangunan usahawan teknologi, terutama memupuk syarikat baru melalui Pusat Inovasi dan Inkubasinya.

### **Award: TPM Won CyberSecurity Organization of The Year Award 2014**

*Technology Park Malaysia Corporation Sdn Bhd (TPM) has won the CyberSecurity Organisation of The Year Award 2014 for their efforts in promoting and strengthening cyber security initiatives in the field of Information and Communication Technology (ICT). TPM plays an important role in the nation's economic transformation through empowering and encouraging grassroots entrepreneurship and technopreneurship development, especially the nurturing of new start-ups through its Innovation and Incubation Centre.*



### TPM Melancarkan Incubator Virtualisation Model (IVM)

**TPM melancarkan program keusahawanan maya yang dikenali sebagai Incubator Virtualisation Model (IVM) bagi membantu melahirkan usahawan inovatif baru.** Inisiatif TPM adalah model perniagaan yang pertama seumpamanya di Malaysia yang membolehkan kerjasama strategik pada perkhidmatan maya untuk usahawan teknologi bagi mendapatkan nasihat inkubator tanpa berada secara fizikal di premis inkubator ini. Tiga produk baru dikomersialkan adalah Evenesis - VenueVille: Your Ideal Venue Deal Maker oleh Y Us Sdn Bhd; Aplikasi Perniagaan mudah alih oleh SME Cloud Sdn Bhd dan Aplikasi GuruBestari oleh Akriz Sdn Bhd. YB Timbalan Menteri turut menyaksikan majlis menandatangani Memorandum Persefahaman antara TPM dan DreamEDGE Sdn Bhd iaitu syarikat khidmat pakar mereka bentuk, kejuruteraan dan digital.

### TPM Launched Incubator Virtualisation Model (IVM)

**TPM launched its virtual entrepreneurship programme known as the Incubator Virtualisation Model (IVM) to facilitate the creation of new entrepreneurs.** The TPM initiative is the first business model of its kind in Malaysia that enables strategic collaboration on virtual services for technopreneurs to garner the advice of an incubator without actually being located at the incubator's premise. The three newly commercialised products were Evenesis - VenueVille: Your Ideal Venue Deal Maker developed by Y Us Sdn Bhd; Mobile Business Apps by SME Cloud Sdn Bhd and GuruBestari Apps by Akriz Sdn Bhd. The deputy minister also witnessed the signing of a Memorandum of Understanding between TPM and DreamEDGE Sdn Bhd, a Malaysian design and engineering services company specialising in digital design.





4 September 2014 – Delegasi dari Technology Park Malaysia dan Bandung Tech Park semasa MoU Signing di Bandung, Indonesia

4th September 2014 – Delegations from both Technology Park Malaysia and Bandung Tech Park during the MoU Signing in Bandung, Indonesia

### TPM dan BTP Jalinkan MoU bagi Program Keusahawanan dan Inkubasi

TPM dan Bandung Techno Park (BTP) Indonesia telah menjalin kerjasama bagi co-inkubasi dan inisiatif pengantarabangsaan yang bertujuan membantu peserta inkubator mereka untuk menembusi pasaran global. Pemahaman bersama serta kerjasama antara kedua-dua pihak bermula berikutan persetujuan kolektif antara inkubator ASEAN semasa Bengkel Perniagaan Teknologi ASEAN yang diadakan pada Jun tahun lepas di Bogor, Indonesia.

### *MoU between TPM and BTP on Incubation and Entrepreneurship*

*TPM and Bandung Techno Park (BTP) Indonesia has been working for the co-incubation and internationalisation initiative that aims to help incubator participants to penetrate the global markets. Mutual understanding and cooperation between the two parties began since the collective agreement between the incubators during the ASEAN Business Technology Workshop held in June last year in Bogor, Indonesia.*



300 STANDARD  
INTERFACE

INIF

# LAPORAN KLUSTER ICT

- ◆ Bahagian Dasar ICT
- ◆ MIMOS Berhad
- ◆ CyberSecurity Malaysia

## CLUSTER REPORT ICT

- ◆ *ICT Division*
- ◆ *MIMOS Berhad*
- ◆ *CyberSecurity Malaysia*

# BAHAGIAN DASAR ICT

## ICT POLICY DIVISION



SECURITY

### Kunjungan Hormat Delegasi Kazakstan Ke MOSTI

YBhg. Dato' Dr. Mohd Azhar bin Hj. Yahaya, Timbalan Ketua Setiausaha (Dasar) Kementerian Sains, Teknologi dan Inovasi (MOSTI) telah menerima kunjungan hormat delegasi Kazakstan ke MOSTI mewakili Ketua Setiausaha MOSTI pada 11 November 2014 jam 11.30 pagi. Delegasi Kazakstan diketuai oleh Encik Yerlan Kozhabergenovich Yesmambetov, Pengarah State Technical Service Republican Enterprise. Semasa kunjungan tersebut, MOSTI menggalakkan kerjasama antara Kazakstan dan CyberSecurity Malaysia (CSM) di mana CSM merupakan pusat rujukan kebangsaan bagi perkara-perkara berkaitan dengan keselamatan siber.



### Kunjungan Wakil International Telecommunication Union (ITU) Ke MOSTI

YBrs. Dr. Zulkifli Mohamed Hashim, Timbalan Ketua Setiausaha (Sains) Kementerian Sains, Teknologi dan Inovasi (MOSTI) telah menerima kunjungan dari wakil International Telecommunication Union (ITU) iaitu Encik Marco Obiso, Ketua Inisiatif Keselamatan Siber ITU pada 24 Julai 2014 jam 2.30 petang. Semasa kunjungan tersebut, cadangan berkaitan dengan inisiatif keselamatan siber ITU bagi rantau Asia Pacific dibincangkan.

### Kazakhstan Delegation's Courtesy Call on MOSTI

*YBhg. Dato' Dr. Mohd Azhar bin Hj. Yahaya, the Deputy Secretary General (Policy) of Ministry of Science, Technology and Innovation (MOSTI) received delegation from Kazakhstan to MOSTI on behalf of Secretary General MOSTI on 11 November 2014 at 11.30am. Kazakhstan delegation was headed by Mr. Yerlan Kozhabergenovich Yesmambetov, Director of State Technical Service Republican Enterprise. During the visit, MOSTI encouraged close cooperation between Kazakhstan and CyberSecurity Malaysia (CSM) as CSM is the national technical reference center in cyber security.*



### Visit From International Telecommunication Union (ITU) to MOSTI

*YBrs. Dr. Zulkifli Mohamed Hashim, Deputy Secretary General (Science) of Ministry of Science, Technology and Innovation (MOSTI) received Mr. Marco Obiso, Head of Cyber Security of International Telecommunication Union (ITU) on 24 July 2014 at 2.30pm. During the visit, ITU's Cyber Security initiative for Asia Pacific region has been discussed.*

# MIMOS BERHAD



31 Okt 2014 : Pertukaran Memorandum Persefahaman dokumen diadakan di NICE2014, PWTC  
31 Oct 2014 : Exchange of Memorandum of Understanding documents held at NICE2014 in PWTC

## Anugerah/ Pengiktirafan

1. Mendapat tempat ke-3 pada 2014 dalam anugerah RedDot Institute yang berpangkalan di Essen, Germany bagi kategori studio rekabentuk paling inovatif di dunia.
2. Mendapat Level 3 People CMM (v2.0), iaitu ukuran industri untuk keupayaan manusia.
3. Disenaraikan sebagai salah satu pemenang pada 5th Asia Best Employer Brand Awards 2014.

## Kesan Ekonomi

1. Jumlah nilai teknologi penjana kewangan oleh pihak industri melalui pemberian kontrak atau pesanan belian bagi tahun 2014 adalah RM401.15 juta.
  - Jumlah terkumpul penjana kewangan teknologi dari tahun 2011 hingga 2014 adalah RM1011.06 juta.

## Awards/ Recognition

1. *Ranked No. 3 in 2014 for the World's Most Innovative Design Studio by RedDot Institute, which is based in Essen, Germany.*
2. *Attained Level 3 People CMM (v2.0), an industry measure for people capability.*
3. *Named one of the winners of the 5th Asia's Best Employer Brand Awards 2014.*

## Economic Impact

1. *Total value of technology monetisation by industry through contract awards or purchase order for 2014: RM401.15 million.*
  - *Cumulative total value of technology monetisation from 2011 to 2014: RM1011.06 million.*

- Jumlah nilai *market funnel* oleh industri bagi tahun 2014 adalah RM8.09 bilion.
  - Jumlah terkumpul *market funnel* dari tahun 2010 hingga 2014 adalah RM 15.27 bilion.
- Persediaan makmal *Failure Analysis* untuk perkhidmatan Tahap 3 tahun 2014: Kesemua enam peralatan telah dipasang sepenuhnya dan digunakan. Sebanyak 16 buah syarikat telah menggunakan perkhidmatan ini.

- Total value of market funnel created by industry for 2014: RM8.09 billion.*
  - Cumulative total value of market funnel created from 2010 to 2014: RM 15.27 billion.*
- Setup Failure Analysis Lab for Level 3 services (Material Analysis) for 2014: All six equipments have been fully installed and commissioned, and 16 companies have utilised the services.*

### Harta Intelektual

Status	2014 (Sehingga 31 Disember 2014)	Jumlah (Jumlah terkumpul 2004 – 2014)
Pendedahan Idea yang dihantar	187	1812
Pemfailan Paten	120	934
Paten yang didaftarkan	60	189
Pemfailan Rekabentuk Perindustrian (Malaysia)	15	47
Pendaftaran Rekabentuk Perindustrian (Malaysia)	9	37
Pendaftaran Rekabentuk Perindustrian Pengkomersilan IP/Monetized (Paten & Hak cipta)	Paten – 70 ID – 1 Hak cipta - 58	Paten – 110 ID – 4 Hak cipta - 80

### Intellectual Property

Status	Current Year 2014 (as of 31 Dec 2014)	Total (Cumulative 2004 – 2014)
Submitted Disclosures	187	1812
Patent Filed	120	934
Patent Granted	60	189
Industrial Design Filed (Malaysia)	15	47
Industrial Design Registered (Malaysia)	9	37
IP Commercialised/Monetised (Patent & Copyright)	Paten – 70 ID – 1 Copyright- 58	Paten – 110 ID – 4 Copyright- 80

### Pemfailan Antarabangsa

Status	2014 (Sehingga 31 Disember 2014)	Jumlah (Jumlah terkumpul 2007 – 2014)
Pemfailan Paten Antarabangsa (PCT)	119	705
Pemfailan Paten Antarabangsa (Pemfailan negara)	-	102
Paten Antarabangsa yang didaftarkan (Pemfailan negara)	17	20
Pemfailan Rekabentuk Perindustrian (Pemfailan negara)	-	135
Pendaftaran Rekabentuk Perindustrian (Pemfailan negara)	-	97

### International Filing

Status	Current Year 2014 (as of 31 Dec 2014)	Total (Cumulative 2004 – 2014)
International Patent Filing (PCT)	119	705
International Patent Filing (Country Filing)	-	102
International Patent Granted (Country Filing)	17	20
Industrial Design Filed (Country Filing)	-	135
Industrial Design Registered (Country Filing)	-	97



1 Nov: Presentation of MIMOS Prestigious Award attended by Deputy Prime Minister, MOSTI top officials and MIMOS Chairman



1-2 Dec: Workshop for staff of Ministry of Health on the application of Teleprimary Care - Oral Health Clinical Information System (TPC-OHCIS)

**Hasil penyelidikan**

Hasil Penyelidikan	JUMLAH
Pembuktian Konsep (PoC) Makmal Penyelidikan	75
Platform teknologi	57
Kerangka teknologi	5
Produk & penyelesaian	87

**Pembangunan Teknologi**

1. PoC pasaran yang dibangunkan: sembilan.
2. PoC penyelidikan yang dibangunkan: 30 teknologi baharu yang dijana daripada penyelidikan yang telah dipamerkan pada Previu Teknologi Hala Tuju MIMOS (RMTR) pada 27 Nov – 2 Dis 2014.

**Research Output**

Research Output	Total as at 2014
Research Lab Proofs-of-Concept	75
Technology platforms	57
Technology frameworks	5
Products & solutions	87

**Technology Development**

1. Market PoC developed: nine new PoC developed in 2014.
2. Research PoC developed: 30 new technologies generated from research showcased during RMTR on 27 Nov – 2 Dec 2014.

# CYBERSECURITY MALAYSIA



## Pencapaian utama

CyberSecurity Malaysia menyumbangkan 10 KPI untuk MOSTI; dan ada yang melepasi sasaran sehingga lebih dari 50 peratus.

## Key Achievements

In 2014, CyberSecurity Malaysia contributed 10 KPI to MOSTI, with some exceeded target by more than 50 percent.

MKRA / MKPI	KPI 2014	% PENCAPAIAN
MKRA2: Memperkukuh penyelidikan & pembangunan dalam bidang STI.	12,287 orang menerima manfaat dari perkhidmatan saintifik yang diterapkan. (Sasaran: 10,000)	123%
MKRA3: Memperkukuhkan kepakaran dalam bidang STI	Menerbitkan 14 karya dalam dalam jurnal STI. (Sasaran: 12)	117%
MKRA2: Memperkukuhkan penyelidikan & pembangunan dalam bidang STI	Pemindahan dua (2) teknologi ke IPT atau organisasi swasta atau kerajaan. (Sasaran: 2)	100%
MKRA4: Mewujudkan budaya inovatif dan kreatif; serta peningkatan kesedaran, penghayatan dan aplikasi dalam bidang STI	Empat (4) projek STI/CSR diterapkan kepada komuniti. (Sasaran: 2)	200%
	419 orang mendapat faedah dari projek STI/CSR yang diterapkan kepada komuniti. (Sasaran: 400)	105%
	21 program kesedaran STI yang berfokus khusus terhadap pelajar, komuniti dan industri. (Sasaran: 20)	105%
	24,906 orang mendapat faedah dari program kesedaran STI yang berfokus khusus terhadap pelajar, komuniti dan industri. (Sasaran: 15,000)	166%
MKRA3: Memperkukuhkan kepakaran dalam bidang STI dengan memastikan bilangan pekerja terlatih dengan pensijilan atau kelayakan profesional dalam bidang siber bertambah setiap tahun.	25 Pekerja Mahir (Knowledge Worker) dilatih dalam Program Pembangunan Modal Insan peringkat agensi/ syarikat (sasaran 20)	119%
	896 sumber insan mendapat persijilan atau kelayakan profesional (sasaran 600 orang)	149%
	Bagi syarikat /agensi: 76 orang dilatih (berbanding sasaran 55 orang)	138%

MKRA / MKPI	KPI 2014	% ACHIEVEMENT
MKRA2: Intensification of RD&C & Scientific/Industry Services in STI	Target: 10,000 Clients Benefited from Scientific Services Provided. Achieved: 12,287	123%
MKRA3: Knowledge Generation through STI application	Target: 12 Publications in STI Journals. Achieved 14	117%
MKRA2: Intensification of RD&C & Scientific/Industry Services in STI	Target: Two (2) Technologies Transferred to Companies/ Government Agencies/ Institutes of Higher Learning (IHLs). Achieved 2	100%
MKRA4: Societal Well-being Through Creation of Innovative and Creative Culture and Increase in STI Awareness, Appreciation and Application	Target two (2) STI/CSR Projects Diffused to Community. Achieved four (4)	200%
	Target 400 People Impacted from STI/CSR Projects Diffused to Community. Achieved 419	105%
	Target 20 STI Awareness Programmes Focusing on Students, Communities & Industries. Achieved 21	105%
	Target 15,000 People Impacted from STI Awareness Programmes Focusing on Students, Communities & Industries. Achieved 24,906	166%
MKRA3: Strengthening Talents in STI	25 skilled workers (Knowledge Workers) trained in human capital development programme Agency/company level. (Achieved 20)	119%
	Target 600 Trained Knowledge Workers by Certification/ Professional Qualification. Achieved 896.	149%
	For companies / agencies: 76 people trained (compared to the target of 55)	138%



## Pencapaian Peringkat Korporat

CyberSecurity Malaysia menetapkan lima matlamat strategik sebagai KPI Korporat 2014. Secara keseluruhan, CyberSecurity Malaysia mencapai 160 peratus dari sasaran yang ditetapkan, antaranya:

1. Penubuhan Pusat Kecemerlangan (COE) Nasional: rangka tindakan CyberSecurity Malaysia telah disiapkan dan dikemukakan kepada EPU.
2. Enam (6) aktiviti penjenamaan bersama dengan rakan kongsi tempatan dan antarabangsa dilaksanakan.
3. Membangunkan keupayaan proaktif & pertahanan negara: 781 profesional tempatan mendapatkan pensijilan keselamatan maklumat.
4. Melancarkan lima (5) perkhidmatan baru.
5. 'Mewujudkan Perkongsian Pintar sebagai Model Penglibatan Strategik': memetriai 10 perkongsian strategik pada tahun 2014.
6. 'Menerajui Pembudayaan Keselamatan Siber Negara': 74 aktiviti jangkauan (outreach) dan kempen kesedaran di bawah program CyberSAFE yang telah memanfaatkan kira-kira 24,791 rakyat Malaysia di seluruh negara. Mendapatkan RM700,000 sumbangan dari sektor swasta untuk Program Pembudayaan Negara.
7. 'Menjadi pemangkin Daya Saing dan Pertumbuhan Industri Tempatan': Tujuh (7) produk ICT telah dinilai untuk pensijilan. Cadangan 'Dasar Perolehan Negara bagi Skim Common Criteria' telah dibangunkan dan dibentangkan dalam mesyuarat e-kedaulatan pada 8 Mei 2014 yang dipengerusikan oleh Timbalan Perdana Menteri; yang telah pun bersetuju dan menerima cadangan tersebut. 51 profesional dilatih dalam Pembangunan Produk Keselamatan. 25 Profesional Keselamatan Maklumat dilatih menjadi perunding yang berkelayakan untuk menyediakan bukti-bukti bagi skim Common Criteria di Malaysia.
8. CyberSecurity Malaysia dan Ketua Pegawai Eksekutif CyberSecurity Malaysia telah dilantik semula sebagai Pengerusi World Trustmark Alliance (WTA) bagi tahun 2015. Ini merupakan perlantikan semula bagi tahun ke-dua, setelah memegang jawatan tersebut bagi tahun 2014.

## Achievements – Corporate KPI

*Overall, in 2014, CyberSecurity Malaysia exceeded the target set for the corporate by 160 percent. Among the key achievements in 2014 are as follows:*

1. *Blueprint to establish National Center of Excellence (COE), completed and submitted to EPU.*
2. *Six (6) co-branding activities with local and international partners.*
3. *Facilitated information security certification to 781 local professionals.*
4. *Launched five (5) new services.*
5. *Established 10 strategic partnerships.*
6. *Driving National Cybersecurity Acculturation: 74 outreach and awareness activities under the CyberSAFE program. Benefited approximately 24,791 Malaysians, nationwide. RM700,000 funding generated from the private sector as contribution to the National Acculturation Programme.*
7. *To Catalyse Local Industry Growth and Competitiveness: Seven (7) ICT products were evaluated for certification. The National Procurement Policy on Common Criteria was developed and presented in e-sovereignty meeting on 8 May 2014 chaired by DPM; who agreed and accepted the proposal. 51 professionals trained in Secured Product Development. 25 Information Security Professionals trained to become consultants, qualified to prepare Evidences for Common Criteria scheme in Malaysia.*
8. *Reappointed to Chair the World Trustmark Alliance (WTA) for 2015 (the second term, having Chaired the WTA for 2014 as well).*

**Membangunkan keupayaan proaktif & pertahanan negara: 781 profesional tempatan mendapatkan pensijilan keselamatan maklumat**

**Facilitated information security certification to 781 local professionals**

9. Ketua Pegawai Eksekutif CyberSecurity Malaysia, Dr Amirudin Abdul Wahab telah dikurniakan anugerah Ketua Pegawai Keselamatan/ Ketua Pegawai Informasi (CSO/CIO) Terbaik dalam kalangan Negara-negara ASEAN pada Sidang Kemuncak ke-10 ASEAN CIO/CSO.

9. *Chief Executive Officer, Dr Amirudin Abdul Wahab was honored on 2nd December 2014 at Ho Chi Minh City, Vietnam, as one of the most outstanding Chief Security Officers (CSO) in ASEAN region.*

### Program/Aktiviti

Pusat pengendalian insiden keselamatan siber negara iaitu, Cyber999 telah menerima 11,918 laporan insiden berkaitan keselamatan siber dari pengguna Internet di seluruh Malaysia pada tahun 2014. Jumlah insiden yang dilaporkan ke Pusat Bantuan Cyber999 meningkat sebanyak 12.05% berbanding 10,636 insiden pada tahun 2013.

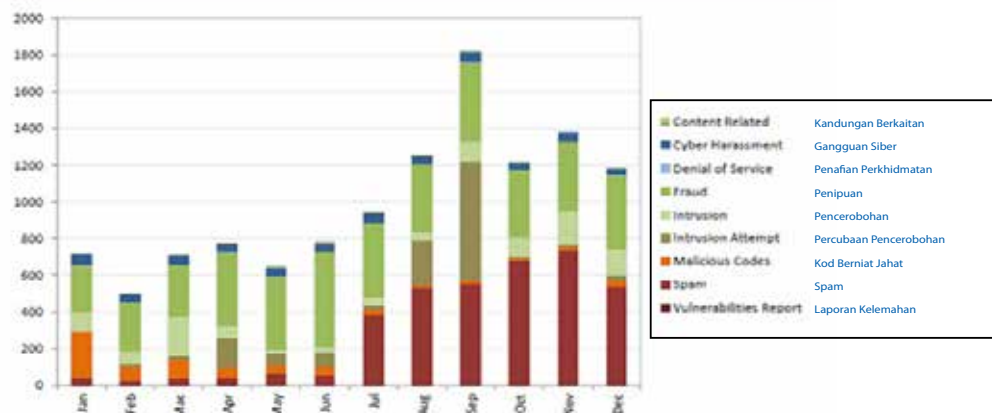
### Programme/Activities

*The Cyber999 Help Centre of CyberSecurity Malaysia received 11,918 incident reports in 2014; an increase by 12.05% compared with 10,636 incidents in 2013.*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
<b>Content Related / Kandungan Berkaitan</b>	5	2	2	1	4	2	4	6	3	3	0	3	35
<b>Cyber Harassment / Gangguan Siber</b>	57	41	45	44	46	48	52	44	53	36	50	34	550
<b>Denial of Service / Penafian Perkhidmatan</b>	1	2	3	2	4	1	3	1	6	3	0	3	29
<b>Fraud / Penipuan</b>	250	264	280	399	401	519	406	372	435	366	377	408	4477
<b>Intrusion / Pencerobohan</b>	109	76	216	70	15	28	43	47	104	105	178	134	1125
<b>Intrusion Attempt / Percubaan Pencerobohan</b>	3	11	24	157	63	75	21	241	649	12	19	27	1302
<b>Malicious Codes / Kod Berniat Jahat</b>	251	78	101	55	47	48	29	14	22	13	16	42	716
<b>Spam / Spam</b>	40	23	32	36	61	55	385	530	548	671	735	534	3650
<b>Vulnerabilities Report / Laporan Kelemahan</b>	1	1	4	9	4	1	0	3	2	7	1	1	34
<b>TOTAL</b>	<b>717</b>	<b>498</b>	<b>707</b>	<b>773</b>	<b>645</b>	<b>777</b>	<b>943</b>	<b>1258</b>	<b>1822</b>	<b>1216</b>	<b>1376</b>	<b>1186</b>	<b>11918</b>

Kejadian Yang Dilapor Berdasarkan Statistik Klasifikasi Kejadian Umum 2014

Reported Incidents based on General Incident Classification Statistics 2014



- Anugerah Keselamatan Siber Malaysia (Malaysia Cyber Security Awards) 2014 telah berlangsung pada 12 November 2014, di mana CyberSecurity Malaysia telah menyampaikan tujuh (7) kategori anugerah keselamatan siber kepada individu serta organisasi yang telah menyumbang kepada perkembangan industri keselamatan siber di Malaysia. Majlis diadakan pada satu Santapan Malam Gala yang diserikan dengan keberangkatan Duli Yang Maha Mulia Sultan Paduka Seri Sultan Perak Darul Ridzuan, Sultan Nazrin Muizzuddin Shah ibni Almarhum Sultan Azlan Muhibbuddin Shah Al-Maghfur-lah.
- Pelancaran produk MyTrustSEAL telah diadakan sempena Persidangan dan Pameran Inovasi Kebangsaan (NICE2014) yang berlangsung dari 31 Oktober hingga 2 November 2014 di Dewan Merdeka, Pusat Dagangan Dunia Putra (PWTC), Kuala Lumpur. Majlis Pelancaran MyTrustSEAL telah disempurnakan pada 31 Oktober 2014 oleh YB Datuk Dr. Ewon Ebin, Menteri Sains, Teknologi dan Inovasi.
- Sempena lawatan rasmi YAB Dato' Sri Mohd Najib Tun Abdul Razak, Perdana Menteri Malaysia ke Republic of Korea (R.O.K) pada 9 hingga 11 Disember 2014 Memorandum Persefahaman (MoU) dengan National Forensic Service (NFS) Korea ditandatangani pada 10 Disember 2014 di Bandaraya Seoul, Korea oleh Dr Amirudin Abdul Wahab, Ketua Pegawai Eksekutif (CEO) CyberSecurity Malaysia, dan Joong Seok Seo, Ketua Pengarah (Director General), National Forensic Service (NFS) Korea; dan disaksikan oleh YB Datuk Dr Ewon Ebin, Menteri Sains, Teknologi dan Inovasi.
- *5th Malaysia Cybersecurity Awards, MCSA2014 was held on 12 November 2014, The Awards presentation and Gala Dinner was officiated by the Duli Yang Maha Mulia Sultan Paduka Seri Sultan Perak Darul Ridzuan, Sultan Nazrin Muizzuddin Shah ibni Almarhum Sultan Azlan Muhibbuddin Shah Al-Maghfur-lah.*
- *A new product, MyTrustSEAL, was launched during the National Innovation Conference & Exhibition (NICE) 2014 on 31st October by YB Datuk Dr. Ewon Ebin, Minister of MOSTI.*
- *In conjunction with YAB Dato' Sri Mohd Najib Tun Abdul Razak, the Prime Minister of Malaysia to the Republic of Korea (R.O.K), CyberSecurity Malaysia signed MoU with the National Forensic Services (NFS) of Korea on 10 December 2014 in Seoul, Korea.*





EXPRESSO

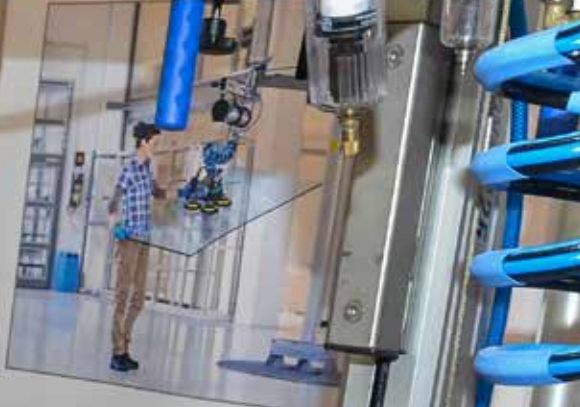
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# LAPORAN KLUSTER INDUSTRI

- ◆ Bahagian Industri
- ◆ Agensi Nuklear Malaysia
- ◆ Jabatan Standard Malaysia
- ◆ Direktorat Nanoteknologi Kebangsaan
- ◆ Lembaga Perlesenan Tenaga Atom
- ◆ SIRIM Berhad
- ◆ Majlis Rekabentuk Malaysia
- ◆ NanoMalaysia Berhad
- ◆ Malaysian Technology Development Corporation (MTDC)

# CLUSTER REPORT INDUSTRY

- ◆ *Industry Division*
- ◆ *Malaysian Nuclear Agency*
- ◆ *Department of Standards Malaysia*
- ◆ *National Nanotechnology Directorate*
- ◆ *Atomic Energy Licensing Board*
- ◆ *SIRIM Berhad*
- ◆ *Malaysia Design Council*
- ◆ *NanoMalaysia Berhad*
- ◆ *Malaysian Technology Development Corporation (MTDC)*

# BAHAGIAN INDUSTRI

## INDUSTRY DIVISION



YBhg. Dato' Sri Dr. Noorul Ainur Mohd. Nur, Ketua Setiausaha MOSTI mempengerusikan Mesyuarat penemuan awal Misi Susulan IAEA di Hotel Putrajaya Marriott

YBhg. Dato' Sri Dr. Noorul Ainur Mohd. Nur, Secretary General of MOSTI chairing the Preliminary Findings of the IAEA Post-Review Mission Meeting at Putrajaya Marriott

### Pembangunan Roadmap Teknologi Robotik

Pada 25 Mac 2014, Bahagian Industri telah menganjurkan Bengkel Penentuan Halatuju Teknologi Robotik yang telah diadakan di Pusat Konvensyen Antarabangsa Putrajaya (PICC), Putrajaya. Bengkel ini bertujuan mendapatkan input keperluan dan kesediaan teknologi robotik untuk dibangunkan di dalam negara. Melalui bengkel ini sebanyak 10 teknologi telah dikenal pasti berpotensi untuk dimajukan dengan aplikasi teknologi robotik.

Pada 23 September 2014, Bahagian ini juga telah menganjurkan Bengkel Pemurnian Roadmap Teknologi Robotik bertempat di Technology Park Malaysia (TPM) Bukit Jalil. Bengkel ini bertujuan untuk mendapatkan input dan penglibatan yang lebih meluas daripada pemain industri bagi memastikan 10 teknologi aplikasi robotik yang telah dikenal pasti sebelum ini adalah selari dengan kehendak industri dan pasaran. Hasil dari bengkel ini, sebanyak lima teknologi/bidang penggunaan dipersetujui untuk diketengahkan dan perlu difokuskan di dalam pembangunan industri robotik di dalam negara. Input ini

### Development of a Robotics Technology Roadmap

*On March 25, 2014, the Industry Division organised a workshop on Robotics Technology Roadmap at the Putrajaya International Convention Centre (PICC). The objective of this workshop focuses on getting input on requirements and readiness of robotics technology that can be developed in the country. Through this workshop, 10 technologies have been identified with potential for further development in robotics applications.*

*As a continuation, in order to ensure 10 identified robotics technology can be applied and in line with the market needs, a follow-up workshop with the involvement of industry players was held at Technology Park Malaysia (TPM), Bukit Jalil on 23 September 2014. As a result, five robotic application/technological areas were agreed to be pursued for the development of robotics industry in the country. This output then will be adopted to produce robotic technology roadmap to be spearheaded by TPM with the support from MiGHT dan MyRAIG.*

kemudiannya akan diguna pakai dalam menghasilkan roadmap teknologi robotik yang akan diketuai oleh TPM dengan kerjasama MiGHT dan MyRAIG

### **Program Timbal Balas (Offset)**

Program timbal balas atau sebelum ini dikenali sebagai program Offset dirangka bagi meningkatkan keupayaan industri tempatan melalui pemindahan teknologi atau pembelian timbal balas bagi produk atau teknologi keluaran Malaysia.

Pada masa sekarang, MIGHT dan MOSTI sedang memantau pelaksanaan projek-projek timbal balas projek-projek bagi aktiviti pemindahan teknologi yang sedang dalam pelaksanaan seperti berikut:

- i. Penyelidikan minyak kelapa sawit untuk turbin Aero-Gas;
- ii. Penghasilan serbuk Super Grade Tantalum;
- iii. Pembuatan aeroangkasa pusat inovasi; dan
- iv. Permohonan bahan termaju.

Satu lawatan ke Universiti Teknologi Malaysia (UTM), Skudai, Johor telah diadakan pada 9 September 2014. Tujuan lawatan tersebut adalah untuk menyediakan laporan audit selepas pelaksanaan aktiviti penyelidikan minyak kelapa sawit untuk turbin Aero-Gas.

### **Jawatankuasa Kerja Penyelidikan dan Inovasi (JKKPI) di bawah Majlis Teknologi Hijau dan Iklim (MTHPI)**

JKKPI adalah jawatankuasa kerja di bawah MTHPI yang dipengerusikan oleh Timbalan Ketua Setiausaha Sains, MOSTI. Mesyuarat MTHPI telah diadakan pada 9 Januari 2015 dan MOSTI telah membentangkan satu kertas berhubung cadangan pelantikan kementerian atau agensi sebagai peneraju kepada pelaksanaan aplikasi teknologi hasil daripada penyelidikan dan pembangunan (R&D) di dalam bidang tenaga boleh baharu (RE).

Mesyuarat JKKPI yang telah diadakan pada 7 Ogos 2014 pula telah menyediakan satu kertas makluman berhubung potensi penjana tenaga dari sumber yang boleh diperbaharui: ocean thermal energy conversion (OTEC) yang telah diterima dan dibentangkan dalam Mesyuarat Jawatankuasa Pemandu MTHPI pada 10 November 2014.

### **Countertrade Programme**

The Countertrade Programme is designed to enhance the capabilities of local industries through technology transfers or counter-purchase trading products and technologies produced in Malaysia.

Currently, MOSTI and MIGHT are jointly monitoring the implementation of the following projects:

- i. Research of palm oil for Aero-Gas turbine;
- ii. Production of Super Grade Tantalum powder;
- iii. Aerospace Manufacturing Innovation Centre (AMIC); and
- iv. Application of Advanced Material.

A visit to Universiti Teknologi Malaysia (UTM), Skudai, Johor was held on 9 September 2014. The purpose of the visit was to prepare the audit report for post implementation research of palm oil for Aero-Gas turbine.

### **Working Committee For Research And Innovation (Jkkp&I) Under The Council For Green Technology And Climate Change (MTHPI)**

The working committee of JKKPI is under the chairmanship of the Deputy Secretary General (Science), MOSTI. The Council's meeting was held on 9 January 2014 and MOSTI presented an information paper on the nomination of lead agencies in the implementation of the technologies developed by MOSTI which fall under the agencies purview. JKKPI's meeting was also held on 7 August 2014 and an information paper on the potential of Ocean Thermal Energy Conversion was presented during the Pre-Council's meeting on 10 November 2014.

- i. Penyelidikan minyak kelapa sawit untuk turbin Aero-Gas;**
- ii. Penghasilan serbuk Super Grade Tantalum;**
- iii. Pembuatan aeroangkasa pusat inovasi; dan**
- iv. Permohonan bahan termaju.**

- i. Research of palm oil for Aero-Gas turbine;*
- ii. Production of Super Grade Tantalum powder;*
- iii. Aerospace Manufacturing Innovation Centre (AMIC); and*
- iv. Application of Advanced Material.*

### **ASEAN Sub-committee on Science and Technology Infrastructure and Resources Development (SCIRD)**

Malaysia mengetahui penerbitan Jurnal ASEAN *Science and Technology for Development (AJSTD)* di bawah SCIRD. Satu keluaran AJSTD (Jilid 30 (1&2) 2013) telah diterbitkan pada bulan Jun 2014.

### **ASEAN Sub-committee on Sustainable Energy Research (SCSER)**

Malaysia adalah negara peneraju untuk Program Flagship bio-bahan api ASEAN. Program ini menetapkan **sasaran 5% penggunaan biofuel dalam sektor pengangkutan darat di rantau Asia Tenggara** yang perlu dicapai pada akhir tahun 2015. Sebagai salah satu inisiatif, satu kertas cadangan dari Malaysia untuk membangunkan Peraturan Kategori Produk untuk bio bahan api di ASEAN telah dibentangkan dalam Mesyuarat ke-44 di Singapura dan telah dipersetujui secara prinsipnya untuk dilaksanakan pada tahun 2015.

#### **Aktiviti**

Penganjuran Misi Susulan bagi *Radiation Safety Aspects of the Rare Earth Processing Facility in Malaysia*.

#### **Input**

1. Agensi Tenaga Atom Antarabangsa (IAEA) telah menubuhkan misi susulan yang terdiri daripada lapan orang pakar bertujuan membuat penilaian keatas saranan IAEA di dalam laporannya pada tahun 2011 iaitu *Report of the International Review Mission on the Radiation Safety Aspects of a Rare Earths Processing Facility*.
2. Misi susulan ini telah diadakan pada 13 hingga 17 Oktober 2014 bertujuan meningkatkan tahap keyakinan rakyat Malaysia, khususnya penduduk Kuantan mengenai aspek keselamatan radiasi operasi Lynas melalui penilaian dan pelaporan yang bebas tanpa campur tangan mana-mana pihak dalam memastikan laporan yang telus dihasilkan oleh IAEA.

### **Asean Sub-Committee on Science and Technology Infrastructure and Resources Development (SCIRD)**

*Malaysia is the lead country for the publication of the ASEAN Journal on Science and Technology for Development (AJSTD), which is under SCIRD. One issue of AJSTD (Vol. 30 (1&2) 2013) was published in June 2014.*

### **Asean Sub-Committee on Sustainable Energy Research (SCSER)**

*Malaysia is the lead country for the ASEAN Biofuel Flagship Programme. The Programme sets a **target of 5% biofuels consumption in the land transportation sector in South-East Asian region** to be achieved by the end of 2015. As one of the initiatives, a proposal paper on the development of Product Category Rule for biofuels in ASEAN was presented in the 44th Meeting in Singapore by Malaysia and was agreed in principal to be implemented in 2015.*

#### **Activity**

*International Post-Review Mission on Radiation Safety Aspects of the Rare Earth Processing Facility in Malaysia.*

#### **Input**

1. *The International Atomic Energy Agency (IAEA) convened an International Post-Review Mission consisting of eight international experts to review and evaluate the fulfilment of the recommendations provided in the 2011 IAEA Review Mission on the Radiation Safety Aspects of the Operation of a Rare Earth Processing Facility.*
2. *The mission was held from 13 to 17 October 2014 to elevate the level of confidence of the Malaysian public, particularly the residents of Kuantan on the radiation safety aspects of Lynas operation through independent and unbiased assessment, evaluation and reporting undertaken by IAEA.*





Taklimat oleh Lynas (Malaysia) Sdn Bhd mengenai operasi kilang Lynas kepada Misi Susulan IAEA

*Briefing by Lynas (Malaysia) Sdn Bhd on it's plant operations to IAEA Post-Review Mission*



Lawatan oleh Misi Susulan IAEA ke fasiliti penstoran Lanthanide di Lynas (Malaysia) Sdn Bhd

*Visit by IAEA Post-Review Mission to the Lanthanide storage facility in Lynas (Malaysia) Sdn Bhd*

3. Misi susulan ini melibatkan 53 pihak berkepentingan yang terdiri daripada kementerian dan agensi yang berkaitan, ahli akademik, pertubuhan bukan kerajaan, pihak berkuasa tempatan dan persatuan penduduk.

### Hasil

IAEA telah menyediakan laporan akhir bertajuk *Report of the International Post-Review Mission on the Radiation Safety Aspects of the Operation of a Rare Earth Processing Facility and Assessment of the Implementation of the 2011 Mission Recommendations* dan mengemukakan laporan tersebut kepada MOSTI pada 15 Januari 2015.

3. *The mission involved 53 various stakeholders consisting of relevant ministries and agencies, academia, non-governmental organisation, local council and residential associations.*

### Outcome

*IAEA prepared the Final Report of the International Post-Review Mission on the Radiation Safety Aspects of the Operation of a Rare Earth Processing Facility and Assessment of the Implementation of the 2011 Mission Recommendations and submitted the report to MOSTI on 15 January 2015.*

# AGENSI NUKLEAR MALAYSIA

## MALAYSIAN NUCLEAR AGENCY



### Penyelidikan dan Pembangunan (R&D) Teknologi Nuklear

### Research and Development of Nuclear Technology

Nuklear Malaysia sedang giat menjalankan penyelidikan dengan menghasilkan 12 produk baru, enam proses baru dan 10 prosedur baru, dan enam paten telah difailkan selain terlibat dengan 702 penerbitan saintifik dan teknikal.

*Nuclear Malaysia is actively conducting research by producing 12 new products, six new processes and 10 new procedures and six patent filling. Besides that, Nuclear Malaysia is also involved in 702 scientific and technical publications.*

Bagi tujuan penyelidikan dan pembangunan teknologi, Nuklear Malaysia telah terlibat dalam 26 kerjasama R&D dengan universiti dan agensi dalam dan luar negara.

*For the benefit of research and development of the technology, Nuclear Malaysia collaborated with 26 national and international universities and agencies.*

Sebanyak dua projek R&D berimpak tinggi sedang dijalankan di Nuklear Malaysia iaitu :

*There are two high impact R&D projects being conducted in Nuclear Malaysia as follows:*

- Development of Innovative Nuclear Reactor Technology (With The Spin-Off) Based on Thorium
- Development of 30MeV Cyclotron Facility at Malaysian Nuclear Agency

- *Development of Innovative Nuclear Reactor Technology (With The Spin-Off) Based on Thorium*
- *Development of 30MeV Cyclotron Facility at Malaysian Nuclear Agency*



Gambar 1: Antara produk yang berjaya dihasilkan sepanjang penyelidikan dijalankan di Nuklear Malaysia.

*Photo 1: Some of the successfully produced products during the on-going research at Nuclear Malaysia.*



**Gambar 2: Penerima pingat dalam MTE 2014 bersama YB Timbalan Menteri**

*Photo 2: Award Medal recipients in MTE 2014 with the Deputy Minister*

### Anugerah

Kecemerlangan Agensi Nuklear Malaysia telah terbukti apabila mengungguli pelbagai anugerah termasuklah satu Anugerah Antarabangsa "IAEA Plant Mutation Breeding Awards", satu Anugerah Khas "Women Inventor of The Year, MTE 2014, enam pingat emas, enam pingat perak dan satu pingat gangsa dimenangi dalam pertandingan inovasi di peringkat kebangsaan dan antarabangsa.

### Pemindahan dan Pengkomersilan Teknologi Nuklear

Bagi tujuan pengkomersilan teknologi, Nuklear Malaysia telah menjalankan satu pemindahan teknologi kepada komuniti dan 25 pemindahan teknologi kepada industri. Selain itu, Nuklear Malaysia turut menyediakan 7,497 perkhidmatan teknikal kepada pihak industri dan orang awam. Nuklear Malaysia telah berjaya memperoleh pendapatan sebanyak RM 13.24 juta dari aktiviti pengkomersilan dan perkhidmatan teknikal.



### Award

*Excellence performance of the Malaysian Nuclear Agency has been proven by numerous awards won by the agency including 1 International award "IAEA Plant Mutation Breeding", one Special award "Women Inventor of The year, MTE 2014, six golds, six silvers and one bronze are awarded at national and international innovation competition.*

### Transfer and Commercialisation of Nuclear Technology

*For the technology commercialisation, Nuclear Malaysia has conducted one technology transfer to community and 25 technology transfers to industry. Nuclear Malaysia has derived RM 13.24 million of income from the commercialisation and technical services activities.*



**Gambar 3: Pengkomersilan teknologi nuklear kepada pihak industri.**

*Photo 3: Nuclear technology commercialisation to the industries*

Gambar 6: Pelajar diberi pendedahan tentang sains dan keselamatan teknologi nuklear dan penggunaan serta sumbangannya dalam kehidupan seharian.

Photo 6: Students are given an overview of the science and safety of nuclear technology and its uses and its contribution in daily life



### Penggalakan dan Penerimaan Awam Teknologi Nuklear

Komitmen Nuklear Malaysia untuk program bagi penggalakkan penerimaan orang awam terhadap sains dan teknologi terbukti dengan penganjuran dua aktiviti perkhemahan iaitu Nuclear-Veni, Vidi, Vici dan terlibat program Jelajah Ikon Saintis.

### Pembangunan Modal Insan

Nuklear Malaysia telah menganjurkan 726 aktiviti kepakaran melibatkan 84 pegawai bagi tujuan pembangunan modal insan. Tiga orang pegawai telah memperolehi ijazah PhD dan lima orang pegawai memperolehi MSc

### Penganjuran Program Utama 2014

Majlis Penyerahan Reactor Digital Instrumentation & Control System (ReDICS) oleh KAERI kepada Nuklear Malaysia pada 6 Mac 2014 di Dewan Tun Ismail, Agensi Nuklear Malaysia. Seminar R&D 2014 diadakan pada 14-16 Oktober di Agensi Nuklear Malaysia. Sebanyak 102 kertas kerja dan 40 poster dibentangkan.

### Promotion and Public Acceptance of Nuclear Technology

*Nuclear Malaysia's commitment to the programme for the promotion of public acceptance of science and technology are proven by the organization of two Nuclear-Veni, Vidi, Vici camping activities and engaging in Jelajah Ikon Saintis programme.*

### Human Resource Development

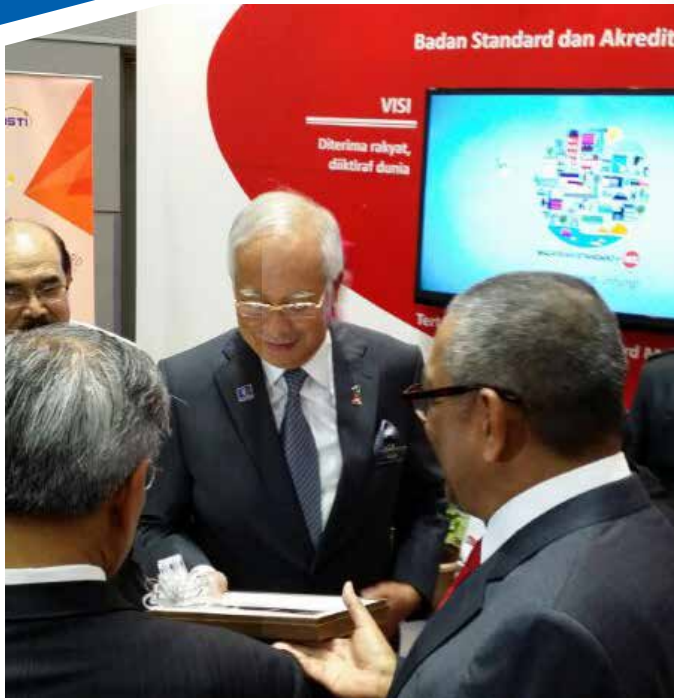
*Nuclear Malaysia has organized 726 expert activities which involving 84 officers for the purpose of human resource development. There are three officers were graduated in PhD and 5 officers achieve MSc.*

### Main Event Organized by Nuclear Malaysia 2014

*Hand-over Ceremony of Reactor Digital Instrumentation & Control System (ReDICS) by KAERI to Nuclear Malaysia, 6 March 2014 at Dewan Tun Ismail, Malaysian Nuclear Agency. Seminar on R&D 2014, 14-16 October 2014 at Malaysian Nuclear Agency. A total of 102 papers and 40 posters presented.*

# JABATAN STANDARD MALAYSIA

## DEPARTMENT OF STANDARDS MALAYSIA



### Pencapaian/program/aktiviti utama

- Pada 4 Jun 2014, YAB Dato' Sri Mohd Najib bin Tun Haji Abdul Razak, Perdana Menteri Malaysia telah melancarkan Program Pematuhan Standard Kebangsaan (NSCP) bagi meningkatkan daya saing dan kepentingan kualiti di kalangan industri. Sehingga 31 Disember 2014, **sebanyak 77 buah syarikat telah berjaya didaftarkan di bawah program** tersebut melebihi sasaran 30 buah syarikat yang telah ditetapkan oleh YB Menteri MOSTI.

# STANDARDS MALAYSIA

### Achievements/main programmes/activities

- *On 4th June 2014, YAB Dato' Sri Mohammad Najib Tun Haji Abdul Razak, Prime Minister of Malaysia, launched National Standards Compliance Programme (NSCP) aimed to enhance our country's competitiveness and quality consciousness among industries. Until 31 December 2014, **77 companies have signed up for the programme**, achieving beyond the 30 companies targeted by YB Minister MOSTI.*

- Bagi mewujudkan persekitaran alam bina yang inklusif untuk semua golongan termasuk golongan kurang upaya, Dewan Bandaraya Kuala Lumpur (DBKL) menandatangani memorandum persefahaman (MOU) bersama Standards Malaysia. MOU tersebut antara lain adalah untuk mempromosi penggunaan standard berkaitan persekitaran alam bina terutamanya kepada pemaju bagi mendapatkan Sijil Perakuan Siap dan Pematuhan (CCC). Standard tersebut, *Malaysian Standard on Universal Design and Accessibility in the Build Environment - Code of Practice (MS 1184:2014)*.



- Sekolah Menengah Kebangsaan Aminuddin Baki, Kuala Lumpur dan Sekolah Menengah Kebangsaan Bandaraya, Kota Kinabalu telah dianugerahkan pingat emas dan perak dalam kategori kumpulan pertengahan (umur diantara 13-15 tahun) di dalam pertandingan global - the 9th Annual Standards Olympiad, yang dianjurkan oleh *Korean Agency for Technology and Standards (KATS)* di Anseong, Korea.

- Malaysia melalui Standards Malaysia telah diterima sebagai ahli *The Standards and Metrology Institute for Islamic Countries (SMIIC)* di Istanbul, Republik Turki pada 19 November 2014 dalam usaha mempengaruhi agenda Halal di peringkat global serta menjalinkan hubungan antarabangsa demi pengkongsian maklumat seperti amalan baik industri halal.



- *To create an inclusive built environment for all including the disabled, Kuala Lumpur City Hall (DBKL) signed a Memorandum of Understanding (MOU) with Standards Malaysia. This MOU among others aims to promote the utilisation of standards related to the built environment especially for the developers in obtaining the Certificate of Completion and Compliance (CCC). This revised Malaysian Standard on Universal Design and Accessibility in the Build Environment - Code of Practice.*

- *Sekolah Menengah Kebangsaan Aminuddin Baki, Kuala Lumpur and Sekolah Menengah Kebangsaan Bandaraya, Kota Kinabalu were awarded gold and silver medal respectively in the middle group category (aged 13-15 years) in the global competition - the 9th Annual Standards Olympiad, organised by the Korean Agency for Technology and Standards (KATS) in Anseong, Korea.*

- *Malaysia through Standards Malaysia became a member of the Standards and Metrology Institute for Islamic Countries (SMIIC) on 19 November in Istanbul, Republic of Turkey in efforts to influence the future global Halal agenda and creating global networks to have meaningful exchange of information such as Halal industry best practices.*

- Standards Malaysia telah mencapai melebihi sasaran yang ditetapkan oleh YB Menteri MOSTI untuk 800 buah syarikat mendapat pensijilan daripada badan pensijilan yang diakredit oleh Standards Malaysia, dimana sebanyak 841 buah syarikat telah mendapat pensijilan dalam program seperti Sistem Pengurusan Kualiti (QMS), Sistem Pengurusan Alam Sekitar (EMS), Sistem Pengurusan Keselamatan Makanan (FSMS), Occupational Safety and Health (OSH) dan Hazard Analysis and Critical Control Points (HACCP) sehingga 31 Disember 2014. Statistik menunjukkan terdapat peningkatan sebanyak 9.3% pada tahun 2014 berbanding dengan 697 buah syarikat yang mendapat pensijilan pada tahun 2013. Di samping itu, Standards Malaysia telah mengakredit 62 makmal, 12 badan pensijilan dan satu fasiliti pengujian pada tahun 2014.



- Standards Malaysia achieved beyond the 800 companies to be certified by its accredited certification bodies set by YB Minister MOSTI, whereby as of 31 December 2014, 841 companies were certified to programmes such as Quality Management System (QMS), Environmental Management System (EMS), Food Safety Management System (FSMS), Occupational Safety and Health (OSH) and Hazard Analysis and Critical Control Points (HACCP). This also showed a 9.36% increase compared to 697 companies certified in 2013. Besides that, Standards Malaysia accredited 62 laboratories, 12 certification bodies and one testing facility in the year.*

- Kepakaran pegawai dan penilai Standards Malaysia didalam aktiviti akreditasi diiktiraf di peringkat antarabangsa, apabila dilantik sebagai ketua penilai dan penilai dalam penilaian badan akreditasi Jepun, Thailand dan Singapore yang dianjurkan oleh *Asia Pacific Laboratory Accreditation Cooperation (APLAC)* dan *Pacific Accreditation Cooperation (PAC)*. Standards Malaysia juga telah dilantik sebagai Pengerusi ASEAN Consultative Committee on Standards and Quality (ACCSQ), Working Group 2.



- Standards Malaysia officers and assessors showcased their expertise in international accreditation activities by becoming lead evaluators and evaluators for accreditation bodies such as Japan, Thailand and Singapore under the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and Pacific Accreditation Cooperation (PAC). Furthermore, Standards Malaysia has also been appointed as the Chairman of the ASEAN Consultative Committee on Standards and Quality (ACCSQ), Working Group 2.*

- Standards Malaysia telah memperkukuhkan hubungan kerjasama serantau dan sub-serantau dengan berkongsi pengetahuan dan kepakaran teknikal melalui tiga (3) program latihan *Malaysian Technical Cooperation Programme (MTCP)* iaitu

- Halal Standards and Conformance Infrastructure* yang dianjurkan pada 3-9 September 2014 dan dihadiri oleh 21 peserta dari 17 negara OIC
- Halal Standards and Conformance Infrastructure* yang dianjurkan pada 5-11 November 2014 dan dihadiri oleh 11 peserta dari 7 negara OIC.
- Standards and Conformance Infrastructure* juga dianjurkan pada 20-26 Ogos 2014 dan dihadiri oleh 17 peserta dari 11 Negara Afrika.



- Standards Malaysia strengthened its regional and sub-regional cooperation by sharing knowledge and technical expertise through three (3) Malaysian Technical Cooperation Programme (MTCP):*

- Halal Standards and Conformance Infrastructure on 3-9 September, attended by 21 participants from 17 countries of the Organisation of Islamic Cooperation (OIC).*
- Halal Standards and Conformance Infrastructure on 5-11 November, attended by 11 participants from 7 countries of the OIC.*
- Standards and Conformance Infrastructure was held on 20-26 August, attended by 17 participants from 11 African Countries. Photo 6*

- Dua pemimpin yang berpengaruh di arena standard antarabangsa, iaitu Mr. Rob Steele, *Secretary General of International Organization for Standardization (ISO)* dan Dr. Junji Nomura, *President of International Electrotechnical Commission (IEC)* bersama-sama dengan 15 Ketua Pegawai Eksekutif dari Badan Standard Kebangsaan telah menghadiri Pacific Area Standards Congress (PASC) ke-37 yang dianjurkan oleh Standards Malaysia, pada 5-9 Mei 2014.



- Two of the most influential people in the international standardisation arena, Mr. Rob Steele, Secretary General of International Organization for Standardisation (ISO) and Dr. Junji Nomura, President of International Electrotechnical Commission (IEC) together with 15 CEOs from various national standards bodies, attended the 37th Pacific Area Standards Congress (PASC) hosted by Standards Malaysia on 5-9 May 2014.*







Peserta seminar penyelidikan nanoteknologi sedang membentangkan status projek yang dibiayai oleh geran mosti  
*One of the research seminar participant presents the status of project funded by mosti grand*



Program kesedaran nanoteknologi  
*Nanotechnology awareness program*



Para pengunjung sedang menjalankan aktiviti yang disediakan di booth nano  
*Visitors doing activities at nano booth*

- i. Forum Terbuka Inovasi Serantau untuk menggalakkan Pembangunan Lestari
  - ii. Seminar Kawalselia dan Keselamatan Nano
  - iii. Seminar Penyelidikan & Pameran Nanoteknologi
- Program Kesedaran Nanoteknologi pada 22 hingga 27 November 2014 bersempena dengan Festival Sains bertempat di Pusat Sains Negara. Tujuan program ini adalah untuk memberi pendidikan dan pendedahan awal mengenai teknologi nano kepada golongan pelajar sekolah rendah, sekolah menengah dan prasiswazah. Program yang dirangka khas ini dapat memberi manfaat dan faedah kepada pengunjung dari segi pendidikan, sosial, dan pengetahuan sains terkini.

- i. *Regional Open Innovation Forum on Promoting Nanotechnology and Agriculture for Sustainable Development*
  - ii. *Nano Safety and Regulatory*
  - iii. *Research Seminar & Exhibition in Nanotechnology*
- *"Nanotechnology Awareness Programme" was organised from 22 to 27 November 2014 in conjunction with Festival Science at the National Science Centre. The aim of the program is to provide educational exposure about nanotechnology to the students ranging from primary school to universities undergraduate students. The programme was specifically designed to provide the benefits of educational, social, current science and technology status to the visitors.*

• **Regional Open Innovation Forum on Promoting Nanotechnology and Agriculture for Sustainable Development.**

• **Nano Safety and Regulatory**

• **Research Seminar & Exhibition in Nanotechnology**

# LEMBAGA PERLESENAN TENAGA ATOM (LPTA)

**ATOMIC ENERGY  
LICENSING BOARD  
(AELB)**



## Pencapaian/Program/Aktiviti Utama

1. Pusat Sokongan Sekuriti Nuklear (NSSC)
  - NSSC yang diiktiraf oleh Agensi Tenaga Atom Antarabangsa (IAEA) dengan peranan serantau ini telah ditubuhkan melalui AELB pada 12 Disember 2012. NSSC ini berperanan sebagai pusat kecemerlangan khusus bagi sekuriti nuklear untuk agensi penguatkuasaan kebangsaan yang berkaitan, antaranya Majlis Keselamatan Negara (MKN), Polis DiRaja Malaysia (RMP), Kastam DiRaja Malaysia (RMC) dan Agensi Penguatkuasaan Maritim Malaysia (APMM), di mana AELB diberi tanggungjawab untuk mengkoordinasi program latihan, di samping berperanan sebagai pusat serantau. Pada tahun 2014, Malaysia telah memohon bantuan IAEA

## Achievements/Activities

1. Nuclear Security Support Centre (NSSC)

*A NSSC that is recognised by the IAEA with the regional roles has been established through AELB on 12th December 2012. This NSSC serves as a dedicated nuclear security centre of excellence for relevant national enforcement agencies, inter alia, the National Security Council (MKN), the Royal Malaysia Police (RMP), Royal Malaysian Customs Department (RMC) and the Malaysian Maritime Enforcement Agency (APMM), with AELB given the responsibility to coordinate the training programme, besides serving as a regional centre. In 2014, Malaysia requested for IAEA's assistance to equip Malaysian laboratory*



**Urusetia AELB sedang membantu peserta Latihan Kebangsaan Ex-Storm XII (Special Team Operation & Response Mechanism)**

*AELB secretariat assisting the trainee during the Ex-Storm XII National Drill (Special Team Operation & Response Mechanism)*

AELB menyertai Program STI bersama Komuniti di SMK Geting, Pengkalan Kubor, Kelantan pada 23 – 24 September 2014

*AELB joined STI Program in SMK Geting Community, Pengkalan Kubor, Kelantan from 23 - 24 September 2014*



- untuk melengkapkan keupayaan makmal Malaysia untuk melaksanakan pengujian dan penerimaan peralatan pengesan sinaran. Sebagai balasan, Malaysia menawarkan untuk memanjangkan sokongan IAEA ini kepada negara anggota yang lain di rantau ini melalui penggunaan makmal tersebut yang dijangka sebagai sebahagian daripada NSSC.

#### Keupayaan Pengesanan Sinaran

- Pada April 2014, AELB telah mengemukakan permohonan kepada IAEA untuk meningkatkan keupayaan pengesanan bahan nuklear dan radioaktif dengan peralatan pengesan sinaran (handhelds). Di bawah Jawatankuasa Sempadan Serantau yang dipengerusikan oleh Majlis Keselamatan Negara, peralatan pengesan sinaran telah dikenal pasti penting di pintu masuk dan keluar Malaysia. Ia juga digunakan oleh badan sekuriti semasa acara awam besar-besaran di Malaysia. Malaysia telah melaksanakan langkah-langkah sekuriti nuklear semasa lawatan Presiden Amerika Syarikat, Barack Obama ke Malaysia dari 26 hingga 28 April 2014.

#### Portal Pemantauan Sinaran (RPM)

- Pada tahun 2014, Malaysia telah menerima satu set peralatan IT untuk mengintegrasikan data komunikasi di antara RPM tempatan dan RPM IAEA-EU dengan menggunakan *Integrated Nuclear Security Network (INSN)* software yang disediakan oleh IAEA, di samping memperkukuhkan keupayaan Pasukan Sokongan

*capability to perform acceptance and testing of radiation detection equipment. In return, Malaysia may offer to extend this support to other member states in the region through the usage of the lab that is expected to be part of the NSSC.*

#### Radiation Detection Capability

- *In April 2014, AELB has submitted a request to the IAEA to enhance nuclear and other radioactive material detection capabilities with mobile (handhelds) radiation detection equipment. Under the Regional Border Committee chaired by the National Security Council, radiation detection equipment are identified as necessary at points of entry and exit in Malaysia. They are also used by the security forces during major public events in Malaysia. Malaysia has implemented nuclear security measure during the visit of US President, Barack Obama to Malaysia from 26 to 28 April 2014.*

#### Radiation Portal Monitor (RPM)

- *In 2014, Malaysia has received one set of IT equipment to integrate data communication between the local RPM and the IAEA-EU RPM by using an Integrated Nuclear Security Network (INSN) software provided by the IAEA, as well as further enhancing its Mobile Expert Support Team (MEST) and Front-line Officer (FLO) capability under the responsibility of AELB.*



Pakar Bergerak (MEST) dan Pegawai Barisan Hadapan (FLO) di bawah tanggungjawab AELB.

### Latihamal Kebangsaan Ex-Storm XII

- AELB menyertai Latihamal Kebangsaan Ex-Storm XII (Special Team Operation & Response Mechanism) anjuran Jabatan Bomba dan Penyelamat Malaysia (JBPM) yang diadakan di seluruh Malaysia sepanjang tahun 2014 untuk menguji dan menilai tahap kesiapsiagaan pelbagai agensi dalam menangani insiden-insiden yang melibatkan pelbagai bahan berbahaya seperti bahan radioaktif, bahan kimia dan sebagainya.

### Program Pameran dan Aktiviti Kesedaran Awam

- Di bawah Program Pameran dan Aktiviti Kesedaran Awam 2014, AELB telah menyertai 14 pameran yang diadakan di seluruh Malaysia dan juga telah menerima sebanyak 12 lawatan rasmi daripada pelbagai agensi kerajaan serta institusi pengajian tinggi di seluruh Malaysia. Lawatan dan pameran ini diadakan bertujuan memberi pendedahan kepada orang awam mengenai peranan AELB sebagai badan perundangan dalam memastikan keselamatan sinaran dan nuklear, sekuriti dan kawalgunaan untuk kegunaan secara aman.



Para pelajar menjawab kuiz yang diadakan di booth pameran AELB semasa Program STI bersama Komuniti di SMK Geting, Pengkalan Kubor, Kelantan

*Students answering quiz at STI Programme with the Community at exhibition booth in SMK Geting, Pengkalan Kubor, Kelantan*

### National Training Exercise Ex-Storm XII

- *AELB took part in National Training Exercise Ex-storm XII (Special Team Operation & Response Mechanism) organized by the Malaysian Fire and Rescue Department (JBPM), the training was held all over Malaysia throughout 2014 to test and evaluate the level of preparedness of various agencies in dealing with emergencies incidents involving a variety of harmful substances such as radioactive materials, hazardous chemicals and etc.*

### Exhibition Programme and Public Awareness Activities

- *Under the Exhibition Programme and Public Awareness Activities, AELB has participated in 14 exhibitions held throughout Malaysia and has also received a total of 12 officials visit from various government agencies and institutions of higher educations in Malaysia. The aims of the exhibitions and visits are to educate public about the role of AELB as a regulatory authority with credibility in radiation and nuclear safety, security and safeguard.*

# SIRIM BERHAD

Anugerah 2014 / Awards 2014



ACARA / EVENT	EMAS / GOLD	PERAK / SILVER	GANGSA / BRONZE
<p>Pameran Reka Cipta , Inovasi &amp; Teknologi 2014</p> <p><i>International Invention, Innovation &amp; Technology Exhibition 2014</i></p>	<p>Fabrikasi Komposit Carbon- Tembaga- Karbon melalui Aplikasi laluan Powder Metallurgy bagi Elektrik dan Elektronik</p> <p><i>Fabrication of Carbon-Copper Composites via Powder Metallurgy Route for Electrical and Electronic Applications</i></p>	<p>Sistem Hybrid Angin dan Suria untuk Eco Resort</p> <p><i>Hybrid Solar and Wind System for Eco Resort</i></p> <p>Novel Bilayered Scaffold untuk aplikasi Kejuruteraan Tisu Osteochondral Novel</p> <p><i>Bilayered Scaffold for Osteochondral Tissue Engineering Applications</i></p> <p>Spiral Grinding Artikulasi Lampiran Bersepadu - TCG8 (ISGAA)</p> <p><i>Integrated Spiral Grinding Articulated Attachment-TCG8 (ISGAA)</i></p> <p>Bio Gas Asli dari Kumbahan Kilang Minyak Sawit (POME)</p> <p><i>Bio Natural Gas from Palm Oil Mill Effluent (POME)</i></p> <p>Komposit Pengandung Tekanan Jenis-3 untuk Aplikasi Tekanan Tinggi</p> <p><i>Composite Pressure Vessel Type-3 for High Pressure Application</i></p> <p>Bateri Ion "Economically Feasible Sodium" untuk Large-Scale "Stationary Energy Storage" berskala besar</p> <p><i>Economically Feasible Sodium Ion Battery for Large-Scale Stationary Energy Storage</i></p> <p>Anugerah Khas Perak - reka bentuk booth terbaik</p> <p><i>Special Award Silver – Best Booth Design</i></p>	
<p>Ekspo Teknologi Malaysia 2014</p> <p><i>Malaysia Technology Expo 2014</i></p>	<p>Emas MTE &amp; Anugerah Khas Juri - Operasi Pemeriksaan, dan Sistem Visi QC Bersepadu dalam talian, untuk Alat Multi Orientasi dan pemotong Gurinda</p> <p><i>MTE Gold &amp; Special Jury Award - Integrated Online Operation, Inspection and QC Vision System for Multi Orientation of Tool and Cutter Grinder (10<sup>2</sup>IQ-TCG8)</i></p>	<p>Pembentuk Pasir Silikon Tempatan untuk "Precision Casting" aloi aluminium dan aloi tembaga</p> <p><i>Local Silica Sand Moulding for Aluminium Alloys and Copper Alloys Precision Casting (TSS)</i></p>	<p>Fabrikasi Komposit C- CU melalui laluan Powder Metallurgy untuk Aplikasi Elektrik &amp; Elektronik (C- CU Composites)</p> <p><i>Fabrication of C-CU Composites via Powder Metallurgy Route for Electrical &amp; Electronic Applications (C-CU Composites)</i></p>
<p>Bio Asia</p>		<p>Sistem Pemantauan Ammonium bagi Industri Akuakultur Lestari</p> <p><i>Ammonium Monitoring System for Sustainable Aquaculture Industry</i></p>	<p>Bio Gas Asli ( BioNG ) loji demo.</p> <p><i>Bio Natural Gas (BioNG) Demo Plant</i></p>

## PENCAPAIAN 2014

### Penyelidikan & Teknologi

Bahagian Penyelidikan & Inovasi Teknologi SIRIM Berhad telah mendapat 15 projek yang kesemuanya berjumlah RM17.6 juta pada 2014. Projek berkenaan termasuklah 10 Science Fund, 3 Techno Fund, 1 DSTIN, 1 FRGS untuk flagship Tenaga dan Alam Sekitar (11 projek) dan Teknologi Perubatan (empat projek).

Sepuluh teknologi baru telah dibangunkan sepanjang tahun yang dikaji, iaitu:

- Bahan rujukan bagi Standard Filter
- Analisa logam tercemar dalam beras
- Teknologi Supercapacitor

## ACHIEVEMENTS 2014

### Research & Technology

*SIRIM Berhad's Research & Technology Innovation Division has secured 15 projects amounting to RM17.6 million in 2014. The projects include 10 Science Fund, 3 Techno Fund, 1 DSTIN, 1 FRGS for the Energy and Environment Flagship (11 projects) and Medical Technology (four projects).*

*Ten new technologies were developed throughout the year under the review, namely:*

- *Reference material for Standard Filter*
- *Analysis of metal contaminants in rice*
- *Supercapacitor Technology*



Perdana Menteri YAB Dato' Sri Najib Tun Abdul Razak menyaksikan upacara menandatangani MoU antara SIRIM Berhad dan Fraunhofer Gessellschaft pada 2 Dis 2014, di Putrajaya.

*Prime Minister YAB Dato' Sri Najib Tun Abdul Razak witnessed the signing of an MoU between SIRIM Berhad and Fraunhofer Gessellschaft on 2 Dec 2014, in Putrajaya.*

- Penggunaan Teknologi LED
- Penentukuran termometer klinikal
- Produk Kosmetik berasaskan Ekstrak Rumpai Laut
- Analisis kandungan lembapan dalam beras dengan kaedah oven
- analisis kandungan lembapan dalam beras dengan kaedah oven bermeter
- Analisis kekotoran dalam campuran gas oleh GC-PDHID
- Perkhidmatan Perundingan Loji Biogas

Sementara itu, SIRIM juga telah berjaya mengkomersilkan sembilan teknologi yang meliputi Produk Pengurusan Luka seperti Luka Permukaan – *ChytoDerm Cream* dan *Chyto Fil*; Kaviti/Luka Dalam – *Hydrogel Sheet* dan *Hydrogel Paste* yang telah dilesenkan kepada Chitoplast Sdn Bhd. Produk penjagaan kulit termasuklah yang menggunakan ekstrak rumpai laut sebagai ramuan aktif turut dikomersilkan seperti *Formulation Liquid Foundation*, *Formulation Day Cream*, *Formulation Night Serum*, *Formulation Toner* dan *Formulation Facial Cleanser*. Produk-produk ini telah dikomersilkan di bawah pelbagai perlesenan kepada Hana Medic Sdn Bhd, Taz Beauty Cosmetic, Mentari Sayang Enterprise dan Excellent Commerce Enterprise.

## PERKHIDMATAN TEKNIKAL

Pada tahun yang dikaji, SIRIM telah memperkenalkan empat SIRIM Standard yang baru iaitu standard yang dibangunkan oleh SIRIM untuk digunakan oleh organisasi (termasuk kerajaan, industri dan orang awam). Persetujuan telah dicapai oleh wakil semua sektor yang mempunyai kepentingan dalam

- *Use of LED Technology*
- *Calibration of clinical thermometer*
- *Seaweed Extract-based Cosmetic Product*
- *Analysis of moisture content in rice by oven method*
- *Analysis of moisture content in rice by moisture method meter*
- *Analysis of impurities in gas mixtures by GC-PDHID*
- *Biogas Plant Consultancy Services*

*Meanwhile, SIRIM also successfully commercialised nine technologies which include Wound Management Products such as Surface Wound – ChytoDerm Cream and Chyto Fil; Cavity/Deep Wound – Hydrogel Sheet and Hydrogel Paste which were licensed to Chitoplast Sdn Bhd. Skin Care Products using seaweed extract as active ingredient were also commercialised namely Formulation Liquid Foundation, Formulation Day Cream, Formulation Night Serum, Formulation Toner and Formulation Facial Cleanser. The products were commercialised under multiple licensing to Hana Medic Sdn Bhd, Taz Beauty Cosmetic, Mentari Sayang Enterprise and Excellent Commerce Enterprise.*

## TECHNICAL SERVICES

*In the year under review, SIRIM has introduced four new SIRIM Standards, which are Standards developed by SIRIM for adoption by organisations (including government, industry and general public). Consensus is achieved by representation of all sectors that has interest in the use of the standards.*



Inn'oCraft, sebuah projek yang dibiayai MOSTI bagi membantu usahawan kraf tempatan meningkatkan mutu produk mereka menggunakan teknologi SIRIM, telah dilancarkan pada 21 Feb 2014 oleh Exco Negeri Melaka Datuk Hasan Abd. Rahman yang mewakili Ketua Menteri Melaka.

*Inn'oCraft, a project funded by MOSTI to assist local craft entrepreneurs to improve their products using SIRIM's technologies was launched on 21 Feb 2014 by Melaka State Exco Datuk Hasan Abd. Rahman on behalf of Melaka Chief Minister.*

penggunaan standard itu. Standard Industri dikategorikan kepada: SIRIM Standard, Standard Persatuan dan Standard Organisasi. Empat SIRIM Standard yang baru telah dibangunkan pada 2014 iaitu:

- SIRIM 1:2014, Garis panduan kebersihan tandas masjid dan surau
- SIRIM 2:2014, Garis panduan penarafan kebersihan tandas masjid dan surau
- SIRIM 3:2014, Garis panduan pemasangan dan penjagaan kipas siling
- SIRIM 4:2014, Amalan baik untuk pelaksanaan berulang pengurusan keselamatan

### **Anak Syarikat**

Kumpulan SIRIM menyaksikan penyertaan dua lagi anak syarikat yang baru ke dalam kumpulan itu pada 2014 iaitu SIRIM Measurements Technology Sdn Bhd dan SIRIM Tech Venture Sdn Bhd. Dengan tambahan dua buah anak syarikat itu, Kumpulan SIRIM kini terdiri daripada enam buah anak syarikat termasuklah SIRIM QAS International, SIRIM Training Services, SIRIM Standards Technology dan National Precision Tooling.

*Industry Standards are categorised into: SIRIM Standard, Association Standard and Organisation Standard. Four new SIRIM Standards were developed in 2014, namely:*

- *SIRIM 1:2014, Code of Practice for cleanliness of washroom at prayer rooms & mosques*
- *SIRIM 2:2014, Code of practice for rating of of washroom at prayer rooms & mosques*
- *SIRIM 3:2014, Code of practice for installation and maintenance of ceiling fan*
- *SIRIM4:2014, Good practices in implementing commuting safety management*

### **Subsidiaries**

*SIRIM Group welcomed two new subsidiaries into its fold in 2014 - SIRIM Measurements Technology Sdn Bhd and SIRIM Tech Venture Sdn Bhd. With the two new subsidiaries, the SIRIM Group now consists of six subsidiaries which include SIRIM QAS International, SIRIM Training Services, SIRIM Standards Technology and National Precision Tooling.*





Projek BioNG SIRIM yang diasaskan daripada sisa buangan kilang kelapa sawit telah menerima peruntukan RM10.84 juta daripada DSTIN bagi pembinaan sebuah loji demo di Sabah.

*SIRIM's palm oil mill effluent (POME) BioNG project secured a RM10.84 million funding from DSTIN for the building of a demo plant in Sabah.*



Pasukan penyelidik SIRIM yang memenangi anugerah Emas dan Anugerah Khas Juri pada Malaysia Technology Expo 2014 bagi projek iO<sup>2</sup>iQ-TCG8, iaitu Integrated Online Operation, Inspection and QC Vision System for Multi Orientation of Tool and Cutter Grinder.

*The team of SIRIM researchers that won the Gold and Special Jury Award at the Malaysia Technology Expo 2014 for their project, iO<sup>2</sup>iQ-TCG8, an Integrated Online Operation, Inspection and QC Vision System for Multi Orientation of Tool and Cutter Grinder.*

### Kerjasama Penting

Pada 2 Disember 2014, SIRIM telah menandatangani satu Memorandum Persefahaman (MoU) dengan Fraunhofer Gessellschaft, dari Jerman yang akan membolehkan SIRIM mendapat manfaat daripada rangkaian institusi Fraunhofer untuk meningkatkan penggunaan teknologi di kalangan Perusahaan Kecil dan Sederhana (PKS) dengan penekanan kepada penyelidikan dan perkhidmatan teknikal bersama, pertukaran kakitangan dan maklumat, kajian inovasi strategik, memulakan dan melaksanakan projek R&D untuk menyokong pembangunan syarikat-syarikat serantau serta penganjuran bersama persidangan, bengkel dan seminar.

### Major Collaborations

*On 2 December 2014, SIRIM has signed an Memorandum of Understanding (MoU) with Fraunhofer Gessellschaft, Germany which will enable SIRIM to leverage on Fraunhofer network of Institutes to increase technology uptake of SME with emphasis on joint research and technical services, exchange of personnel and information, strategic innovation studies, initialisation and implementation of R&D projects to support the development of regional enterprises as well as joint organisation of conferences, workshops and seminars.*

# MAJLIS REKABENTUK MALAYSIA

**MALAYSIAN DESIGN COUNCIL**

**MRM**  
MALAYSIA DESIGN  
MAJLIS REKABENTUK MALAYSIA



## **Cabaran Rekabentuk Nasional 2013 (Peringkat Universiti)**

Cabaran Rekabentuk Nasional 2013 (Peringkat Universiti) telah dianjurkan dengan matlamat untuk mencabar para pelajar dari IPT tempatan untuk mencadangkan dan menterjemah idea rekabentuk yang menjurus kepada penyelesaian masalah untuk dimanfaatkan oleh mana-mana agensi kerajaan atau pihak berkuasa tempatan (PBT).

Seramai 20 pemenang telah menerima hadiah yang disampaikan oleh Yang Amat Berhormat Tan Sri Haji Muhyiddin bin Haji Mohd Yassin, Timbalan Perdana Menteri disaksikan oleh YB Dato' Dr Ewon Ebin, Menteri Sains, Teknologi dan Inovasi, serta YBhg Dato' Prof. Dr Ahmad Haji Zainuddin, Pengerusi, Majlis Rekabentuk Malaysia.

## **National University Design Challenge (NUDC) 2013**

*The National University Design Challenge 2013 was initiated to bring forth the talent of our local students in the area of innovative design. The participants has been challenged to propose an innovative ideas to enhance the quality of public service offered by government agencies.*

*In a memorable event held in January 2014, a total of 20 design students received their awards from YAB Tan Sri Haji Muhyiddin bin Haji Mohd Yassin, Deputy Prime Minister, together with YB Dato' Dr Ewon Ebin, Minister of Science, Technology and Innovation (MOSTI) and YBhg Dato' Prof. Dr Ahmad Haji Zainuddin, Chairman of Malaysia Design Council.*



Sesi penilaian Malaysia Good Design Mark di kilang

*Evaluation session Malaysia Good Design Mark at the factory*

### Malaysia Good Design Mark 2013

Pada April 2014, satu majlis penyampaian pengiktirafan 'Malaysia Good Design Mark' (MGDM) 2013 kepada industri tempatan yang berjaya mengeluarkan produk dengan rekaan menarik, inovatif dan berkualiti tinggi.

Kesemua pengiktirafan disampaikan oleh Y.B. Datuk Dr. Ewon Ebin, Menteri Sains, Teknologi dan Inovasi (MOSTI) yang menyaksikan sejumlah 23 produk daripada 21 buah syarikat berjaya menepati piawaian penilaian rekabentuk sepertimana yang ditetapkan.

### Malaysia Good Design Mark 2013

*In April 2014, a presentation of the recognition of 'Malaysia Good Design Mark' (MGDM) 2013 to local industry succeeded in issuing products with attractive, innovative design and high quality.*

*All recognition presented by Y.B. Datuk Dr. Ebin, Minister of Science, Technology and Innovation (MOSTI) which saw a total of 23 products from 21 other companies managed to design evaluation standards as may be required.*



YB Datuk Dr Ewon Ebin, Menteri Sains, Teknologi dan Inovasi bersama-sama YBhg Dato' Prof. Ahmad Haji Zainuddin, Pengerusi MRM dan YBhg Dato' Dr Mohamad Azhar Yahaya, TKSU (Dasar) MOSTI dan salah seorang penerima MGDM.

*YB Datuk Dr Ewon Ebin, Minister Science, Technology & Innovation together with YBhg Dato' Prof. Ahamd Haji Zainuddin, MRM Chairman and YBhg Dato' Dr Mohamad Azhar Yahaya, TKSU (Dasar) MOSTI and one of the MGDM's recipient.*



YB Datuk Dr Ewon Ebin, Menteri Sains, Teknologi dan Inovasi ketika menyampaikan ucapan di Majlis Penyampaian Malaysia Good Design Mark.

*YB Datuk Dr Ewon Ebin, Minister Science, Technology & Innovation delivering a speech at the Malaysia Good Design Mark Presentation Ceremony.*



Presiden, Institute of Landscape Architect Malaysia (ILAM), sedang menyampaikan ucapan aluan.  
*President of Institute of Landscape Architect Malaysia (ILAM) presenting the welcome speech.*



Para presiden yang mewakili persatuan rekabentuk ILAM, PAM, wREGA, PEREKA dan MIID bergambar kenangan bersama YBhg Dato' Prof. Ahmad Haji Zainuddin, Pengerusi MRM dan YBhg Dato' Dr Mohd. Azhar Yahaya, TKSU (Dasar) MOSTI selepas dari majlis perasmian.  
*Photography session with YBhg Dato' Prof Ahmad Haji Zainuddin, MRM Chairman, YBhg Dato' Dr Mohd. Azhar Yahaya, TKSU (Dasar) MOSTI and all the Presidents presenting design association of ILAM, PAM, wREGA, PEREKA and MIID after the opening ceremony.*

### Malaysia Design Festival (MADE)

Buat pertama kalinya, satu festival rekabentuk telah dianjurkan pada September 2014 di Perpustakaan Kuala Lumpur. Di dalam festival selama dua hari itu, *Malaysian Institute of Interior Designers* (MIID), Persatuan Arkitek Malaysia (PAM), *Institute of Landscape Architects Malaysia* (ILAM), Wakaf Reka Grafik Malaysia (wREGA) dan Persatuan Pereka Perindustrian Malaysia (PEREKA), telah bekerjasama dengan MRM untuk meraikan kreativiti dan pereka di Malaysia.

Selain pameran pencapaian setiap persatuan, Festival ini juga dimeriahkan dengan aktiviti-aktiviti rekabentuk dan ceramah rekabentuk yang dibuka kepada para pelajar, pereka profesional, industri, agensi kerajaan dan orang ramai.

### MADE Festival

*For the first time in Malaysia, MRM joins hands with five other design associations in the country in organising the inaugural Malaysia Design Festival or MADE 2014. Set to take place at the Kuala Lumpur Library in September, the much awaited design festival is a collaborative effort with the Malaysian Institute of Interior Designers (MIID), Persatuan Arkitek Malaysia (PAM), Institute of Landscape Architect (ILAM), Wakaf Reka Grafik Malaysia (wREGA) and Persatuan Pereka Perindustrian Malaysia (PEREKA).*

*MADE Festival 2014 has brought together various designers from diverse creative areas into one comprehensive programme festival include talks on design, creative and innovative ideas showcase, experimental projects, design demonstration and much more.*



Lawatan ke tapak pameran MADE Festival / Visits to the MADE Festival Exhibition



Design talk oleh Encik William Harald Wong, pereka profesional dari bidang rekabentuk grafik / Design talk with Mr. William Harald Wong, professional designer from graphic design field.



Sesi taklimat oleh Saudara Zafri Merican, Pengarah Urusan Ideation Sdn. Bhd. / *Briefing session by Mr. Zafri Merican, Managing Director of Ideation Sdn Bhd.*



Para peserta projek sedang menyiapkan lakaran teknikal perabot mereka. / *The project participants preparing technical drawings of their furniture.*



Para pereka dari Korea dan Malaysia serius membincangkan idea bagi membangunkan rekabentuk perabot yang menepati aspirasi Ideation Sdn. Bhd. / *The participants from Korea and Malaysia seriously discussing the idea of developing a furniture design that meets the aspirations of Ideation Sdn Bhd.*

### Asia Design Sharing Furniture Project

Hasil dari kerjasama erat di antara Majlis Rekabentuk Malaysia (MRM) dan Korea Institute of Design Promotion (KIDP), satu projek kerjasama di bidang reka bentuk perabot telah dianjurkan selama seminggu di Menara MATRADE pada November 2014.

Melalui projek ini, seramai 20 pereka dari Korea dan Malaysia telah bekerjasama untuk mencadangkan reka bentuk perabot berdasarkan kepada kriteria yang ditetapkan oleh Ideation Sdn. Bhd., sebuah syarikat perabot tempatan yang akan menghasilkan untuk kegunaan di hostel-hostel universiti tempatan.

### Asia Design Sharing Furniture Project

*Asia Design Sharing Furniture Project is a collaboration project between Malaysia Design Council (MRM), Korea Institute of Design Promotion (KIDP) and Ideation Sdn. Bhd.*

*Held in November at Menara MATRADE, this one week project challenged 20 Malaysian and Korean designers to propose a practical, innovative and commercial viable furniture which will be used in Malaysian university dormitories.*



Sembang santai bersama Saudara Zuljar Jaafar, Pengurus Rekabentuk di MRM.

*Casual chat with Mr. Zuljar Jaafar, Design Manager of MRM.*

Saudara Quzailan Abdul Rahman dari MRM memberikan tunjuk ajar ketika bengkel diadakan.

*Mr. Quzailan Abdul Rahman of MRM providing guidance during the workshop.*



### Bengkel Rekabentuk Malaysia

MRM telah menganjurkan pelbagai bengkel reka bentuk dengan kerjasama agensi kerajaan dan swasta. Antara program yang aktif sepanjang tahun adalah MRM di Penjara di mana MRM dengan kerjasama Jabatan Penjara Malaysia telah mengadakan bengkel pemantapan kemahiran reka bentuk kepada para banduan di beberapa penjara di Malaysia.

### Design Workshop

*MRM had organised various design workshops with the collaboration of both the government and private agencies. One of the most successful program is the MRM @ Penjara workshop where MRM helps to increase design awareness and enhance design skills among prisoners.*



Penyertaan MRM di Asia Design Network Conference di Gwangju, Korea / MRM participants at the Asia Design Network Conference held in Gwangju, Korea.

### Penyertaan antarabangsa

Sebagai salah sebuah negara anggota *Asia Design Sharing Council Meeting*, *International Council of Societies of Industrial Design (ICSID)* dan *International Council of Design (icoD)*, MRM memainkan peranan yang aktif untuk mempromosi rekabentuk serta pereka tempatan menerusi platform antarabangsa seperti pameran, forum dan mesyuarat.

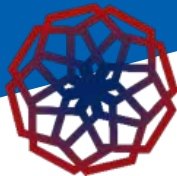
### International Participations

*As one of the Asia Design Sharing Council Meeting members, International Council of Societies of Industrial Design (ICSID) and International Council of Design (icoD), MRM plays an active role in promoting Malaysian design and designers in various international platforms including Design Expo, meetings and forums.*



Sesi networking MRM bersama wakil-wakil dari Gwangju Design Center dan Korea Institute of Design Promotion  
 MRM networking session with the representatives from Gwangju Design Centre and Korea Institute of Design Promotion.

# NANOMALAYSIA BERHAD



## NANOMALAYSIA™

### Pencapaian

#### Pelancaran Pelan Tindakan Graphene Kebangsaan (NGAP 2020), 3hb Julai 2014

Menteri di Jabatan Perdana Menteri, Dato' Sri Idris Jala telah melancarkan Pelan Tindakan Graphene Kebangsaan 2020 (NGAP 2020) yang dibangunkan bersama oleh NanoMalaysia Berhad, *Performance Management and Delivery Unit* (PEMANDU) dan Agensi Inovasi Malaysia (AIM).

Pelancaran tersebut turut dihadiri oleh Menteri Perdagangan Antarabangsa dan Industri, Dato' Sri Mustapa Mohamad dan Timbalan Menteri Sains, Teknologi dan Inovasi, Datuk Dr. Abu Bakar Mohamad Diah. Kerjasama strategik antara NanoMalaysia, PEMANDU, dan AIM telah mewujudkan sinergi dinamik bagi mengeksplorasikan teknologi terbaharu bagi mengukuhkan industri Malaysia dan menjadikan Malaysia sebagai pemain global dalam bidang teknologi.



Menteri di Jabatan Perdana Menteri, YB Dato' Sri Idris Jala melancarkan NGAP 2020 yang dibangunkan bersama oleh NanoMalaysia Berhad, PEMANDU dan Agensi Inovasi Malaysia.

YB Dato' Sri Idris Jala, Minister in Prime Minister's Department launched the NGAP 2020

### Achievements

#### Launch of National Graphene Action Plan 2020 (NGAP 2020), 3 July 2014

Minister in the Prime Minister's Department, Dato' Sri Idris Jala has launched the National Graphene Action Plan 2020 (NGAP 2020) jointly developed by NanoMalaysia Berhad, *Performance Management and Delivery Unit* (PEMANDU) and Agensi Inovasi Malaysia (AIM).

The launch was witnessed by the Minister of International Trade and Industry, Dato' Sri Mustapa Mohamad, and the Deputy Minister of Science, Technology and Innovation, Datuk Dr. Abu Bakar Mohamad Diah. This strategic alliance between NanoMalaysia, PEMANDU, and AIM has undoubtedly created a dynamic synergy to exploit newly emerging technologies, strengthen Malaysian's industries, and to establish Malaysia

as a global player in technologically-driven areas of economic importance.

### **Innovating Malaysia Conference 2014 Prelude, 26hb Ogos 2014**

Agensi Inovasi Malaysia (AIM) telah menganjurkan *Innovating Malaysia Conference 2014 Prelude* yang bertemakan "Nanotechnology Industrial Adoption Through the National Graphene Action Plan (NGAP2020)" dengan kerjasama NanoMalaysia Berhad. Forum ini merupakan platform untuk membentuk perkongsian strategik antara inovator, penyelidik, pemimpin industri, usahawan dan syarikat-syarikat awam dan swasta.

### **Lux Research – NanoMalaysia Forum 2014, 27hb Oktober 2014**

NanoMalaysia dan Lux Research telah menganjurkan *Lux Research – NanoMalaysia Forum 2014* yang bertemakan "Innovation for Sustainable Economic Growth through Advanced Materials" pada 27 Oktober 2014 bertujuan untuk menyediakan platform kepada peserta untuk belajar tentang trend terkini dalam inovasi bahan termaju. Dua upacara pertukaran dokumen MoU telah diadakan antara FGV Cambridge Nanosystems bersama-sama rakan kongsi.

Lebih daripada 100 peserta dari pelbagai industri telah menghadiri forum tersebut. Lebih daripada 20 syarikat telah mengambil bahagian dalam business matching 30 minit bersama pakar-pakar teknologi Lux Research dan NanoMalaysia.



**Innovating Malaysia Conference 2014 Prelude yang bertemakan Penggunaan Industri**

*Innovating Malaysia Conference 2014 Prelude  
"Nanotechnology Industrial Adoption Through the National Graphene  
Action Plan (NGAP2020)"*



**Sesi bergambar urusetia NanoMalaysia Berhad serta Lux Research Inc**  
*Group photo session with YB Datuk Dr. Abu Bakar Mohamad Diah and secretariats.*



**Sesi bergambar bersama Timbalan Menteri Sains, Teknologi dan Inovasi, YB Datuk Dr. Abu Bakar Mohamad Diah, NanoMalaysia Berhad, Felda Global Ventures dan rakan-rakan kongsi.**

*Group photo session with YB Datuk Dr. Abu Bakar Mohamad Diah, NanoMalaysia Berhad, Felda Global Ventures and partner*

### **Innovating Malaysia Conference 2014 Prelude, 26 August 2014**

Agensi Inovasi Malaysia (AIM) hosted the *Innovating Malaysia Conference 2014 (IMC 2014) Prelude* themed "Nanotechnology Industrial Adoption Through the National Graphene Action Plan (NGAP2020)" in partnership with NanoMalaysia Berhad. This forum is a networking channel for sharing and forming strategic partnerships amongst innovators, thought leaders, entrepreneurs as well as public and private enterprise.

### **Lux Research – NanoMalaysia Forum 2014, 27 October 2014**

NanoMalaysia and Lux Research co-organised the *Lux Research-NanoMalaysia Forum 2014* themed "Innovation for Sustainable Economic Growth through Advanced Materials" on the 27th October which gave participants an ideal opportunity to learn about the latest innovation trends in Advanced Materials. Two document exchange ceremonies were held between FGV Cambridge Nanosystems with its partners.

More than 100 top level participants from various industries attended the forum which was by invitation only. More than 20 companies had participated in the one-on-one 30 minute consultation with Lux Research's and NanoMalaysia's technology experts on site.



## Program Kerjasama Penyelidikan NanoMalaysia-IBM Almaden, September 2014 – Mac 2015

NanoMalaysia dan International Business Machines Corporation (IBM), telah bekerjasama selama hampir 2 tahun dalam Program Kerjasama NanoMalaysia-IBM Research. Projek ini dijalankan di Pusat Penyelidikan IBM, Almaden, Amerika Syarikat dan ditaja sepenuhnya oleh Kementerian Pendidikan Malaysia (MOE). Program ini melibatkan tiga projek penyelidikan dan pembangunan dengan teknologi latar belakang yang sama iaitu *Nanogel Star Polymer Nutraceutical Delivery Research*; *Nanogel Star Polymer Anti-Microbial Research*; dan *Star Polymer Simulation Research*.

Sehingga kini, NanoMalaysia telah menghantar seramai 14 orang penyelidik dari IPTA-IPTA seluruh Negara melalui tiga (3) kumpulan berasingan, dan setiap kumpulan berada di pusat penyelidikan tersebut selama enam (6) bulan. Setakat ini, empat (4) paten dan empat (4) manuskrip telah dikemukakan untuk diterbitkan melalui program ini.



Sesi pertukaran plak antara NanoMalaysia Berhad dan IBM disaksikan oleh YAB Dato' Sri Najib Tun Razak, Perdana Menteri Malaysia.

*Plaque exchange between NanoMalaysia and IBM witnessed by the Right Honourable Prime Minister of Malaysia, Dato' Sri Najib Tun Razak.*



Program Kerjasama Penyelidikan NanoMalaysia-IBM Almaden

*Collaboration between NanoMalaysia Berhad and IBM Almaden*

## Collaboration between NanoMalaysia Berhad and IBM Almaden, September 2014 – March 2015

NanoMalaysia and the International Business Machine Corporation ("IBM"), has been collaborating for almost 2 years in the NanoMalaysia-IBM Research Collaboration Programme. This project is conducted at the IBM Research Centre, Almaden, USA and is currently fully sponsored by the Ministry of Education (MOE), Malaysia. The programme involves three researches and development projects with the same background technology namely the *Nanogel Star Polymer (NSP) in Antimicrobial Coating Research*; *Drug/Nutraceutical Encapsulation and Delivery Research*; and *Star Polymer Simulation Research*.

To date, three batches of researchers with a total number of 14 researchers have been sent to the IBM Research Centre for the program and 11 of them have returned and to continue the program in Malaysia. After almost two years of research work conducted, four foreground patents are currently in the process of filing and four manuscripts will be submitted for publication by Quarter 1, 2015.



# MALAYSIAN TECHNOLOGY DEVELOPMENT CORPORATION (MTDC)



*Majlis Penyampaian Mock Cheque  
MTDC Innovation Book Prize kepada  
universiti semasa Majlis Perasmian  
MTDC Technology Commercialisation  
Conference 2014*

*Mock cheque presentation ceremony  
for MTDC Innovation Book Prize to  
the universities during the Launching  
Ceremony of MTDC Technology  
Commercialisation Conference 2014*

## LAPORAN PROGRAM DAN AKTIVITI 2014

## PROGRAMME AND ACTIVITIES REPORT FOR 2014

### Program Kerjasama bersama MOSTI – Tahun Pengkomersilan MOSTI (MCY) 2014

- Majlis Pelancaran Tahun Pengkomersilan MOSTI (MCY) 2014
- Seminar Pepadanan Perniagaan & Pasaran Teknologi
- Karnival Pendidikan, Kerjaya & Inovasi Negeri Melaka
- Persidangan & Pameran Pengkomersilan MOSTI 2014 (MCCE)
- NICE 2014

### 1. Collaborative Programme with MOSTI – MOSTI Commercialisation Year (MCY) 2014

- MCY 2014 Launching
- Business Matching & Technology Marketplace Seminar
- Malacca Education, Career & Innovation Carnival
- MOSTI Commercialisation Conference & Exhibition 2014 (MCCE)
- NICE 2014



YB Timbalan Menteri MOSTI melawat booth MTDC semasa Majlis Pelancaran Karnival Pendidikan, Kerjaya & Inovasi Negeri Melaka  
 YB Deputy Minister of MOSTI has visited MTDC booth during the Karnival Pendidikan, Kerjaya & Inovasi Negeri Melaka Launching Ceremony



Menteri Sains & Teknologi Indonesia diiringi YB Menteri MOSTI dan wakil delegasi dari negara-negara ASEAN untuk melawat booth pameran MTDC  
 Minister of Science & Technology Indonesia was accompanied by YB Minister of MOSTI and the delegates from ASEAN countries to visit MTDC exhibition booth

MTDC telah mengambil bahagian dalam pelbagai program MCY anjuran MOSTI dan agensi-agensinya pada tahun 2014. Semasa Majlis Pelancaran Tahun Pengkomersilan MOSTI (MCY) 2014, YB Menteri MOSTI telah menyampaikan sebanyak enam (6) *mock cheque* kepada syarikat-syarikat penerima geran MTDC. Di bawah MCY, MTDC juga turut bekerjasama dengan SIRIM untuk menganjurkan Seminar Pepadanan Perniagaan & Pasaran Teknologi yang merupakan sebuah program pepadanan perniagaan yang melibatkan Industri, Kerajaan (Agensi) dan Universiti. Selain daripada itu, sebanyak tujuh produk daripada syarikat penerima dana MTDC juga telah dilancarkan di dalam beberapa acara berasingan di bawah inisiatif MCY 2014.

### ASEAN STI Exhibition Bogor, Indonesia

Pameran ini telah diadakan di Pusat Antarabangsa IPB, Bogor, Indonesia pada 22-26 Ogos 2014. Objektif utama program ini adalah untuk mempamerkan pencapaian negara-negara ASEAN dalam bidang Sains, Teknologi & Inovasi (STI).

MTDC participated in various MCY events organised by MOSTI and supported by all its agencies in 2014. During the MCY 2014 launching ceremony, YB Minister of MOSTI presented six (6) mock cheques to MTDC's grant recipient companies. As part of the MCY 2014 event, MTDC and SIRIM Berhad collaborated to organise Business Matching & Technology Marketplace Seminar as a business matching programme involving Industry, Government (agency) and University. Other than that, seven MTDC's grant recipient products were also launched under the MCY 2014 initiative.

### ASEAN STI Exhibition Bogor, Indonesia

The exhibition was held in IPB International Centre, Bogor, Indonesia on 22-26 August 2014. The objective of this event was to showcase the achievement of ASEAN countries in Science, Technology & Innovation (STI).

MTDC mempamerkan lapan (8) produk syarikat penerima dana MTDC yang mempunyai potensi untuk di pasarkan di luar negara. Syarikat-syarikat tersebut terdiri daripada syarikat berasaskan teknologi dalam bidang makanan, air dan tenaga.

## 2. MTCP-MTDC *Technology Commercialisation Workshop*

MTCP-MTDC *Technology Commercialisation Workshop* adalah program latihan anjuran MTDC dan Malaysian Technical Cooperation Programme (MTCP) di bawah Kementerian Luar Negeri, Malaysia. Program ini direka bagi meningkatkan pemahaman berkenaan pemindahan teknologi / pelesenan dalam kalangan penyelidik, ahli-ahli akademik, usahawan dan juga peserta industri. Pada tahun 2014, sebanyak dua (2) bengkel telah berjaya dijalankan melibatkan penyertaan daripada negara-negara Mesir dan Afrika.

*MTDC participated as an exhibitor under MOSTI pavilion to promote and showcase eight (8) MTDC grant recipient products that have potential in oversea market. The technology-based companies are involved in manufacturing of food, water and energy.*

## 1. *MTCP-MTDC Technology Commercialisation Workshop*

*The MTCP-MTDC Technology Commercialisation Workshop is a training programme jointly-organised by MTDC and Malaysian Technical Cooperation Programme (MTCP) under the Ministry of Foreign Affairs, Malaysia. The programme is designed to increase understanding of technology transfer/licensing among researchers, academicians, aspiring entrepreneurs and industry players. In 2014, two workshops were successfully conducted with the participation from Egyptian and African countries.*



Sesi bergambar oleh peserta MTCP-MTDC Technology Commercialisation Workshop dari Mesir  
A group photo session for MTCP-MTDC Technology Commercialisation Workshop Egyptian Participant



CEO MTDC memberi penerangan berkenaan MTDC kepada delegasi dari Sckolovo Technopark, Rusia  
 MTDC CEO give a briefing about MTDC to the delegate from Sckolovo Technopark, Rusia



Sesi bergambar bersama delegasi dari Universiti Chuka, Afrika Selatan  
 A group photo session with the delegate from Chuka University, South Africa

### Program Lawatan Rasmi ke MTDC

Sepanjang 2014, MTDC telah menerima sebanyak sembilan (9) lawatan daripada organisasi / institusi tempatan dan luar negara. Kebanyakan pelawat adalah terdiri daripada kakitangan universiti, pusat inkubator serta pusat pemindahan teknologi. Tujuan utama lawatan tersebut adalah untuk meneroka peluang kerjasama yang lebih luas di antara kedua-dua belah pihak.

### MTDC Technology Commercialisation Conference (MTCC) 2014

MTDC telah menganjur MTDC Technology Commercialisation Conference 2014 pada 11 dan 12 November 2014 di Hotel Hilton, Kuala Lumpur. Seramai 700 peserta tempatan dan antarabangsa menghadiri persidangan yang bertemakan, 'Strategic Partnerships – Time for a Rethink' tersebut. Peserta-peserta terdiri daripada syarikat-syarikat di dalam ekosistem MTDC, penyelidik universiti dan pencipta, usahawan dan usahawan tekno, agensi pembiayaan dan pegawai-pegawai kerajaan. Persidangan tahunan tersebut menyediakan satu platform yang terbaik kepada ahli-ahli akademik, usahawan dan pembuat dasar untuk membincangkan isu-isu mengenai pengkomersilan dan perkara yang berkaitan serta mewujudkan potensi kerjasama antara semua pihak.

### Working Visit Program to MTDC

Throughout 2014, MTDC received nine (9) visits from organizations/institutions of local and various countries. Most of the visitors are from university, incubation and technology transfer centres. The purpose of the visits is to explore the collaborative opportunities between the two parties.

### MTDC Technology Commercialisation Conference (MTCC) 2014

The MTDC Technology Commercialisation Conference 2014 was organised successfully on 11 and 12 November 2014 at Hilton Hotel, Kuala Lumpur. With the theme, 'Strategic Partnerships – Time for a Rethink', the conference was attended by 700 local and international participants. They included companies within the MTDC ecosystem, university researchers and inventors, entrepreneurs and technopreneurs, funding agencies and government officials. The annual conference provides an excellent platform for academia, entrepreneurs and policy-makers to discuss issues on commercialisation and its ecosystem as well as initiate potential collaborations.



# LAPORAN KLUSTER ANGKASA, LAUT & ATMOSFERA

- ◆ Bahagian Angkasa, Laut dan Atmosfera (S2S)
- ◆ Agensi Angkasa Negara
- ◆ Jabatan Meteorologi Malaysia
- ◆ Agensi Remote Sensing Malaysia
- ◆ Direktorat Oseanografi Kebangsaan
- ◆ Yayasan Angkasawan Malaysia
- ◆ Yayasan Penyelidikan Antartika Sultan Mizan

CLUSTER  
REPORT  
SPACE, SEA &  
ATMOSPHERE

- ◆ *Sea To Space Division (S2S)*
- ◆ *National Space Agency*
- ◆ *Malaysian Meteorological Department*
- ◆ *Malaysian Remote Sensing Agency*
- ◆ *National Oceanography Directorate*
- ◆ *Malaysia Astronaut Foundation*
- ◆ *Sultan Mizan Antarctica Research Foundation*

# BAHAGIAN ANGKASA, LAUT DAN ATMOSFERA (S2S) *SEA TO SPACE DIVISION (S2S)*



Peserta Dan Urus Setia Retreat Sektor  
Sains Mosti 2014

Participants And Secretariat of MOSTI  
Science Sector Retreat 2014

## 1. PROGRAM RETREAT SEKTOR SAINS MOSTI 2014

Bahagian Angkasa, Laut dan Atmosfera (S2S) telah menganjurkan satu program Retreat Sektor Sains MOSTI 2014 bersama Ketua Kluster/Bahagian/Jabatan/Agensi bagi tujuan membincangkan dan menetapkan halatuju sektor sains pada tahun 2015. Retreat Sektor Sains ini telah berjaya dijalankan pada 14 hingga 16 November 2014 bertempat di Concorde Inn, KLIA.

Antara perkara-perkara yang telah dibincang dan diperhalusi semasa dalam Retreat Sektor Sains ini adalah merangkumi:

- i. Fungsi dan Hala Tuju oleh Bahagian Dana;
- ii. Projek R&D di bawah Pemantauan NOD oleh Bahagian NOD;
- iii. Pembentangan Mengenai Dasar Nanoteknologi Kebangsaan dan Hala Tuju NND oleh Bahagian NND;
- iv. Inisiatif *Public Private Research Network* (PPRN) oleh MTDC;
- v. Penjenamaan Semula SIRIM oleh SIRIM;
- vi. Perbincangan Penggabungan ARSM; dan ANGKASA;
- vii. Hala tuju Strategik Yayasan Angkasawan Malaysia;
- viii. Perbincangan Berkaitan Produk Inovasi Berimpak Tinggi; dan
- ix. Pembentangan Program-Program Utama oleh Setiap Kluster di Bawah Sektor Sains.

## 1. MOSTI SCIENCE SECTOR RETREAT 2014

*The Sea To Space Division (S2S) had organised the MOSTI Science Sector Retreat 2014 programme with heads of cluster/division/departments/agencies to discuss, deliberate and set the direction of the science sector for the year 2015. The Science Sector Retreat was conducted beginning 14th to 16th November 2014 at Concorde Inn, KLIA.*

*Among the matters discussed and deliberated on during the Science Sector Retreat are as follows:*

- i. Functions & Direction of the Fund Division;*
- ii. Monitoring of R&D Projects under NOD;*
- iii. Presentation on the National Nanotechnology Policy and Direction of NND;*
- iv. Public Private Research Network (PPRN) Initiative by MTDC;*
- v. SIRIM Rebranding;*
- vi. Discussion on Merger Proposal of ARSM and ANGKASA;*
- vii. Strategic Direction of Yayasan Angkasawan Malaysia;*
- viii. Discussion on High Impact Innovative Products; and*
- ix. Presentation on Main Programmes by clusters under the Science Sector.*





Sesi Perbincangan  
*Discussion Session*

Retreat Sektor Sains ini menjadi medan pertemuan terbaik khususnya dalam merangka perancangan bagi mempertingkatkan sumbangan kluster/bahagian/agensi khususnya dalam mengarusperdanakan STI. Di samping itu juga, program ini membantu untuk menyeragamkan fungsi dan aktiviti di setiap kluster/bahagian/agensi bagi mendukung hala tuju sektor sains MOSTI bagi tahun 2015 berdasarkan input bernas dan perkongsian idea semua peserta.

The Science Sector Retreat was an excellent programme to plan and to increase the contribution of each cluster/division/agency especially in mainstreaming STI. This programme also helped to streamline the functions & activities at every cluster/division/agency to support the direction of MOSTI's science sector, based on valuable inputs and sharing of ideas among the participants of this programme.



Sesi Perbincangan / Soal Jawab  
*Discussion / Q&A Session*



Sesi Pembentangan  
*Presentation Session*

# AGENCI ANGKASA NEGARA

## NATIONAL SPACE AGENCY



### APLIKASI REMS DIKTIRAF ANTARABANGSA

REMS merupakan sebuah projek perintis yang menggunakan Sistem Penentuan kedudukan Sejagat (GPS) bagi perkhidmatan Perubatan Kecemasan (EMS) di Malaysia. Aplikasi ini akan mengesan kedudukan pengguna dengan hanya menekan butang (SOS) pada peranti pengesanan kedudukan (GPS) apabila berlaku kecemasan berkenaan kesihatan pengguna. Seterusnya lokasi kecemasan pengguna tersebut akan dipaparkan pada peta digital di pusat kawalan EMS yang akan menghantar ambulan ke lokasi kecemasan sebelum diberi rawatan kecemasan dan membawa pesakit ke hospital.

REMS ini dibangunkan dengan menggunakan dana Program Inovasi Inklusif 2013 MOSTI bersempena dengan Program Gerakan Inovasi Nasional 2013-Pembudayaan Sains, Teknologi dan Inovasi oleh Kementerian Sains, Teknologi dan Inovasi (MOSTI) dan juga MOSTI Commercialization Year 2014 (MCY2014).

Antara anugerah yang dimenangi adalah :

- Pingat Emas, *National Innovation and Invention Competition Through Exhibition (iCompex'2014)* 24-25 Mac 2014, Jitra, Kedah.
- Pingat Emas, *2nd International Innovation, Design and Articulation (i-IDEA 2014)*, 16-19 September 2014, Langkawi, Kedah.

### REMS INTERNATIONALLY RECOGNIZED

*REMS is a project that uses the Global Positioning System (GPS) for the Emergency Medical Service (EMS) in Malaysia. This application will detect the position of the user by simply pressing a button (SOS) at position detection device (GPS) in the event of an emergency regarding the health of consumers. Emergency location next user will be displayed on the digital map in the control center that will send EMS ambulance to the emergency location before being given emergency treatment and bring the patient to the hospital.*

*REMS is developed by using funds in MOSTI Inclusive Innovation Programme 2013 in conjunction with the National Innovation Movement Programme 2013-Culturing Science, Technology and Innovation by the Ministry of Science, Technology and Innovation (MOSTI) and also MOSTI Commercialisation Year 2014 (MCY2014).*

*Achievements :*

- *Gold medal, National Innovation and Invention Competition Through Exhibition (iCompex'2014)* 24-25 Mac 2014, Jitra, Kedah.
- *Gold medal, 2nd International Innovation, Design and Articulation (i-IDEA 2014)*, 16-19 September 2014, Langkawi, Kedah.

## APLIKASI SPACE-BASED MOBILE WORKFORCE

la merupakan sebuah aplikasi yang dibangunkan bagi memudahkan aktiviti-aktiviti pemantauan di lapangan sama ada pekerja mahupun aset dilaksanakan. Aplikasi ini dibangunkan dengan adaptasi bersama teknologi satelit dengan beberapa teknologi terkini yang bersesuaian dengan suasana kerja serta corak kerja sesebuah organisasi.

Projek ini telah diketuai oleh Ketua Pengarah, Agensi Angkasa Negara, iaitu Dr Noodin bin Ahmad dan kos pembangunan projek telah diperolehi dari dana sains (ScienceFund) Kementerian Sains, Teknologi dan Inovasi (MOSTI). Perlaksanaan projek yang bermula pada tahun 2012 ini, bertujuan untuk menyokong penyelidikan yang boleh membawa kepada inovasi produk dan proses untuk pembangunan, pengkomersilan serta menghasilkan pengetahuan saintifik baru di samping mengukuhkan keupayaan penyelidikan Negara.

"Space-based mobile workforce applications" ini di ilhamkan kerana banyak manfaat dan kebaikan.

Antara Anugerah yang dimenangi adalah:

- Pingat emas untuk *National Innovation and Invention Competition Through Exhibition (i-CompEX'14)*, 24- 25 Mac 2014, Jitra, Kedah.
- *Asia Geospatial Excellence Award, Asia Geospatial Forum 2014*, 25-27 November 2014, Jakarta, Indonesia.

## SPACE-BASED MOBILE WORKFORCE APPLICATIONS

*Application "Space-based Mobile Workforce" is an application that was developed to facilitate monitoring activities in the field either employees or assets in place. This application was developed with adaptations with satellite technology with some of the latest technologies that are appropriate to the work environment as well as patterns of work organisation.*

*The project was led by the Director General of the National Space Agency, Dr. Noodin bin Ahmad and project development costs have been obtained funds of Science (science fund) Ministry of Science, Technology and Innovation (MOSTI). Implementation of which began in 2012, is intended to support research that could lead to product and process innovation for development, commercialisation and produce new scientific knowledge as well as strengthen the ability of National research.*

*"Space-based mobile workforce applications" was inspired as many benefits and advantages.*

*Achievements :*

- *Gold medal, National Innovation and Invention Competition Through Exhibition (i-CompEX'14)*, 24- 25 Mac 2014, Jitra, Kedah.
- *Asia Geospatial Excellence Award, Asia Geospatial Forum 2014*, 25-27 November 2014, Jakarta, Indonesia.





Pertandingan Teknologi Pelancar Rocket / Rocket Launcher Technology Competition



### Malaysia Johan Pertandingan Water Rocket Kali Ke 10 Di Peringkat Asia Pasifik

Buat julung kalinya pasukan Malaysia telah diumumkan sebagai Johan Pertandingan Water Rocket kali ke-10 di peringkat Asia Pasifik pada 30 November 2014. Pertandingan yang berlangsung bermula 29 hingga 30 November ini disertai oleh Nor Hafzi Shaharudin (16) dan Muhammad Danial Redzuan (16) dari Kolej Vokasional Slim River (KVSR), Muhammad Saifullah Mohamad Shahrul Annuar (16) dan Luqman Muhamad Rafi (16) dari Maktab Rendah Sains MARA (MRSM) Johor Bharu. Mereka telah menerima sebuah piala, sebuah model roket Jepun, sijil dan model roket satelit.

Pasukan Malaysia merupakan johan Pertandingan Teknologi Pelancaran Teknologi Rocket 2014 yang dianjurkan oleh Agensi Angkasa Negara (ANGKASA), Kementerian Sains Teknologi dan Inovasi, Kementerian Pendidikan Malaysia (KPM) dan Bahagian Pendidikan Menengah, Majlis Amanah Rakyat (MARA) pada September yang lalu.

Kemenangan ini merupakan suatu tanda aras terhadap tahap kecemerlangan pendidikan sains angkasa di Malaysia selaras dengan usaha kerajaan untuk meningkatkan minat pelajar-pelajar terhadap sains angkasa terutamanya dalam membangunkan kemahiran pelajar-pelajar untuk mengaplikasikan pengetahuan sains angkasa yang telah mereka pelajari dalam mereka bentuk serta mengendalikan roket buatan sendiri dengan ketepatan tinggi berbanding dengan negara-negara lain di rantau Asia-Pasifik.

### Malaysia Wins the Water Rocket Competition in the 10th Asia Pacific Level

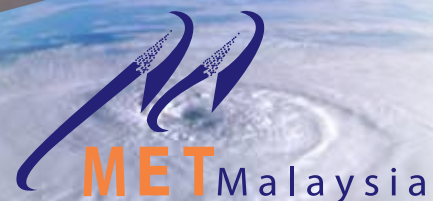
*For the first time, the Malaysian team was announced as winner in the Water Rocket Competition for the 10th time in the Asia Pacific region on 30 November 2014. The tournament was held from 29 to 30 November participated by Nor Hafiz Shaharudin (16) and Muhammad Danial Redzuan (16) of Vocational College Slim River (VSR), Muhammad Saifullah Mohamad Shahrul Annuar (16) and Luqman Mohammed Rafi (16) of Mara Junior Science Colleges (MRSM) Johor Bharu. They received a trophy, a Japanese rocket model and certificate and also a satellite rocket model.*

*The Malaysian team is also the champion of Rocket Launching Technology Competition 2014 last September organised by the National Space Agency (Angkasa), Ministry of Science, Technology and Innovation, Ministry of Education (MOE) and the Secondary Education Division, Majlis Amanah Rakyat (MARA).*

*This victory is a benchmark for space science education excellence in line with the government's efforts to increase the interest of students in space science, particularly in developing the skills of students on the application of space science knowledge, in designing and controlling homemade rockets with high accuracy compared to other countries in the Asia-Pacific region.*

# JABATAN METEOROLOGI MALAYSIA

## MALYSIAN METEOROLOGICAL DEPARTMENT



### ANUGERAH GEOSPATIAL KEBANGSAAN

- MetMalaysia telah menerima Anugerah Kecemerlangan Geospacial melalui projek *Fire Danger Rating System (FDRS)*. Sistem FDRS digunakan dalam operasi pemantauan musim kering dan penghasilan indeks kawasan mudah terbakar. Majlis Anugerah Geospacial Kebangsaan ke-6 (NGIS-6) telah berlangsung pada 17 Mac 2014 bertempat di Pusat Konvensyen Antarabangsa Putrajaya (PICC).

### ANUGERAH PENSIJILAN SISTEM PENGURUSAN KESELAMATAN MAKLUMAT (ISMS)

- MetMalaysia telah berjaya mencapai tahap pengurusan kualiti yang menepati piawai ISO/IEC 27001:2005 dan MS ISO/IEC 27001:2007 bagi Sistem Pengurusan Keselamatan Maklumat (ISMS) dan telah menerima pensijilan tersebut pada 31 Oktober 2014. MetMalaysia menerima sijil penghargaan kerana telah berjaya memperolehi Sijil Skim Pensijilan Sistem Pengurusan Keselamatan Maklumat (ISMS) dalam Majlis SIRIM Industri 2014 yang diadakan di Sunway Resort Hotel & SPA pada 21 November 2014. Sijil disampaikan oleh YB Datuk Dr. Ewon Ebin, Menteri Sains, Teknologi dan Inovasi.

### GEOSPATIAL NATIONAL AWARDS

- MetMalaysia had received the Geospacial Excellence Award with the Fire Danger Rating System (FDRS) project. The FDRS system is being used in the operation of monitoring the dry season and the producing the fire-prone areas index. The 6th Geospacial National Awards Ceremony (NGIS-6) was held on 17 March 2014 at the Putrajaya International Convention Centre (PICC).*

### INFORMATION SECURITY MANAGEMENT SYSTEMS CERTIFICATION AWARDS

- MetMalaysia has achieved the standard's requirement of ISO/IEC 27001:2005 and MS ISO/IEC 27001:2007 for Information Security Management Systems (ISMS) and has obtained the certification on 31 October 2014. MetMalaysia received certificate of appreciation for successfully attained the Certification Scheme on Information Security Management Systems (ISMS) in SIRIM Industry Ceremony 2014 that held at Sunway Resort Hotel & SPA on 21 November 2014. The certificate was presented by YB Datuk Dr. Ewon Ebin, Minister of Science, Technology and Innovation.*



YB Datuk Seri G. Palanivel, Menteri Sumber Asli dan Alam Sekitar menyampaikan trofi Anugerah Geospacial Kebangsaan 2014 kepada Ketua Pengarah MetMalaysia Dato' Che Gayah Ismail.

YB Datuk Seri G. Palanivel, Minister of Natural Resources and Environment, delivering the 2014 National Geospacial Award trophy to the Director General of MetMalaysia Dato' Che Gayah Ismail.



Pengarah Bahagian Komunikasi Meteorologi, MetMalaysia bersama sijil ISMS

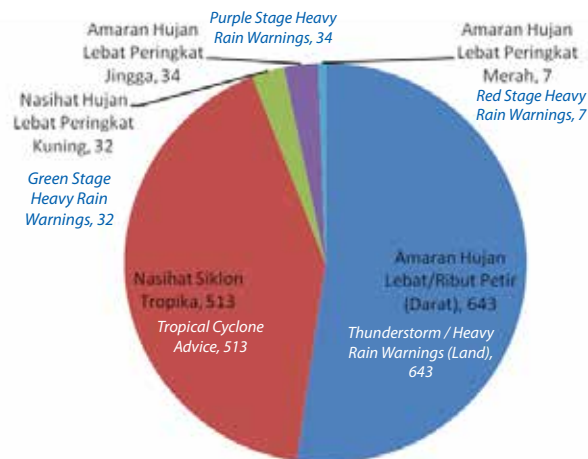
Director of Meteorological Communications Division with the ISMS certificate

## MAKLUMAT GEMPA BUMI

- Sepanjang tahun 2014, sebanyak 1,219 kejadian gempa bumi telah dapat dikesan sepanjang tahun ini dengan 19 daripadanya merupakan gempa bumi tempatan yang berlaku di Sabah, Malaysia. Peratusan pengeluaran maklumat awal kejadian gempa bumi dalam tempoh kurang dari 10 minit sebanyak 98% manakala peratusan maklumat gempa bumi yang telah dikemas kini (revised) dikeluarkan dalam tempoh kurang 30 minit selepas kejadian gempa bumi dikesan berlaku adalah sebanyak 100%.

## NASIHAT DAN AMARAN CUACA

- MetMalaysia mengeluarkan amaran/nasihat cuaca buruk seperti hujan lebat, ribut petir, ribut tropika, angin kencang dan laut bergelora. Nasihat dan amaran cuaca tersebut disebarkan kepada orang awam, media massa dan pihak berkuasa yang berkenaan melalui media cetak, media elektronik, SMS, laman sesawang dan media sosial. Pada tahun 2014, tujuh Amaran Hujan Lebat Peringkat Merah, 34 Amaran Hujan Lebat Peringkat Jingga dan 32 Nasihat Hujan Lebat Peringkat Kuning telah dikeluarkan semasa Monsun Timur Laut. Di samping itu, sebanyak 643 Amaran Ribut Petir dan Hujan Lebat dan 513 nasihat berkaitan ribut tropika telah dikeluarkan pada tahun 2014. MetMalaysia juga turut mengeluarkan 874 Nasihat dan Amaran Angin Kencang dan Laut Bergelora. Purata ketepatan ramalan cuaca umum bagi tempoh satu hari untuk tahun 2014



## EARTHQUAKE INFORMATION

- In 2014, the Center for Earthquakes and Tsunami detected a total of 1,219 earthquakes. 19 were local earthquakes occurred in Sabah, Malaysia; 98% of the preliminary information of the earthquakes had been identified in less than 10 minutes; 100% of the revised information of the earthquakes were prepared in less than 30 minutes after their occurrence.

## WEATHER ADVISORIES AND WARNINGS

- MetMalaysia issues warning/advisory for bad weather such as heavy rain, thunderstorms, strong winds and rough seas. The warnings and advisories are disseminated to the public, mass media and the relevant authorities via printed media, electronic media, SMS, website and social media. In 2014, a total of seven red stage, 34 orange stage heavy rain warnings and 32 yellow stage heavy rain advisories had been issued during the Northeast Monsoon. In addition, a total of 643 thunderstorm and heavy rain advisories were issued in 2014. MetMalaysia also issued 874 strong winds and rough seas warnings and advisories. The average accuracy for the general weather

ialah 86.63%. manakala ramalan cuaca lautan pula 85.62%.

### OPERASI PEMBENIHAN AWAN

- Sepanjang tempoh tahun 2014, sebanyak 105 operasi pembenihan awan (OPA) telah dijalankan termasuk 60 operasi dengan kerjasama Lembaga Urus Air Selangor (LUAS) telah dijalankan oleh MetMalaysia yang merangkumi negeri Kedah, Perak, Selangor, Negeri Sembilan, Pahang, Melaka, Johor dan Sarawak. Operasi pembenihan awan (OPA) dengan pesawat Tentera Udara DiRaja Malaysia (TUDM) C-130H menggunakan kaedah *wet seeding* manakala operasi dengan pesawat swasta Cessna 340A menggunakan kaedah *dry seeding* iaitu .

### PROGRAM KESEDARAN AWAM

- Lapan siri kempen kesedaran awam pada tahun 2014 telah dijalankan dalam usaha untuk meningkatkan pengetahuan dan kesedaran orang ramai terhadap bencana gempa bumi, tsunami dan cuaca ekstrem yang berlaku di Malaysia. Kempen tersebut telah diadakan di Tawau (Sabah), Kuala Perlis (Perlis), Tanjung Bungah (Pulau Pinang), Kuala Muda (Kedah), Mukah (Sarawak), Muar (Johor), Pasir Putih (Kelantan) dan Bagan Lalang (Selangor) . Di samping itu, dua latihan amal tsunami telah diadakan iaitu di Seberang Takir, Terengganu dan Sandakan, Sabah. Program latihan amal ini diadakan bagi meningkatkan tahap kesedaran dan kesiapsiagaan orang ramai terhadap risiko dan bahaya tsunami.



Ucapan perasmian YB Menteri MOSTI semasa Latihan amal Tsunami di Sandakan, Sabah.  
YB Minister MOSTI delivering the opening speech at the Tsunami Drills ceremony in Sandakan, Sabah.



YB Timbalan Menteri MOSTI melawat persediaan operasi pembenihan awan  
YB Deputy Minister MOSTI visited the preparation for cloud seeding operation.

forecast for one day in 2014 is 86.63% whereas for the marine weather forecast is 85.62% .

### CLOUD SEEDING OPERATIONS

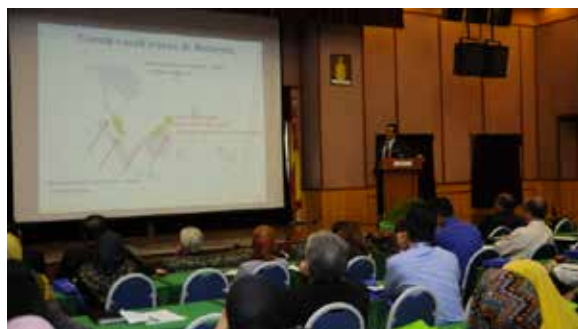
- During the year 2014, a total of 105 cloud seeding operations including 60 operations with the cooperation of Lembaga Urus Air Selangor (LUAS) was carried out by MetMalaysia over the State of Kedah, Perak, Selangor, Negeri Sembilan, Pahang, Melaka, Johor and Sarawak. The Cloud seeding operations by wet seedings method were done using the RMAF aircraft C-130H while the dry seeding method which is hygroscopic flare were done using private aircraft Cessna 340A.

### PUBLIC AWARENESS PROGRAMMES

- Eight series of public awareness campaign in 2014 had been conducted by MetMalaysia collaborating with the National Security Council (NSC) in order to improve public knowledge and awareness on earthquakes, tsunamis and extreme weather in Malaysia. They were held in Tawau (Sabah), Kuala Perlis (Perlis), Tanjung Bungah (Pulau Pinang), Kuala Muda (Kedah), Mukah (Sarawak), Muar (Johor), Pasir Puteh (Kelantan) and Bagan Lalang (Selangor). In addition, two tsunami drills were held in Seberang Takir, Kuala Terengganu and Sandakan, Sabah. This drills were held to improve the public awareness and preparedness on the risks and dangers of tsunamis.

## FORUM IKLIM KEBANGSAAN

- Forum Iklim Kebangsaan Monsun Timur Laut 2014/2015 telah diadakan pada 28 Oktober, 2014 bertempat di Ibu Pejabat MetMalaysia, Petaling Jaya, Selangor. Melalui forum ini, MetMalaysia dapat dapat berkongsi dan menyampaikan maklumat mengenai tinjauan cuaca bagi persediaan menghadapi bencana dan bertukar maklumat serta pengalaman dalam mengurangkan impak bencana banjir terhadap sosio ekonomi negara. Forum tersebut telah dirasmikan oleh En. Kamel Bin Mohamed, Setiausaha Bahagian Kanan Perancangan MOSTI selaku wakil kepada Ketua Setiausaha MOSTI.



**Dr. Mohd Hisham Mohd. Anip dari MetMalaysia membentangkan kertas kerja bertajuk Tinjauan Monsun Timur Laut 2014/2015 semasa Forum Iklim Kebangsaan.**  
*Dr. Mohd Hisham Mohd. Anip from MetMalaysia presented a paper entitled Northeast Monsoon Outlook 2014/2015 during the National Climate Forum.*



**YB Deputy Minister MOSTI signing the officiating plaque at the Malacca Meteorological Office during the 2014 World Meteorological Day.**

## HARI METEOROLOGI SEDUNIA

- Pada 23 Mac setiap tahun, Pertubuhan Meteorologi Sedunia (WMO) dan kesemua 191 negara anggotanya, termasuk komuniti meteorologi di seluruh dunia meraikan Hari Meteorologi Sedunia. Hari Meteorologi Sedunia 2014 yang bertemakan Cuaca dan Iklim: Penglibatan Belia telah disambut pada 23 Mac 2014. MetMalaysia telah menganjurkan sambutan ini berserta dengan perasmian Pejabat Meteorologi Melaka yang baharu. Majlis perasmian bangunan baharu Pejabat Meteorologi Melaka dan Hari Meteorologi Sedunia 2014 telah dirasmikan oleh YB Datuk Dr. Abu Bakar Mohamad Diah, Timbalan Menteri MOSTI.

## NATIONAL CLIMATE FORUM

- *The National Climate Forum on Northeast Monsoon 2014/2015 was held on October 28, 2014 at the Head Office of MetMalaysia, Petaling Jaya, Selangor. Through the forum, MetMalaysia was able to share information on the weather outlook and exchange information and experineces in order to reduce the impact of floods to the nation's socio-economy. The Forum was officiated by En. Kamel Bin Mohamed, the Secretary of Planning Divison MOSTI as representative to the Secretary General of MOSTI.*

## WORLD METEOROLOGICAL DAY

- *World Meteorological Organizations and all its 191 member states including the meteorological communities all over the world celebrate World Meteorological day every year on 23rd of March. The 2014 World Meteorological Day was held on the 23 March 2014 with the theme "Weather and Climate: Engaging Youth". MetMalaysia organised this event in conjunction with the official opening of the new Malacca Meteorological Office. The opening ceremony for the new Malacca Meteorological Office and World Meteorological Day 2014 was officiated by YB Datuk Dr. Abu Bakar Mohamad Diah, Deputy Minister of MOSTI.*



# AGENSI REMOTE SENSING MALAYSIA

## MALAYSIAN REMOTE SENSING AGENCY



### Anugerah Inovasi Sektor Awam (AISA) 2014 bagi kategori:

#### Anugerah Inovasi Teknologi Maklumat dan Komunikasi (AIICT) projek:

#### Sistem Penentuan Lokasi Penangkapan Ikan (Sistem FSI)

ARSM telah menerima Anugerah Inovasi Sektor Awam (AISA) 2014 bagi kategori Anugerah Inovasi Teknologi Maklumat dan Komunikasi (AIICT) menerusi Sistem Penentuan Lokasi Penangkapan Ikan (Sistem FSI). Anugerah tersebut disampaikan oleh YBhg. Tan Sri Dr. Ali Hamsa, Ketua Setiausaha Negara semasa Majlis Anugerah Inovasi Sektor Awam (AISA) 2014 di The Place@One City Subang Jaya, Selangor pada 9 Oktober 2014.

#### Fishing Site Identification System (FSI System)

ARSM has received a Public Sector Innovation Awards (AISA) 2014 under the category of Information and Communication Technology Innovation Awards (AIICT) through Fishing Site Identification System (FSI System). The award was presented by YBhg. Tan Sri Dr. Ali bin Hamsa, Chief Secretary to the Government of Malaysia during Public Sector Innovation Awards (AISA) 2014 Ceremony at The Place@One City Subang Jaya, Selangor on 9 October 2014.

FSI System which is based on remote sensing technology, Geographic Information System (GIS); and Information and Communication Technology (ICT) has been developed using ARSM in-house expertise with smart partnership collaboration

Sistem FSI yang berteraskan kepada teknologi remote sensing, Sistem Maklumat Geografi (GIS); dan Teknologi Maklumat dan Komunikasi (ICT) dibangunkan menggunakan kepakaran dalaman ARSM dengan kerjasama perkongsian pintar bersama Jabatan Perikanan Malaysia (DOF), Lembaga Kemajuan Ikan Malaysia (LKIM) dan Persatuan Nelayan Kebangsaan (NEKMAT).

Lokasi berpotensi tinggi bagi penangkapan ikan dikenal pasti melalui pemprosesan

with Department of Fisheries Malaysia (DOF), Malaysian Fisheries Development Authority (LKIM) and National Fishermen's Association (NEKMAT).

Highly potential fishing sites are identified through processing of remote sensing satellite images and disseminated to fishermen via Short Messaging System MySMS-15888 and could also be accessed online through FSI portal. By using this system, assessment analysis has shown an increase of fish catches between 30-50% whilst diesel consumption is reduced by 30%. FSI system has benefited some 30,161 fishermen throughout Malaysia.

imej satelit remote sensing dan disebar menggunakan Sistem Pesanan Ringkas MySMS-15888; dan boleh juga dicapai secara online menerusi portal FSI. Melalui penggunaan sistem ini, kajian penilaian membuktikan bahawa jumlah tangkapan ikan meningkat sebanyak 30%-50% manakala penggunaan diesel dapat dijimatkan sebanyak 30%. Sistem FSI ini telah memberi manfaat kepada 30,161 orang nelayan di seluruh Malaysia.



YBhg. Tan Sri Dr. Ali bin Hamsa, Ketua Setiausaha Negara (KSN) sedang menyampaikan Anugerah AISA 2014 bagi kategori AIICT kepada YBhg. Dato' Haji Darus bin Ahmad, Ketua Pengarah ARSM /

YBhg. Tan Sri Dr. Ali bin Hamsa, Chief Secretary to the Government of Malaysia presenting AISA 2014 Awards under AIICT category to YBhg. Dato' Haji Darus bin Ahmad, Director General of ARSM



YBhg. Dato' Haji Darus bin Ahmad, Ketua Pengarah ARSM bergambar bersama ahli pasukan Sistem FSI ARSM semasa Majlis Anugerah AISA 2014 bagi kategori AIICT /

YBhg. Dato' Haji Darus bin Ahmad, Director General of ARSM photographs with ARSM FSI System team members during AISA 2014 Awards ceremony under AIICT category

### Perolehan Sistem Penerimaan Data Satelit SPOT-6

Perolehan sistem penerimaan data satelit SPOT-6 di Stesen Bumi ARSM, Temerloh, Pahang dilaksanakan dengan objektif untuk memastikan kesinambungan penerimaan data satelit remote sensing generasi baharu dengan resolusi yang lebih tinggi di samping menggantikan sistem sedia ada yang telah digunakan semenjak tahun 2002.

Dua (2) komponen utama dalam perolehan sistem penerimaan data satelit SPOT-6 ini ialah sistem pemprosesan data satelit remote sensing dan sistem antena bersaiz 7.3 m. Stesen Bumi ARSM ini mula menerima data satelit SPOT-6 dengan resolusi 1.5 m pada bulan Julai 2014 sebagai gantian kepada satelit SPOT-5 dengan resolusi 2.5 m yang telah tamat tempoh jangkanya.

Dengan adanya sistem baharu ini, ARSM terus komited untuk membekalkan data satelit remote sensing terkini dengan resolusi yang lebih tinggi secara lebih cekap dan berkesan bagi memenuhi keperluan pengguna dalam pengurusan pertanian, perikanan, sumber asli, alam sekitar, bencana, keselamatan dan pembangunan tanah negara.

### Procurement of SPOT-6 Satellite Data Receiving System

*The procurement of SPOT-6 satellite data receiving system at ARSM Ground Station, Temerloh, Pahang was implemented with the objective to ensure continuance of receiving new generation of high resolution satellite remote sensing data and as well as replacing the existing system which was in operational since 2002.*

*The two (2) main components of the procurement of SPOT-6 Satellite Data Receiving System are the remote sensing satellite data processing system and 7.3 m size antenna system. This ARSM Ground Station started receiving 1.5 m resolution SPOT-6 satellite data in July 2014 as a replacement for SPOT-5 satellite with resolution of 2.5 m which has expired.*

*With the new system, ARSM remains committed to providing the latest remote sensing satellite data with higher resolution more efficiently and effectively to meet the needs of users in the management of agriculture, fisheries, natural resources, environment, disaster, security and land development of the country.*



Antena sistem penerimaan data satelit SPOT-6  
SPOT-6 satellite data receiving system antenna

## Pelancaran Sistem Pengurusan Hutan Paya Laut Matang

ARSM dengan kerjasama Jabatan Perhutanan Semenanjung Malaysia (JPSM) membangunkan sistem pengurusan hutan paya laut berteraskan teknologi remote sensing, Sistem Maklumat Geografi (GIS); dan Teknologi Maklumat dan Komunikasi (ICT). Kawasan Hutan Paya Laut Matang di negeri Perak telah dipilih sebagai lokasi perintis pelaksanaan sistem ini. Sistem web-GIS yang dikenali sebagai Sistem Pengurusan Hutan Paya Laut Matang (e-MMFR) dibangunkan hasil kerjasama ARSM dan Jabatan Perhutanan Negeri Perak. Sistem e-MMFR telah dilancarkan pada 24 November 2014 bersempena Perak Conference on a Century of Matang Mangrove Forest yang diadakan di Ipoh, Perak. Konferen dan pelancaran sistem e-MMFR telah disempurnakan oleh YABhg. Tun Abdullah Ahmad Badawi, selaku Penaung NGO Landskap Malaysia.

## Launching of Matang Mangrove Forest Management System

ARSM in collaboration with Forestry Department Peninsular Malaysia (FDPM) are developing Mangrove Forest Management System based on remote Sensing technology, Geographic Information System (GIS); and Information and Communication Technology (ICT). Matang Mangrove Forest in Perak was selected as a pilot site for the system development. The GIS-web system known as Matang Mangrove Forest Management System (e-MMFR) was developed in collaboration of ARSM and Perak State Forestry Department. e-MMFR system was launched on 24 November 2014 in conjunction with Perak Conference on a Century of Matang Mangrove Forest held in Ipoh, Perak. The conference and launching of e-MMFR system were inaugurated by YABhg. Tun Abdullah Ahmad Badawi, Patron of Landskap Malaysia NGO.



Majlis perasmian Perak Conference on a Century of Matang Mangrove Forest dan pelancaran Sistem Pengurusan Hutan Paya Laut Matang (e-MMFR) oleh YABhg. Tun Abdullah Ahmad Badawi

*Opening ceremony of Perak Conference on a Century of Matang Mangrove Forest and launching of Matang Mangrove Forest Management System (e-MMFR) by YBhg. Tun Abdullah Ahmad Badawi*



Antaramuka Sistem Pengurusan Hutan Paya Laut Matang (e-MMFR)

*Interface of Matang Mangrove Forest Management System (e-MMFR)*

# DIREKTORAT OSEANOGRAFI KEBANGSAAN

## NATIONAL OCEANOGRAPHY DIRECTORATE



### **Malaysia Data Aggregation and Archiving System (MyDAS)**

Pusat Data MyNODC, NOD telah diamanahkan dengan sebuah *flagship* program iaitu *Malaysia Data Aggregation and Archiving System (MyDAS)*. Projek penyelidikan strategik ini memakan masa 3 tahun bernilai RM3.8 juta, akan menjadikan MyNODC yang lebih efisien dan efektif dalam menerima data daripada pelbagai sumber bertujuan mendapatkan ramalan dan pemodelan lautan.

### **Kajian Strategik Penubuhan Institut Oseanografi Negara**

NOD juga telah berjaya menyiapkan Kajian Strategik Penubuhan Institut Oseanografi Negara dengan kerjasama UKM Pakarunding. Kajian ini adalah untuk melihat kebolehlaksanaan penubuhan sebuah institut yang akan berperanan untuk meningkatkan kecekapan pengurusan sumber marin negara. Kajian dilakukan dengan mengambilkira pandangan kementerian/jabatan/agensi yang terlibat dengan pengurusan sumber marin melalui perbincangan dengan kumpulan fokus, temubual secara bersemuka dan tinjauan pusat-pusat kecemerlangan sains marin dan oseanografi.

### **Program Inisiatif Segi Tiga Terumbu Karang (CTI)**

Bagi program kerjasama antarabangsa dan serantau, NOD bertindak sebagai Sekretariat Nasional bagi Program Inisiatif Segi Tiga Terumbu Karang (CTI). Semenjak penubuhannya pada tahun 2009, Malaysia telah



Ucapan perasmian oleh YB Datuk Dr. Ewon Ebin, Menteri Sains, Teknologi dan Inovasi (MOSTI).  
*Opening speech by YB Datuk Dr. Ewon Ebin, Minister Science, Technology & Innovation (MOSTI).*

### **Malaysia Data Aggregation and Archiving System (MyDAS)**

*NOD has been entrusted with the flagship program Malaysia Data Aggregation and Archiving System (MyDAS). This three years strategic research project worth of RM3.8 million aims to develop a more efficient and effective way in data management from various sources yields in forecasting and ocean modelling.*

### **Strategic Study for the Establishment of the National Institute of Oceanography**

*NOD has also completed the Strategic Study for the Establishment of the National Institute of Oceanography with assistance from UKM Pakarunding. This study was carried out to look at the feasibility of establishing an institute that will serve to improve the efficiency of marine resources management. The study took into account views from related ministries/departments/agencies in marine resources management through discussions with focus groups, face-to-face interview and reviews from marine science and oceanography Center of Excellence (COE).*

### **Coral Triangle Initiative (CTI)**

*With regards to international and regional cooperation program, NOD acts as the National Secretariat for the Coral Triangle Initiative (CTI) which was initiated since 2009 with five other countries (Indonesia,*



**Ketua-ketua Delegasi Negara Ahli CTI di SOM10**  
*Heads of Delegation of the State Member of CTI in SOM10*



**Delegasi Malaysia diketuai oleh YBhg. Dato' Dr. TKSUD ke Mesyuarat Pegawai-pegawai Kanan Ke-Sepuluh (SOM10) di Dili, Timor-Leste**  
*The Malaysian delegation headed by Hon. Dato' Dr. The purpose of the Senior Officials Meeting of the Tenth (SOM10) in Dili, Timor-Leste*

terlibat secara aktif di samping lima negara ahli yang lain. YB. Datuk Dr. Menteri Sains, Teknologi dan Inovasi merupakan pengerusi kepada CTI Council of Ministers bagi tempoh 20 November 2011 sehingga 15 Mei 2014. Semasa tempoh kepimpinan Malaysia, Sekretariat Serantau CTI di Manado, Indonesia telah berjaya ditubuhkan yang sebelum itu ditabdir oleh Sekretariat Interim Serantau.

Komitmen dari semua agensi yang terlibat telah berjaya menggerakkan Pelan Tindakan Nasional (NPOA) CTI dari tahun 2012 hingga 2014.

### **World Oceans Day 2014 (WOD 2014)**

NOD telah manganjurkan sambutan *World Oceans Day 2014 (WOD 2014)* pada 8 Jun 2014 di Pusat Sains Negara. Sambutan ini mendokong matlamat UNESCO 'One Planet, One Ocean' yang menitikberatkan pengurusan sumber marin yang mampan dengan mengubah persektif dan cara pemikiran setiap lapisan masyarakat mengenai kepentingan pemuliharaan serta pemeliharaan ekosistem laut.

Selaras dengan tema WOD 2014 iaitu '*Together We Have the Power to Protect the Ocean*', pihak NOD bersama-sama dengan 19 agensi kerajaan, swasta, pusat-pusat kecemerlangan dan NGO telah berganding bahu bagi menjayakan program ini.

*Philippines, Papua New Guinea, Timor Leste and Solomon Island). The CTI Council of Ministers (CTI-COM) was chaired by YB. Datuk Dr. Minister of Science, Technology and Innovation from 20 November 2011 until 15 May 2014. During this period of Malaysia's leadership, the CTI Permanent Regional Secretariat located in Manado, Indonesia has been successfully established replacing the previous Regional Interim Secretariat.*

*All the agencies involved managed to mobilise 91% of the National Plan of Action (POA) CTI from the year 2012 to 2014.*

### **World Oceans Day 2014 (WOD 2014)**

*NOD has organised the World Oceans Day 2014 (WOD 2014) celebration on the 8th June 2014 at the National Science Centre to support UNESCO's goal of 'One Planet, One Ocean'. The event emphasizes on the sustainable management of marine resources by changing the perspectives and opinions of the society about the importance of marine ecosystem conservation and preservation.*

*In line with WOD 2014 theme, 'Together We Have the Power to Protect the Ocean', NOD alongside with 19 related government agencies, private sector, Centre of Excellences (COE) and Non-Government Organisations (NGO) have come together to organise the remarkable event. This celebration attracted a total of 3,600 people from all walks of life and garnered great impact in educating the public on the uniqueness and importance of the ocean treasure as well as nurturing a sense of responsibility towards the preservation and conservation of marine ecosystems.*



Gimik perasmian WOD 2014 / WOD 2014 opening gimmick.



Penganjuran sambutan WOD 2014 yang telah menerima kunjungan seramai 3,600 orang pelbagai peringkat umur telah berjaya menarik dan membuka minda orang ramai mengenai keunikan dan kepentingan khazanah lautan dan memupuk rasa tanggungjawab dalam setiap individu ke arah usaha pemeliharaan dan pemuliharaan ekosistem lautan secara menyeluruh.

### **Pertandingan Kawalan Jauh Kenderaan Dalam Air 2014 (UROVeC'14)**

NOD telah menganjurkan Pertandingan *Underwater Remotely Operated Vehicle* 2014 (UROVeC'14) pada 17 - 18 September 2014 bertempat di Institut Tadbiran Awam Negara (INTAN), Bukit Kiara dengan kerjasama Kementerian Pendidikan Malaysia (KPM), Universiti Sains Malaysia (USM), Universiti Malaysia Terengganu (UMT), Universiti Teknikal Melaka (UTeM), Universiti Malaysia Sabah (UMS) dan *Royal Institution of Naval Architecture & the Institute of Marine Engineering, Science and Technology* (RINA-IMaREST).

Berpaksikan kepada matlamat untuk memupuk minat dan mencungkil bakat serta mengasah kreativiti pelajar dalam penghasilan robotik bawah air, UROVeC'14 disertai 23 buah pasukan dari Sekolah Menengah Teknik (SMT) dan Kolej Vokasional (KV) dari seluruh Malaysia.

### ***Underwater Remotely Operated Vehicle Competition 2014 (UROVeC'14)***

*NOD has organised the Underwater Remotely Operated Vehicle Competition 2014 (UROVeC'14) on the 17 – 18th September 2014 at the National Institute of Public Administration (INTAN), Bukit Kiara. This program was held in collaboration with the Ministry of Education Malaysia (MOE), University Science Malaysia (USM), University Malaysia Terengganu (UMT), Technical University of Malaysia Malacca (UTeM), University Malaysia Sabah (UMS) as well as the Royal Institution of Naval Architecture and the Institute of Marine Engineering, Science and Technology (RINA -IMaREST).*

*With the objectives to spark interests, talents and nurture students' creativity in constructing an underwater robotic, 23 teams from the Technic School (Sekolah Menengah Teknik) and Vocational College (Kolej Vokasional) participated in UROVeC'14.*



# YAYASAN ANGKASAWAN MALAYSIA (YAM)

## MALAYSIA ASTRONAUT FOUNDATION



Sepanjang tahun 2014, YAM telah terlibat dengan 33 aktiviti dalam memberikan kesedaran umum bidang sains dan teknologi angkasa kepada masyarakat Malaysia yang dikategorikan seperti berikut :

*Throughout 2014, YAM involved in 33 activities providing public awareness of space science and technology to the public, in the following categories:*

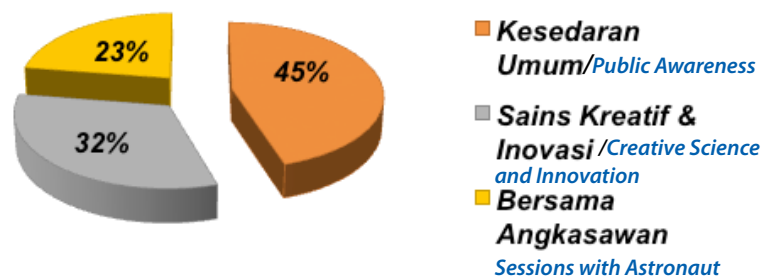
**Jumlah program yang telah dijalankan oleh YAM sepanjang tahun 2014**

*The number of programs that have been carried out by YAM throughout 2014*



**Kadar peratusan program yang telah dijalankan oleh YAM sepanjang tahun 2014**

*The percentage of programs that have been run by YAM during 2014*



**Contoh-contoh program yang disertai YAM ialah:**

- Pameran Angkasawan @ Karnival Planet Gempak ASTRO yang mencatat rekod kehadiran khalayak berjumlah 500,000 pengunjung
- Bersama Angkasawan yang menemukan Ikon Angkasawan dengan pengunjung
- *Creativity & Science4U* di sembilan lokasi seperti Melaka, Johor, Sabah, Kelantan, dan Putrajaya.

**Examples of the programmes involved by YAM are:**

- *Space Exhibition @ Planet Gempak Astro Carnival recorded a total audience attendance of 500,000 visitors*
- *Astronaut sessions with Astronaut icon and visitors*
- *Nine event "Creativity & Science4U" locations at Malacca, Johor, Sabah, Kelantan and Putrajaya.*



# YAYASAN PENYELIDIKAN ANTARTIKA SULTAN MIZAN

## SULTAN MIZAN ANTARCTICA RESEARCH FOUNDATION



Dato' Sri Dr Noorul Ainur menerima Flag SCAR dari Prof Bryan Storey, Naib Presiden SCAR dan Pengerusi Jawatankuasa Penganjur Tempatan Mesyuarat XXXIII SCAR dwitahunan termasuk Persidangan Sains Terbuka 2014.

*Dato' Sri Dr Noorul Ainur receiving SCAR's Flag Prof Bryan Storey, Vice President of SCAR and Chairman of Local Organizing Committee of XXXIII SCAR Biennial Meetings including the Open Science Conference 2014.*

### Geran Penyelidikan YPASM Dan Program Fellowship YPASM.

YPASM meneruskan peranan dalam mengekalkan kehadiran Malaysia di Benua Polar dengan menganugerahkan tiga geran penyelidikan berjumlah RM150,000 setiap satu pada tahun 2014. Tiga projek penyelidikan yang keseluruhannya berjumlah RM 450,000.00 telah dianugerahkan kepada UiTM, UKM dan UPM. Permohonan geran penyelidikan YPASM bagi tahun 2014 datang dari tiga disiplin berbeza iaitu sains biologi, sains fizikal dan polisi. Program Fellowship YPASM diwujudkan untuk menggalakkan pembabitan aktif saintis muda negara dalam penyelidikan saintifik di benua kutub di samping membina rangkaian baru dan memperkukuhkan lagi keupayaan kerjasama antarabangsa. Pada tahun 2014, empat Program Fellowship YPASM berjumlah RM200,000 telah dianugerahkan kepada penyelidik dari USM, UM, UPM and UMS.

### XXXVII Antarctic Treaty Consultative Meeting (ATCM), Brasilia, Brazil, 28 April – 7 Mei 2014.

XXXVII ATCM telah diadakan di Brasilia, Brazil dari 28 April hingga 7 Mei 2014 dengan objektif untuk membolehkan Negara terlibat bertukar maklumat, mengadakan rundingan dan menimbang serta mencadangkan langkah-

### YPASM Research Grant 2014 And YPASM Fellowship Scheme

*YPASM continuing its' role in sustaining Malaysia's presence in Polar Research by awarding three research grants amounting RM150,000 each in the year 2014. Three research projects amounting RM 450,000.00 were selected from UiTM, UKM and UPM. The applications came from three different disciplines namely biological sciences, physical sciences and policy. The YPASM Fellowship Scheme is designed to encourage active involvement of early career scientists in polar scientific research, and to build new networking and further strengthen international capacity and co-operation in Polar research. In year 2014, four fellowship scheme amounting RM200,000 have been awarded to researchers from USM, UM, UPM and UMS.*

### XXXVII Antarctic Treaty Consultative Meeting (ATCM), Brasilia, Brazil, 28 April – 7 May 2014.

*The XXXVII ATCM was held in Brasilia, Brazil from 28 April to 7 May 2014 with the objective of exchanging information, holding consultations and considering and recommending to their Governments measures in furtherance of the principles and objectives of the Treaty. The*



langkah untuk menjaga kelansungan prinsip dan objektif Triti. Mesyuarat ini dihadiri oleh wakil Ahli Konsultasi, bukan Konsultasi dan Ahli Berkaitan kepada Triti Antartika. Mesyuarat itu juga dihadiri oleh Pemerhati and Pakar dari beberapa pertubuhan antarabangsa dan pertubuhan bukan kerajaan.

#### Ahli-ahli delegasi Malaysia termasuk:

- i. Dato' Dr. Mohd Azhar Hj. Yahaya, Timbalan Ketua Setiausaha (Dasar), MOSTI – Ketua Delegasi;
- ii. Tuan Yang Terutama, Dato' Sudha Devi K.R. Vasudevan, Duta Malaysia ke Brazil;
- iii. Tan Sri Dr. Salleh Mohd Nor, Ahli Lembaga Pemegang Amanah, YPASM;
- iv. Ms. Sumitra Jeyaseelan, Ketua Penolong Setiausaha, MOSTI;
- v. Assoc. Prof. Dr. Rohani Mohd Shah, Fakulti Undang-Undang, UiTM;
- vi. Mr. Nasaruddin Rahman, Ketua Pegawai Eksekutif, YPASM; dan
- vii. Mr. Shamsul Nizam Shamsudin, Kauselor, Kedutaan Malaysia in Brazil.

Dato' Dr. Azhar sebagai Ketua Delegasi telah menyampaikan laporan bertajuk, Aktiviti dan Pencapaian Malaysia dalam Penyelidikan dan Diplomasi Antartika di bawah Perkara 4 daripada Agenda : Sistem Operasi Triti Antartika Treaty: Laporan dari Ahli, Pemerhati dan Pakar.

Malaysia juga menyampaikan kertas untuk membincangkan keutamaan yang ditetapkan dan aktiviti yang telah dijalankan oleh penyelidik-penyelidik melalui Program Antartika Kebangsaan Malaysia. Ini termasuk penyelidikan dalam bidang geologi, geosains, penderiaan jauh, mikrobiologi dan ekologi.



Dr Wan Rauhan Wan Hussin dari Universiti Malaysia Terengganu dengan rakan sejawatannya dari Korea di salah satu makmal di Stesen Sejong Kim, Antartika. Dr Wan Rauhan adalah salah satu penerima anugerah Skim Fellowship YPASM.

*Dr Wan Rauhan Wan Hussin from Universiti Malaysia Terengganu with his Korean counterpart at one of the lab in Kim Sejong Station, Antarctica. Dr Wan Rauhan is one of the awardee of YPASM Fellowship Scheme.*



Dr Wan Rauhan Wan Hussin dari Universiti Malaysia Terengganu bersiap sedia untuk mengumpul sampel di Antartika dengan pasukan penyelidikannya. Dr Wan Rauhan Wan Hussin adalah pemegang Biasiswa Skim Fellowship YPASM.

*Dr Wan Rauhan Wan Hussin from University Malaysia Terengganu getting ready to collect samples at Antarctica with his research team.*

*Dr Wan Rauhan Wan Hussin is awardee of YPASM Fellowship Scheme.*

*meeting was attended by the representatives of the Consultative Parties and Contracting Parties to the Antarctic Treaty which were not Consultative Parties. The meeting was also attended by the Observers and Experts from a number of international organisations and non-governmental organisations.*

#### **The full members of the Malaysian delegation include:**

- i. *Dato' Dr. Mohd Azhar Hj. Yahaya, Deputy Secretary General (Policy), MOSTI – Head of the Delegation;*
- ii. *Her Excellency Dato' Sudha Devi K.R. Vasudevan, Malaysian Ambassador in Brazil;*
- iii. *Tan Sri Dr. Salleh Mohd Nor, Board of Trustee, YPASM;*
- iv. *Ms. Sumitra Jeyaseelan, Chief Assistant Secretary, MOSTI;*
- v. *Assoc. Prof. Dr. Rohani Mohd Shah, Faculty of Law, UiTM;*
- vi. *Mr. Nasaruddin Rahman, CEO, YPASM; and*
- vii. *Mr. Shamsul Nizam Shamsudin, Counsellor, Malaysian Embassy in Brazil.*

*Delegation Chief Dato Dr. Azhar presented the report entitled Malaysia's Activities and Achievements in Antarctic Research and Diplomacy Under item 4 of the agenda : Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts.*

*Malaysia also presented Information Paper entitled Malaysia's Activities and Achievements in Antarctic Research and Diplomacy, which discussed the priorities set and the activities conducted through the Malaysian Antarctic Research Programme (MARP) taskforce. These included research in geology, geosciences, remote sensing, polar microbiology and ecology.*

### **Symposium On Asian Polar Sciences And The 10th Anniversary Of Asian Forum For Polar Sciences (AFoPS), 7 – 8 Oktober 2014, Avillion Admiral Cove, Port Dickson**

Bagi penggal 2013 / 2014, Malaysia telah diberikan tanggungjawab sebagai Pengerusi AFoPS bersempena dengan ulang tahun AFoPS yang ke-10. Sambutan Ulang tahun ke -10 AFoPS ini telah dianjurkan YPASM and Pusat Penyelidikan Antartika Kebangsaan dengan sokongan MOSTI pada 7 Oktober 2014. Pembentangan kertas kerja saintifik oleh penyelidik utama dan muda dari setiap negara anggota telah di jalankan termasuk sesi pembentangan poster saintifik. Dato' Sri Dr Noorul Ainur, Ketua Setiausaha MOSTI telah menghadiri majlis makan malam AFoPS.

Mesyuarat Agung AFoPS telah diadakan pada 8 Oktober 2014 dan dipengerusikan oleh Prof Dato' Dr Azizan Abu Samah dari Malaysia. Semua negara anggota telah hadir.

### **Penyertaan Delegasi Malaysia Ke Mesyuarat Dwi Tahunan SCAR Kali Ke-34 Dan Persidangan Sains Terbuka 2016, Auckland, New Zealand, 23 Ogos – 3 September 2014.**

Delegasi Malaysia diketuai oleh Dato' Sri Dr Noorul Ainur, Ketua Setiausaha MOSTI telah menghadiri Mesyuarat Dwi Tahunan SCAR Kali ke -33 dan Persidangan Sains Terbuka 2014 di Auckland, New Zealand dari 23 Ogos hingga 3hb September 2014.

#### **Objektif penyertaan Malaysia:**

- i. Mengumumkan penganjuran Mesyuarat Dwi Tahunan SCAR kali ke-34 dan Persidangan Sains Terbuka 2014 ;



**Cik Yew Wen Chyin dari Universiti Malaya semasa Sambutan Baru Cina di Antartika. Cik Wen Chyin WIS Biasiswa Skim Fellowship YPASM**

*Ms Yew Wen Chyin from Universiti Malaya during Chinese New Celebration in Antarctica. Ms Wen Chyin is the awardee of YPASM Fellowship Scheme*



**Cik Wen Chyin dari Universiti Malaya di Antartika. Cik Wen Chyin telah menerima Skim Fellowship YPASM untuk projek penyelidikan beliau bertajuk Hubungan Antara Diet Penguins dan Gut Mikroflora dan Pengaruh ke Habitat mereka**

*Ms Wen Chyin from Universiti Malaya at Antarctica. Ms Wen Chyin has received YPASM Fellowship Scheme for for her research project entitled, The Relationship Between Penguins' Diet and Gut Microflora, and the Influences to Their Habitat*

### **Symposium On Asian Polar Sciences And The 10th Anniversary Of Asian Forum For Polar Sciences (AFoPS), 7 – 8 October 2014, Avillion Admiral Cove, Port Dickson**

*For 2013/2014, Malaysia has been handed the chairmanship in conjunction with the 10th anniversary of AFoPS. The 10th Anniversary of AFoPS was organised by YPASM and National Antarctic Research Centre with the support of MOSTI on 7 October 2014. Scientific Presentations by young and prominent researchers from each member country was held to embark the 10 years of Asian Forum on Polar Sciences (AFoPS) since its birth in 2004 in Jeju Island, Korea. Scientific poster session was also held during the session. Dato' Sri Dr Noorul Ainur, Secretary General of MOSTI attended the dinner in-conjunction with AFoPS. The Annual General Meeting of AFoPS was held on 8 October 2014 and chaired by Prof Dato' Dr Azizan Abu Samah from Malaysia. All members' countries were present.*

### **Participation Of Malaysian Delegation At The Xxxiii Scientific Committee On Antarctica Research (SCAR) Biennial Meetings Including The 2014 Open Science Conference, Auckland, New Zealand, 23rd August – 3rd September 2014.**

*Malaysian delegation headed by Dato' Sri Dr Noorul Ainur, Secretary General of MOSTI has attended the XXXIII SCAR Biennial Meetings including the Open Science Conference at Auckland, New Zealand from 23 August to 3rd September 2014.*

#### **The objectives of Malaysian participation were:**

- i. To announce the hosting of 2016 SCAR Meetings and Conference;

- ii. Untuk menjemput perwakilan SCAR, saintis dan penyelidik menghadiri Mesyuarat Dwi Tahunan SCAR kali ke-34 dan Persidangan Sains Terbuka 2016;
- iii. Untuk mempromosi Mesyuarat Dwi Tahunan SCAR kali ke-34 dan Persidangan Sains Terbuka 2016; dan
- iv. Untuk mengenal pasti rakan kongsi dan pempamer-pempamer yang bakal hadir Mesyuarat Dwi Tahunan SCAR kali ke-34 dan Persidangan Sains Terbuka 2016.

Persidangan ini telah dihadiri lebih kurang 1000 orang peserta dari 36 buah negara. 421 kertas saintifik telah dibentangkan dalam 72 sesi lisan dan sekitar 200 buah kertas telah dibentangkan dalam sesi poster. Lapan orang penyelidik Malaysia telah menyampaikan kertas kerja mereka secara oral dan poster. Pada Majlis Penutup Persidangan Sains Terbuka, Dato' Sri Dr Noorul Ainur Mohd Nur menyampaikan ucapan jemputan diikuti oleh tayangan video menjemput peserta ke Mesyuarat Dwi Tahunan SCAR kali ke-34 dan Persidangan Sains Terbuka 2016. Bendera SCAR kemudiannya telah diserahkan kepada Dato' Sri oleh Naib Presiden SCAR dan Pengerusi Jawatankuasa Penganjur SCAR 2014, Prof Bryan Storey. Semasa Mesyuarat Perwakilan, Prof Dato' Dr Azizan Abu Samah dari Malaysia telah dilantik sebagai Naib Presiden SCAR bagi tahun 2014 – 2016.



Dr Wan Rauhan Wan Hussin dari Universiti Malaysia Terengganu di Antartika. Dr Wan Rauhan Wan Hussin adalah Biasiswa Skim Fellowship YPASM.

*Dr. Wan Rauhan Wan Hussin from Universiti Malaysia Terengganu at Antarctica. Dr Wan Rauhan Wan Hussin is awardee of YPASM Fellowship Scheme*

## SCAR KE-34

- 1000 peserta
- 36 negara
- 421 Kertas saintifik
- 72 sesi lisan perbincangan
- 200 kertas

- ii. To invite SCAR delegates, scientists and researchers to attend SCAR Meetings and Conference in Malaysian in 2016;
- iii. To promote SCAR Meetings and Conference in 2016; and
- iv. To identify potential partners including exhibitors for 2016 meetings and conference.

*The conference was attended by around 1000 participants from 36 countries. 421 papers were presented in 72 oral session and around 200 papers were presented in poster session. Eight Malaysian researchers have presented their paper in oral and poster session. At the closing session of open science Conference, Dato' Sri Dr Noorul Ainur Mohd Nur delivered the remarks followed by the video presentation to invite participants to XXXIV SCAR Meetings including OSC in 2016. SCAR flag was then handed over to Dato' Sri by Vice President of SCAR and Chairman of Local Organising Committee of SCAR 2014, Prof Bryan Storey. At the delegates meeting, Prof Dato' Dr Azizan Abu Samah from Malaysia has been elected as the Vice President of SCAR for year 2014 – 2016.*



TECHNOLOGY PARK MALAYSIA

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# LAPORAN KLUSTER TERAS SAINS DAN TEKNOLOGI

- ◆ Bahagian Teras Sains & Teknologi
- ◆ Jabatan Kimia Malaysia
- ◆ Pusat Sains Negara
- ◆ Akademi Sains Negara

## CLUSTER REPORT

### SCIENCE AND TECHNOLOGY CORE

- ◆ *Science & Technology Core Division*
- ◆ *Department of Chemistry Malaysia*
- ◆ *National Science Centre*
- ◆ *Academy of Science Malaysia*

# BAHAGIAN TERAS SAINS DAN TEKNOLOGI

## SCIENCE AND TECHNOLOGY CORE DIVISION



Penerima Anugerah Saintis Muda Negara 2014, Dr. Lim Jit Kang menerima anugerah dari YAB Timbalan Perdana Menteri.  
*The winner of National Young Scientist Award 2014, Dr. Lim Jit Kang accepting the award from the Deputy Prime Minister.*

### Anugerah Saintis Muda Negara

- Anugerah Saintis Muda Negara telah diadakan sebagai satu pengiktirafan terhadap kerja dan pencapaian yang cemerlang oleh saintis muda dalam bidang penyelidikan dan pembangunan (R&D) sains, teknologi dan inovasi (STI). Pemenang bagi tahun ini iaitu Dr. Lim Jit Kang dari Universiti Sains Malaysia telah menerima wang tunai RM20,000 berserta piala dan sijil. Bidang penyelidikan beliau ialah Kejuruteraan Kimia.



Penerima Anugerah Juruteknologi Negara 2014, Encik Kasron Ahmad menerima anugerah dari YAB Timbalan Perdana Menteri.  
*The winner of the National Technologist Award 2014, Mr Kasron Ahmad accepting the award from the Deputy Prime Minister.*

### Anugerah Juruteknologi Negara

- Anugerah Juruteknologi Negara telah diadakan sebagai satu pengiktirafan terhadap kerja dan pencapaian yang cemerlang oleh Juruteknologi (Juruteknik/Pembantu Makmal serta kakitangan separa ikhtisas) yang kerja-kerjanya berkaitan dengan sains dan teknologi (S&T). Pemenang bagi tahun ini iaitu Encik Kasron bin Ahmad dari Institut Penyelidikan & Kemajuan Pertanian Malaysia (MARDI) telah menerima wang tunai RM10,000 berserta piala dan sijil.

### National Young Scientist Award

- The National Young Scientist Award 2014 was held in recognition of the outstanding work and achievements of our young scientists in carrying out research and development (R&D) in the area of science, technology and innovation (STI). The winner of the award went to Dr. Lim Jit Kang from Universiti Sains Malaysia who received a cash reward of RM20,000, a trophy and a certificate.*

### National Technologist Award

- The National Technologist Award 2014 was held in recognition of the outstanding work and achievements by Technologist (Technician/Laboratory Assistant and semi-professional staff related to science and technology (S&T). Mr. Kasron Ahmad from the Malaysian Agricultural Research and Development Institute (MARDI) was declared the winner. He received a cash reward of RM10,000, a trophy and a certificate.*

# JABATAN KIMIA MALAYSIA

DEPARTMENT OF  
CHEMISTRY MALAYSIA



Perasmian Pusat Forensik DNA di Makmal Cawangan Kota Kinabalu oleh YB Menteri MOSTI pada 12 September 2014.

*The official opening of the DNA Forensic Centre at the Kota Kinabalu Branch Laboratory by the Honorable Minister of MOSTI on 12 September 2014.*

Jabatan Kimia Malaysia menyediakan perkhidmatan analisis dan khidmat nasihat saintifik kepada agensi penguatkuasaan undang-undang bagi membantu menegakkan keadilan dan memastikan pematuhan kepada Akta dan Peraturan-Peraturan Negara. Khidmat saintifik yang disediakan juga menyumbang kepada kesejahteraan rakyat melalui perkhidmatan analisis untuk menjamin keselamatan makanan dan air minum serta pemuliharaan alam sekeliling. Pelanggan utama Jabatan termasuk Polis DiRaja Malaysia, Kementerian Kesihatan, Jabatan Kastam dan Eksais DiRaja Malaysia, Jabatan Alam Sekitar dan lain-lain.

## Aktiviti dan pencapaian utama:

1. Sepanjang tahun 2014, sejumlah 1,024,403 sampel-sampel telah dianalisis yang meliputi bidang analisis forensik yang berkaitan dengan kes jenayah seperti bunuh, rogol, pengedaran dadah serta analisis sampel makanan, air, alam sekitar dan produk industri.
2. Untuk mendekatkan perkhidmatan DNA Forensik kepada pihak berkuasa di Sabah, Makmal Forensik DNA di Makmal Cawangan Kota Kinabalu telah dibuka dan dirasmikan oleh YB Menteri MOSTI pada 12 September 2014.

*Chemistry Department provides analytical services and scientific advice to law enforcement agencies to uphold justice and adherence to Acts and Regulations of the country. Scientific services provided also contribute to the welfare of the people through analytical services to ensure the safety of food and drinking water and environmental protection. Major clients include the Royal Malaysian Police, Ministry of Health, Department of Customs and Excise Malaysia, Department of Environment and others.*

## Main activities and achievements:

1. During 2014, a total of 1,024,403 samples were analysed covering the areas of forensic analysis related to crimes such as murder, rape, drug trafficking and the analysis of samples of food, water, environmental and industrial products.
2. To juxtapose DNA Forensic services to the authorities in Sabah, Forensic DNA Laboratory in Kota Kinabalu Branch was set-up and officially launched by the Honourable Minister of MOSTI on 12th September 2014.

1. Perkhidmatan forensik di Makmal Cawangan diperkukuhkan dengan pertambahan akreditasi kepada American Society of Crime Laboratories Directors/Laboratory Accreditation Board (ASCLD/LAB) – International untuk dua lagi makmal cawangan iaitu Makmal Cawangan Johor dan Pahang pada 28 Februari 2014.
2. Jabatan juga terlibat dalam penyiasatan insiden pesawat MH 370 melalui analisis tompokan minyak yang dihantar oleh Agensi Penguatkuasaan Maritim.
3. Dalam tragedy pesawat MH 17, pihak berkuasa telah memohon khidmat forensik Jabatan Kimia dalam usaha mengenal pasti mangsa yang terkorban dalam nahas tersebut. Pegawai Jabatan telah menyertai Pasukan DVI (Disaster Victim Identification) di Ukraine dan The Hague, Belanda selama tiga minggu untuk membantu pasukan DVI antarabangsa..
4. Dalam usaha mempertingkatkan lagi kesiapsiagaan menangani kejadian krisis/bencana bahan kimia dan senjata kimia pihak Majlis Keselamatan Negara, MKN telah menjalankan latihan amal EX-STORM XIII (Exercise for Special Team Operation and Response Mechanism) yang turut disertai oleh pegawai-pegawai Jabatan Kimia. Latihan ini diadakan bersama Jabatan Bomba dan Penyelamat (JBPM) di perkarangan Menara Berkembar PETRONAS KLCC dan Stesen LRT Rapid KLCC pada 19 September 2014.
5. Membantu Lembaga Urus Air Selangor (LUAS) menjalankan analisis ke atas sample air dari bekas lombong bertujuan untuk mendapatkan sumber air alternatif yang menepati standard WHO untuk air minum.



Pensampelan "tumpahan" bahan kimia semasa latihan ExSTORM  
Sampling of "spilled" chemical during ExSTORM exercise

1. Forensic services of branch laboratories were further strengthened with the accreditation to American Society of Crime Laboratories Directors/Laboratory Accreditation Board (ASCLD/LAB) – International for another two more Laboratories namely Johor and Pahang Branch Laboratory in February 28, 2014.
2. The Department was also involved in the investigation of MH 370 incident through the analysis of oil slick submitted by the Maritime Enforcement Agency.
3. During the flight MH 17 tragedy, the authorities sought forensic services of the Chemistry Department in an effort to identify victims who died in the crash. Department officials were also involved in the DVI (Disaster Victim Identification) team in Ukraine and The Hague, Netherlands for three weeks to assist international DVI teams.
4. In an effort to further improve preparedness to deal with chemicals and chemical weapons crisis/disasters, the National Security Council (NSC) conducted practical EX-STORM XIII (Exercise for Special Operation Team and Response Mechanism) training, which was also attended by officials of the Department of Chemistry. This training was held with the Fire and Rescue Department in the compound of KLCC Petronas Twin Towers and Rapid KLCC LRT Station on 19 September 2014.
5. Provided services to Lembaga Urus Air Selangor (LUAS) in the analysis of water samples from old tin mines to obtain alternative source of water that meets WHO standards for drinking water.

### Enhancing technical expertise

- #### Meningkatkan kepakaran teknikal
1. Konvensyen Kimia telah diadakan pada 27- 28 August 2014 di mana 34 kertas kerja teknikal telah dibentang untuk dikongsi bersama demi meningkat kepakaran pegawai di Jabatan Kimia Malaysia.

1. Technical Convention of Chemistry Department of Malaysia was held on 27- 28 August 2014 in which 34 technical papers were presented to enhance the expertise of officers of the Department.





Pembentangan kertas teknikal semasa  
Konvensyen Kimia 2014

*Presentation of technical paper during  
Konvensyen Kimia 2014*

- Jabatan juga terlibat dalam anjuran bersama persidangan antarabangsa 18th *Malaysian International Chemical Congress* (18MICC) di Putra World Trade Centre, Kuala Lumpur, Malaysia pada 3 - 5 November 2014. Pegawai Kimia juga telah membentangi beberapa kertas kerja semasa persidangan tersebut.

- The Department was the co-organiser of the 18th Malaysian International Chemical Congress (18MICC) at the Putra World Trade Centre, Kuala Lumpur, Malaysia on November 3 to 5, 2014. Several officers of the Department also presented papers during the event.*

### Program CSR

Bagi mempromosikan sains dan teknologi kepada orang awam terutama kepada pelajar-pelajar, beberapa siri pameran di bawah program Kimia ke Desa telah diadakan di Nibong Tebal-Pulau Pinang, Pengkalan Kubor Kelantan, Kuang-Selangor, Serian-Sarawak dan Batu Pahat-Johor.

### CSR programme

*To promote science and technology to the public, especially to students, a series of exhibitions under the Kimia ke Desa programme was held in Nibong Tebal Pulau Pinang, Pengkalan Kubor Kelantan, Kuang Selangor, Serian Sarawak and Batu Pahat Johor.*

### Mesyuarat antarabangsa

Pegawai jabatan telah menghadiri mesyuarat antarabangsa seperti berikut;

- 11th ASEAN *Genetically Modified Food Testing Network Meeting* di Vientiane, Lao PDR pada 14-15hb Ogos 2014.
- Mesyuarat *Establishment and Operation of the ASEAN Food Testing Reference Laboratories Network* di Bandar Seri Begawan, Brunei Darussalam pada 26-27hb Feb 2014.
- Kongres *Vietnam Malaysia International Chemical Congress* (VMICC) 2014 di Hanoi, Vietnam pada 7 - 9 November 2014.

### Involvement in international meetings

*Officers of the department attended several international meetings namely;*

- 11th ASEAN Genetically Modified Food Testing Network Meeting in Vientiane, Lao PDR on 14-15th August 2014.*
- Establishment and Operation of the ASEAN Food Network Testing Reference Laboratories meeting in Bandar Seri Begawan, Brunei Darussalam on 26-27th Feb 2014.*
- Vietnam Malaysia International Chemical Congress (VMICC) 2014 in Hanoi, Vietnam on 7-9th November 2014.*

# PUSAT SAINS NEGARA

## NATIONAL SCIENCE CENTER



### Pameran Tetap

Pusat Sains Negara (PSN) menawarkan sebanyak 11 galeri pameran tetap, merangkumi aspek seperti biologi, biodiversiti, sains kesihatan, fizik, kimia, astronomi, penerbangan, inovasi dan teknologi. Seramai 590,978 pengunjung telah hadir ke PSN pada tahun 2014.

### Pameran Bertema

Penganjuran pameran bertema adalah salah satu daripada pendekatan inovatif yang paling berkesan dan terpadu dalam usaha mendinamikan kandungan pameran PSN disamping menggalakkan kunjungan berulang. Sebanyak tiga pameran bertema telah dianjurkan pada tahun 2014 iaitu:

#### Science of Fear (30 Disember 2013 - 22 Mei 2014)

Pameran ini merungkai fenomena perasaan takut dari perspektif saintifik seperti persepsi ketakutan, peranan sistem limbik dalam otak dan tindak balas fisiologi ketika berasa takut. Seramai 34,750 pengunjung telah mengunjungi pameran ini.

**590,978**  
**PENGUNJUNG**  
**KE** **PSN**



### Exhibition Galleries

Pusat Sains Negara (PSN) provides 11 permanent exhibition galleries, which include topics, such as, biology, biodiversity, health science, physics, chemistry, astronomy, aviation, innovation and technology. A total of 590, 978 people visited PSN in 2014.

### Thematic Exhibitions

Thematic exhibition is one the most innovative and effective approach in diversifying PSN's scientific contents while encouraging repeated visits to PSN in a shorter time. PSN had organized three thematic exhibitions in 2014, and those are:

#### Science of Fear (30 December 2013 - 22 May 2014)

This exhibition unravels the explanation behind fear phenomenon from scientific perspective such as fear perception, role of brain's limbic system and physiological reactions during fearful experience. About 34,750 people have visited this exhibition.



Pengunjung sedang bermain dengan haiwan eksotik yang dipamerkan dalam Pameran Science of Fear.

Visitors play with exotic animals in Science of Fear Exhibition.

### 1001 Inventions: Kegemilangan Tamadun Muslim (31 Ogos 2013 - 30 Jun 2014)

Pameran ini telah dianjurkan dengan kerjasama syarikat swasta Science Discoveries Sdn. Bhd. Pameran diadakan bertujuan meningkatkan pengetahuan masyarakat mengenai reka cipta dan inovasi semasa Zaman Keemasan Islam dari abad ke-7 hingga ke-17 yang meliputi empayar Tamadun Islam dari negara China ke Sepanyol. Ia terbahagi kepada lima zon iaitu kejuruteraan, hospital, alam semesta, dunia dan sekolah. Pameran ini telah berjaya menarik kehadiran seramai 20,178 pengunjung.

### Whodunit? Murder Mystery At Menagerie Park (8 September 2014 - 28 Februari 2015)

Pameran yang bertemakan sains forensik itu adalah berkenaan kes jenayah yang telah berlaku di zoo 'Menagerie Park' dan para pengunjung menyiasat dan menyelesaikan kes tersebut dengan menggunakan teknik-teknik sains forensik interaktif yang telah disediakan. Seramai 149,976 pengunjung telah berkunjung ke pameran itu.

### Festival Sains PSN 2014

Festival Sains PSN 2014 dapat memberi kesedaran kepada masyarakat bahawa sains dan teknologi amat rapat dengan kehidupan seharian dan dapat mencetus serta menyemai minat rakyat Malaysia ke arah pembelajaran sains dan teknologi sepanjang hayat. Bertemakan *Solve the Mystery*, #ChallengeYourself. Festival kali ini menawarkan pelbagai aktiviti yang berkaitan dengan penyelesaian misteri berasaskan sains dan teknologi. Festival Sains merupakan program kemuncak aktiviti pembudayaan



Majlis Perasmian 1001 Inventions: Kegemilangan Tamadun Islam yang disempurnakan oleh YAB Tan Sri Dato' Haji Muhyiddin bin Haji Mohd Yassin.

1001 Inventions: Kegemilangan Tamadun Islam had launched by YAB Tan Sri Dato' Haji Muhyiddin bin Haji Mohd Yassin.



KSU MOSTI merasmikan Festival Sains 2014 dan pameran bertema Whodunit? secara serentak.

KSU MOSTI officiated the Festival Sains 2014 together with Whodunit? thematic exhibition.



Pengunjung yang datang ke PSN berpeluang merasai pengalaman aktiviti bermain Giant Bubble secara percuma.

PSN Visitors have a chance to play with Giant Bubble activity for free during Festival Sains 2014.

### 1001 Inventions: Kegemilangan Tamadun Muslim (31 August 2013 - 30 June 2014)

This exhibition was collaborated with Science Discoveries Sdn. Bhd. Its aims to increase the knowledge of society on inventions and innovations during Islamic Golden Age from 7th to 17th century encompassing Muslim Civilization Empire as far as from China to Spain. This exhibition was divided into five zones, such as, engineering, hospital, universe, world and school. This exhibition had managed to attract 20,178 visitors in 2014.

### Whodunit? Murder Mystery At Menagerie Park (8 September 2014 - 28 Februari 2015)

This science forensic-themed exhibition revolved around a crime occurred at a zoo called 'Menagerie Park', and visitors needed to investigate and solve the crime using the latest science forensic techniques. About 149,976 people visited this exhibition.

### Festival Sains PSN 2014

Festival Sains PSN 2014 was held as a platform to nurture public interest towards science and technology awareness learning throughout their daily life. Using the theme 'Solve the Mystery, #ChallengeYourself', this year's festival features a variety of mystery solving activities incorporating scientific skills and current technology. This is the pinnacle of PSN science awareness programme for 2014 with a total of 20,000 visitors attending this six days event.

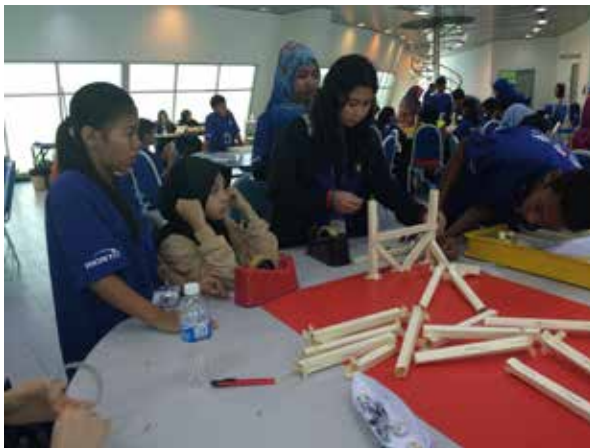
sains, teknologi dan inovasi di PSN. Seramai hampir 20,000 pengunjung telah hadir ke festival tersebut.

### Program Science Kids

Program tahunan ini dianjurkan dengan kerjasama dari Kementerian Pendidikan Malaysia (KPM) untuk mencetus dan merangsang minat pelajar melalui pengalaman pembelajaran STI yang menyeronokkan. Kumpulan yang disasarkan ialah pelajar luar bandar berumur 13 dan 14 tahun dari setiap negeri di seluruh Malaysia. Seramai 74 peserta telah dipilih menyertai program ini termasuk dengan penglibatan 10 orang guru. Tema pada tahun ini ialah Inovasi Reka Cipta dengan menggunakan projek Paper Roller Coaster.

### Special Science Day

Program *Special Science Day* merupakan Tanggungjawab Sosial Korporat (CSR) PSN yang dianjurkan khas bagi golongan kurang berkemampuan dan kurang upaya sebagai kumpulan sasaran. Konsep tahun ini menekankan tema alam semula jadi di mana aktiviti yang dijalankan melibatkan konsep sains mengenai air, udara, warna (pelangi), bunyi-bunyian dan hidupan liar. Seramai 3,300 peserta telah mengikuti program ini yang berlangsung selama tiga hari di PSN Kuala Lumpur. Para peserta terdiri daripada sekolah pendidikan khas, persatuan OKU, persatuan penduduk dan badan-badan koporat.



Pelajar menguji kreativiti dengan mereka cipta Roller Coster menggunakan kertas secara berkumpulan dalam program Science Kids PSN.

*A group of students were tested in their creativity in building Roller Coster using paper in Science Kids programme.*



Suasana ceria para pengunjung yang datang ke program Special Science Day.

*Visitor wonderful moment captured in one of Special Science Day program.*

### Science Kids Programme

*Science Kids is an annual programme organised by PSN in collaboration with the Ministry of Education (MOE) to trigger and stimulate student interest on STI through a fun learning experience. A total of 74 participants consist of students aged range between 13 and 14 years old, were selected to participate in this program with the involvement of 16 teachers, that represent the 13 states and 3 federal regions of Malaysia. The theme of this year is Innovation Invention using Paper Roller Coaster project.*

### Special Science Day

*Special Science Day is one of PSN's Corporate Social Responsibility (CSR) programme, targeted for people with disabilities and underprivileged community. This year's concept emphasized on nature that incorporate elements such as water, wind, color (rainbow), sound and wildlife to explain the life science concept. About 3,300 participants involving Special-Edu students, OKU associations, community associations and corporate bodies, were invited to this event which lasted for three days in PSN Kuala Lumpur.*

#### SPECIAL SCIENCE DAY

telah melibatkan 3,300 peserta yang terdiri daripada pelajar pendidikan khas, persatuan OKU, persatuan pendudukan dan badan korporat.

*involved 3,300 participants from students of special education, the Association of DISABLED PERSONS, the occupation and corporate bodies.*

# AKADEMI SAINS MALAYSIA (ASM) ACADEMY OF SCIENCES MALAYSIA



YAB Tun Mahathir Mohamed melancarkan buku biografi Academician Emeritus Professor Tan Sri Datuk Dr Omar Abdul Rahman FASc.

*YAB Tun Mahathir Mohamed launched the biography of Academician Professor Emeritus Tan Sri Datuk Dr Omar Abdul Rahman FASc.*

## **Akademi Sains Malaysia (ASM)**

Akademi Sains Malaysia menggalak dan memupuk pembangunan sains, kejuruteraan dan teknologi di negara ini, serta menyediakan forum untuk pertukaran idea di kalangan ahli sains, jurutera dan ahli teknologi.

## **Kajian**

Pada bulan November 2014, ASM telah berjaya menganjurkan Forum Kebangsaan Agenda Mega Sains: Malaysia 2050. Forum ini bertujuan menyebarkan penemuan dan cadangan daripada lima sektor yang dikaji dalam Sains Mega 2.0, mendapatkan maklum balas daripada pihak berkepentingan dan menyalurkan

## **Academy of Sciences Malaysia (ASM)**

*Academy of Sciences Malaysia promotes and fosters the development of science, engineering and technology in the country, as well as provides a forum for the interchange of ideas among scientists, engineers and technologists.*

## **Studies**

*In November 2014, ASM had successfully organised the National Forum on Mega Science Agenda: Malaysia 2050. The aim of the forum was to disseminate findings and recommendations from the five sectors studied in Mega Science 2.0, to obtain feedback from stakeholders and to channel input for national*

input untuk perancangan negara, dasar dan strategi. **Kajian Rangka Kerja Mega Sains 2.0 untuk Pembangunan Berterusan Kebangsaan telah dimulakan dengan memberi tumpuan kepada sektor perumahan, infrastruktur, pengangkutan, elektrik dan elektronik dan persekitaran.** Sektor-sektor ini telah dikenal pasti sebagai enjin pertumbuhan yang berpotensi untuk memacu ekonomi negara. Output kajian ini telah mendedahkan beberapa bidang yang memerlukan penglibatan STI dan laporan ini dijadualkan siap pada tahun 2015.

ASM juga berusaha untuk menanamkan agenda pembangunan mampan dalam penggubalan dasar dengan memberi tumpuan kepada cabaran tempatan selain perspektif serantau dan global. Cabaran-cabaran ini jelas dalam bidang seperti air, tenaga, keselamatan makanan dan ekuiti. Sebagai contoh, ASM telah menjalankan enam kajian dalam sektor air melalui badan bertindak ASM.

### Pembangunan Modal Insan

ASM telah menganjurkan pertandingan Cabaran Sains Nasional (NSC) dengan kerjasama ExxonMobil Malaysia, Kementerian Pendidikan dan Jaringan Saintis Muda Akademi Sains Malaysia (YSN-ASM). Buat pertama kalinya pada tahun 2014, cabaran peringkat awal yang telah dijalankan secara atas talian di seluruh Malaysia, telah mendapat penyertaan daripada 2,891 buah pasukan.



YBhg Tan Sri Dr Ahmad Tajuddin Ali FASc, Presiden Akademi Sains Malaysia sedang memberi ucapan ketika Majlis ASM Eid Ul-Fitr di Akademi Sains Malaysia.

*YBhg Tan Sri Dr Ahmad Tajuddin Ali FASc, President of the Academy of Sciences Malaysia was giving a speech during ASM Eid Ul-Fitr Assembly at the Academy of Sciences Malaysia.*



Pemenang Pertandingan Cabaran Sains Nasional 2015, bersama mock cheque kemenangan hadiah utama.

*Winner of the National Science Challenge 2015, with mock check winning the top prize.*

*planning, policies and strategies. **The Mega Science Framework Study 2.0 for Sustained National Development was initiated by focusing into housing, infrastructure, transportation, electrical and electronics and environment sectors.** These sectors have been identified as potential engines of growth to drive the economy of the nation. The outputs of this study have also revealed several areas that require STI intervention and the reports scheduled for completion in 2015.*

*ASM also strives to embed the sustainable development agenda into policy-making by focusing on local challenges; while keeping in mind, regional and global perspectives. These challenges are evident in areas such as water, energy, food security and equity. For instance there are six water sectors studies undertaken through the ASM Task Forces.*

### Human Capital Development

*ASM has organised the National Science Challenge competition (NSC), in partnership with ExxonMobil Subsidiaries Malaysia Incorporated, the Ministry of Education and the Young Science Network (YSN-ASM). For the first time in 2014, the preliminary level challenge of NSC was conducted online across Malaysia, which welcomed participation of 2,891 teams.*

Pertandingan sains tahunan yang menyasarkan pelajar sekolah menengah ini direka untuk menggalakkan dan merangsang minat pelajar dalam bidang sains dan matematik di Malaysia. Sekolah Menengah Kebangsaan King George V, Negeri Sembilan telah diumumkan sebagai juara NSC 2014, dan telah membawa pulang Piala Cabaran Perdana Menteri, peluang untuk menyaksikan Majlis Anugerah Nobel dan lawatan pelajar ke Stockholm, Sweden.

Selain itu, ASM juga menganjurkan lima program latihan untuk meningkatkan kemahiran insaniah saintis dan penyelidik seperti penulisan teknikal, kemahiran komunikasi, pedagogi dan latihan amali dalam teknik penyelidikan. Sehingga kini, seramai 250 peserta telah mendapat manfaat daripada program-program latihan ini.

Akademi juga turut melantik YAB Dato' Sri Mohd Najib Tun Abdul Razak, Perdana Menteri Malaysia sebagai Felo Kehormat ASM. Pelantikan ini merupakan pengiktirafan terhadap sumbangan beliau yang tidak ternilai dalam memacu negara ke hadapan melalui inisiatif progresif dan dinamik dalam bidang sains, teknologi dan inovasi. Selain itu, ASM juga telah mengenal pasti dan mengiktiraf 34 saintis penyelidik Malaysia yang mempunyai prestasi dan pencapaian yang cemerlang dalam bidang masing-masing di sektor R&D di Malaysia sebagai Top Research Scientists Malaysia (TRSM) bagi tahun 2014. ASM juga telah mengiktiraf lima saintis muda sebagai ahli Jaringan Saintis Muda ASM (ASM-YSN) dan 19 orang saintis, jurutera dan ahli teknologi unggul di Malaysia sebagai Felo Akademi Sains Malaysia.

*The annual science competition which targets secondary school students is designed to promote student's interest in science and mathematics in Malaysia. Sekolah Menengah Kebangsaan King George V, Negeri Sembilan was announced as the champion of NSC 2014, taking home the Prime Minister's Challenge trophy, the opportunity to witness the Nobel Prize Ceremony and a study visit to Stockholm, Sweden.*

*Apart from that, ASM has organised five training programme to enhance the soft skills of scientists and researchers such as technical writing, communication skill, pedagogy and hands-on training in research techniques. To date, there are reportedly 250 participants who have benefitted from these training programmes.*

*The Academy also elected YAB Dato' Sri Mohd Najib Tun Abdul Razak, the Prime Minister of Malaysia as an Honorary Fellow of ASM. The election was in recognition of his invaluable contribution in driving the nation forward through progressive and dynamic initiatives in Science, Technology and Innovation (STI). In addition, ASM has also identified and announced 34 Malaysian's research scientists as the 2014 Top Research Scientists Malaysia for their outstanding performance and achievements in their respective fields of R&D in Malaysia. ASM has also recognised five young scientists as members of ASM-Young Scientist Network (ASM-YSN), as well as 19 prominent scientists, engineers and technologist in Malaysia as Fellows of the Academy of Sciences Malaysia.*

**YAB Dato' Sri Mohd Najib Tun Abdul Razak, Perdana Menteri Malaysia ketika menerima gelaran Felo Kehormat Akademi Sains Malaysia.**

*YAB Dato' Sri Mohd Najib Tun Abdul Razak, Prime Minister of Malaysia when he received the title of Honorary Fellow of the Academy of Sciences Malaysia*







# LAPORAN LAIN-LAIN AGENSI

- ◆ Yayasan Inovasi Malaysia
- ◆ Malaysia Debt Venture Berhad (MDV)

## OTHER AGENCY REPORT

- ◆ *Malaysian Foundation for Innovation*
- ◆ *Malaysia Debt Ventures Bhd (MDV)*

# YAYASAN INOVASI MALAYSIA MALAYSIAN FOUNDATION FOR INNOVATION



## Jejak Inovasi 2014

Jejak Inovasi merupakan aktiviti mencari inovasi yang dihasilkan oleh masyarakat akar umbi serta menggalakkan penyertaan masyarakat setempat bagi meningkatkan tahap inovasi mereka. Menerusi program Jejak Inovasi ini, produk inovasi yang berpotensi akan dibangunkan melalui pelbagai platform yang telah disediakan oleh pihak swasta mahupun awam. Pada tahun 2014, Jejak Inovasi telah diadakan di Ranau, Kuala Terengganu, Kuantan, Sandakan, Pangkalan Kubor, Shah Alam, Kuala Lumpur, Kuching, Parit Buntar dan Keningau. Produk-produk yang dijejaki didaftarkan dan dimasukkan ke dalam pangkalan data YIM iaitu 'Innomap system'.

## Jejak Inovasi 2014

*Jejak Inovasi is an activity to explore innovations produced by the grassroots and encourage the participation of local communities while raising their level of innovativeness. Through Jejak Inovasi, innovations with potential will be further developed through various platforms provided by both the private and public. In 2014 Jejak Inovasi was held in Ranau, Kuala Terengganu, Kuantan, Kuantan, Kuantan Base, Shah Alam, Kuala Lumpur, Kuching, Parit Buntar and Keningau. Products scouted were then registered and entered into the 'Innomap system' database.*



Tahun 2014 menyaksikan kejayaannya khususnya dalam membantu melindungi dan mendaftarkan harta intelek dengan Perbadanan Harta Intelek Malaysia (MyIPO) bagi enam (6) produk inovasi akar umbi iaitu Wau Lipat, Mesin Pengorek untuk penanaman pokok, Jentera Membajak, Sistem dan Kawalan Akses Terhad serta Sistem Penanaman Menegak.

*The year 2014 was successful in helping to protect intellectual property and register with the Intellectual Property Corporation of Malaysia (MyIPO) for six (6) product grassroots innovations, namely Wau Folding Machines Excavators for tree planting, plowing Machinery, Systems and Access Control Systems Limited and Investment Vertical.*

Zon Zone	Negeri State	Lokasi Location	Sasaran Target	Pencapaian Achievement
6	12	18	150	443

### Innomap

Sistem pintar ini dibangunkan oleh YIM dengan berasaskan *System Artificial Intelligence* dengan konsep sumber terbuka. Ia merupakan pusat penyimpanan data berkaitan inovasi akar umbi di Malaysia. Jumlah data inovasi yang telah direkodkan ke dalam sistem ini adalah sebanyak 1,400 produk inovasi.

### Innomap

*This Artificial Intelligent system was developed by YIM based on open source concept as a data storage center on grassroots innovations in Malaysia. Number of innovations with complete data recorded in the system is 1,400.*

### Program Sukarelawan Penggerak Inovasi 1Malaysia (1CATs)

Program Sukarelawan Penggerak Inovasi 1Malaysia (1CATs) merupakan program meningkatkan semangat kesukarelawanan belia di peringkat nasional melalui program pembudayaan inovasi YIM. 1CATs merupakan platform efektif dalam melahirkan golongan belia yang berinovasi sambil menerapkan kesedaran mengenai cara hidup berinovasi dalam kalangan rakyat Malaysia.

### 1Malaysia Acceleration of Innovation (1CATs)

*Volunteer Program, a programme to encourage volunteerism among youth at the national level through YIM's innovation culture programme. 1CATs is an effective platform producing innovative youth while instill the awareness of innovational way of life among Malaysians.*

### YIM IDEATION

Program UMW YIM Ideation bertujuan untuk melahirkan lebih ramai pereka cipta muda terutama di peringkat akar umbi dengan memberi fokus kepada pelajar sekolah. Objektif utama program ini adalah menjana daya pemikiran kreatif dan inovatif serta membangunkan idea dan inovasi baru yang dapat membantu meningkatkan taraf hidup masyarakat setempat di Malaysia.

### YIM IDEATION

*UMW YIM Ideation Programme aims to produce more young inventors especially at the grassroots level by focusing on school students. The main objective of this programme is to generate creative thinking, innovativeness and develop new ideas and innovations products that can help improve the lives of local communities in Malaysia.*





### **School Club Innovation Toolkit**

*School Club Innovation Toolkit* adalah sebuah program yang terdiri daripada satu set garis panduan, aktiviti dan alat bantuan mengajar untuk para guru menjalankan aktiviti-aktiviti yang inovatif dalam persatuan dan kelab-kelab sekolah yang sedia ada. Ia merupakan sebuah program yang menggunakan pendekatan pembelajaran STEM iaitu (Science, Technology, Engineering, and Mathematic).

### **YIM Berinovasi Di Pahang**

Hari Inovasi Peringkat Negeri Pahang 2014 yang dianjurkan oleh Pejabat Setiausaha Kerajaan Negeri (SUK) Pahang dengan kerjasama Yayasan Inovasi Malaysia (YIM) telah diadakan pada 13 – 14 Oktober 2014 di Dewan Jubli Perak, Sultan Ahmad Shah, Kuantan, Pahang. Program dua hari yang telah dirasmikan oleh YBhg Dato' Sri Diraja Haji Adnan bin Haji Yaakob ini telah berjaya menarik lebih 1,000 orang pengunjung. Pelbagai program diadakan antaranya ceramah oleh ejen pencetus inovasi, ikon dan selebriti, demonstrasi inovasi, pameran dan pertandingan inovasi serta Teh Tarik Talk (3T).

### **School Club Innovation Toolkit**

*School Club Innovation Toolkit 2014 is a programme that consists of a set of guidelines, activities and teaching aids for teachers conducting innovative activities in associations and clubs existing school. It is a programme that uses the STEM learning approach (Science, Technology, Engineering, and Mathematics).*

### **Yim Leads Innovation Awareness At Pahang**

*Pahang State Level Innovation Day 2014 was organized by the Office of the State Secretary (SUK) Pahang Malaysia in collaboration with the Foundation for Innovation (YIM) was held on 13 to 14 October 2014 in Silver Jubilee Hall, Sultan Ahmad Shah, Kuantan, Pahang. The two-day programme which was officiated by Dato Sri Diraja Haji Adnan bin Haji Yaakob has attracted more than 1,000 visitors. Various programmes have been organised such as talk by agents innovator, icons and celebrities, innovation demonstration, exhibition and innovation competition and Teh Tarik Talk (3T).*

## **Guinness Book World of Records: 'Most Selfie Potrait Photographs (Selfies) Taken in 1 Hour'**

Pada 31 Ogos 2014 yang lalu bersempena dengan sambutan kemerdekaan yang ke-57, YIM telah memecahkan sebuah rekod dunia (Guinness World Records) melalui acara 'Menangkap gambar potret sendiri (selfie) terbanyak dalam masa satu (1) jam. Daripada 680 orang peserta tersebut, 613 orang telah diisytiharkan sebagai pemecah rekod dunia *Guinness Book of World Records* bagi *Most Self Potrait Photographs (Selfies) Taken in 1 Hour*.

*On August 31, 2014 in conjunction with the 57th Merdeka Celebration, YIM broke a world record (Guinness World Records) in the "Most Self Portrait Photographs (selfies) Taken in 1 Hour" category. Of the 680 participants, 613 people have been declared as world record breaker Guinness Book of World Records for Most Self Portrait Photographs (selfies) Taken in 1 Hour.*

# MALAYSIA DEBT VENTURES BERHAD (MDV)



## Anugerah

Pembiaya Paling Inovatif di Malaysia di *Top Asia Corporate Ball 2014*

Majlis Pelancaran Strategi Korporat Baharu MDV di Mandarin Oriental Kuala Lumpur pada 18 Disember 2014. Pelancaran strategi korporat baharu ini adalah bertujuan untuk menyokong perusahaan kecil dan sederhana (PKS) dalam sektor pertumbuhan baharu termasuklah nanoteknologi, bahan material canggih, robotik, elektrik dan elektronik, serta pembaikan dan baik pulih penyelenggaraan. Pembiayaan berjumlah RM200 juta telah diperuntukkan bagi menyokong pelan tersebut.

Satu perjanjian kerjasama telah ditandatangani bersama Unit Peneraju Agenda Bumiputra (TERAJU) dan diserahkan menerusi sesi pertukaran perjanjian pada 18 Disember 2014. Menerusi perjanjian tersebut, TERAJU akan memperuntukkan RM500,000.00 sebagai geran untuk para pemenang Program Keusahawanan Bumiputera Baharu (SUPERB) bagi mewujudkan pengusaha yang berkualiti. MDV akan menguruskan pengeluaran geran, di samping melatih serta menjadi mentor kepada peserta-peserta yang dipilih.

## 2014 Events and Activities for MOSTI 2014 Report



Timbalan Menteri Kewangan, Datuk Ahmad Maslan (dua dari kiri) melancarkan strategi korporat baharu MDV bersama Pengerusi MDV, Tan Sri Zarinah Anwar (dua dari kanan)

*Datuk Ahmad Maslan (second from left), Deputy Minister of Finance launched MDV's New Corporate Strategy with Tan Sri Zarinah (second from right)*

## Awards

*Malaysia's Most Innovative Financier at Top Asia Corporate Ball 2014*

*Was launched of MDV's New Corporate Strategy on 18 December 2014 at Mandarin Oriental Kuala Lumpur. The Launch marks MDV's new direction to support new growth areas which include Nanotechnology, Advanced Materials, Robotics & Artificial Intelligence, Electrical & Electronics, Aviation & Aerospace, Maintenance Repair & Overhaul (MRO), Oil & Gas and Transportation. MDV has allocated RM200 million in financing to support these new sectors.*

*Signing and exchange of Agreement between MDV and TERAJU for the SUPERB programme. Under the Agreement, TERAJU will allocate an amount of RM500,000.00 as a grant for each winner of the SUPERB programme in developing quality entrepreneurs. MDV will manage the disbursement of the grant, besides providing coaching and mentoring to the selected recipients.*

Satu perjanjian kerjasama telah ditandatangani bersama Malaysian Global Innovation and Creative Centre (MaGIC) dan diserahkan menerusi sesi pertukaran perjanjian pada 18 Disember 2014. Perjanjian tersebut adalah berkaitan dengan pelaburan MDV sebanyak US\$3 juta dalam projek MaGIC Cerebro.

Satu perjanjian kerjasama telah ditandatangani bersama BiotechCorp dan diserahkan menerusi sesi pertukaran perjanjian bersempena Pelancaran BioMalaysia dan Bioekonomi Asia Pasifik 2014 yang disaksikan oleh YAB Perdana Menteri. Kerjasama tersebut akan menjadi pemangkin dalam pertumbuhan sektor Bioteknologi melalui Program Transformasi Bioekonomi (BTP). MDV bertindak sebagai rakan kongsi dan pengurus dana dalam menyokong program BTP.

Satu perjanjian persefahaman telah ditandatangani bersama SME Corp Pelancaran SMIDEX 2014 yang turut disaksikan oleh YAB Perdana Menteri Malaysia. Perjanjian ini merupakan satu usahasama bagi membangunkan usahawan teknologi dalam sektor berteknologi tinggi seperti pencahayaan/diod pemancar cahaya, aeroangkasa, industry peranti perubatan dan penyelenggaraan, pembaikan dan baik pulih. Kemudahan pinjaman hingga ke RM500 Juta akan disediakan oleh MDV untuk para PKS di bawah perjanjian ini

'MDV Tech Funding Day' untuk para usahawan serta syarikat yang berasaskan teknologi di Utara pada 21 Mei 2014 di Sains@USM. Hari terbuka ini merupakan sebuah kolaborasi bersama Koridor Utara (NCIA) dan Universiti Sains Malaysia (USM) yang bertujuan untuk berkongsi panduan dengan para usahawan dalam sektor teknologi berkaitan peluang untuk mendapatkan dana, produk dan perkhidmatan yang disediakan oleh MDV. Beberapa gerai pameran oleh usahawan dan syarikat teknologi yang berjaya turut mempamerkan produk dan servis mereka di Hari Terbuka tersebut.

Tiga sesi seminar dan dialog termasuk 'ICTeh Tarik Talk' telah diadakan di Kuala Lumpur dan Selangor untuk berkongsi kepada syarikat-syarikat termasuk PKS dan pengusaha-pengusaha dalam bidang ICT tentang skim-skim pembiayaan dan kemudahan-kemudahan yang disediakan oleh MDV.

Menyertai 10 aktiviti pameran yang bertujuan untuk memperkenalkan serta mempromosi inisiatif dan skim-skim pembiayaan yang disediakan oleh MDV kepada syarikat-syarikat dan pengusaha-pengusaha dari pelbagai sektor teknologi termasuk ICT, Bioteknologi, Teknologi Hijau dan lain-lain.

*Signing and exchange of Agreement between MDV and Malaysian Global Innovation and Creative Centre (MaGIC) for the Cerebro project. Under the Agreement, MDV has agreed to participate the Project with an investment of USD3.0 million of the total USD10 million startup seed funds.*

*Signing and exchange of Agreement between MDV and BiotechCorp during the Launch of BioMalaysia and Bioeconomy Asia Pacific 2014 witnessed by the Prime Minister. The joint collaboration will further stimulate the growth of the Biotechnology sector in Malaysia through the Bioeconomy Transformation Programme (BTP). MDV serves as the Partner for the fund management in support of the BTP.*

*Signing and exchange of agreement between MDV and SME Corp during the Launch of SMIDEX 2014, witnessed by the Prime Minister. The MoU with SME Corp is an effort to developing the technology entrepreneurs in strategic business sectors in order to boost the growth of Malaysian SMEs in the high technology sectors, such as Solid-State Lighting/ Light-Emitting Diodes (SSL/LED), aerospace, medical devices industry and Maintenance, Repair and Overhaul (MRO). Loan facilities of up to RM500 million is allocated under this Agreement.*

*MDV Tech Funding Day for technopreneurs and technology companies in the Northern Region on 21 May 2014 at Sains@USM. The event, which is a collaboration effort with the Northern Corridor Implementation Authority (NCIA) and Universiti Sains Malaysia (USM) aimed to equip technopreneurs and technology start-ups across the technology sectors including ICT, Biotech, Green Tech and high growth sectors with knowledge and insights on MDV's financing opportunities, scheme and services. The full day event also featured mini exhibition by successful technopreneurs and companies who showcased their products and services.*

*Three seminar and dialogue sessions including ICTeh Tarik Talk, which were held at Kuala Lumpur and Selangor to further promote to companies including SMEs and technopreneurs in the ICT on the availability of financing schemes and facilities provided by MDV.*

*Participated 20 exhibitions with the aim to introduce and promote initiative and financing schemes offered by MDV to companies and technopreneurs from various technology sectors including ICT, Biotechnology, Green Technology and other emerging technologies*



Pertukaran perjanjian antara Datuk Md Zubir Ansori Yahaya (depan kiri), Ketua Pegawai Eksekutif MDV dan Encik Husni Salleh (depan kanan), Ketua Pegawai Eksekutif TERAJU.  
*An exchange of document between Datuk Md Zubir Ansori Yahaya (front left), MD/CEO of MDV with Encik Husni Salleh (front right), CEO of TERAJU*



Pertukaran perjanjian antara Datuk Md Zubir Ansori Yahaya (depan kiri), Ketua Pegawai Eksekutif MDV dan Dato' Dr. Mohd Nazlee Kamal (depan kanan), Ketua Pegawai Eksekutif BiotechCorp.  
*An exchange of document between Datuk Md Zubir Ansori Yahaya (front left), MD/CEO of MDV with Dato' Dr. Mohd Nazlee Kamal (front right), CEO of BiotechCorp*



Pertukaran perjanjian antara Datuk Md Zubir Ansori Yahaya (depan kiri), Ketua Pegawai Eksekutif MDV dan Encik Warren Jia (depan kanan), Naib Presiden Program Perhubungan Pelaburan dan Kemajuan.  
*An exchange of document between Datuk Md Zubir Ansori Yahaya (front left), MD/CEO of MDV with Mr Warren Jia (front right), Vice President of Investor Relation & Acceleration Programme*



Pertukaran perjanjian antara Datuk Md Zubir Ansori Yahaya (depan kiri), Ketua Pegawai Eksekutif MDV dan Dato' Hafshah Hashim (depan kanan),  
*Ketua Pegawai Eksekutif SME Corp.*  
*An exchange of document between Datuk Md Zubir Ansori Yahaya (front left), MD/CEO of MDV with Dato' Hafshah Hashim (front right), CEO of SME Corp*

Datuk Md. Zubir (tengah), Pengarah Urusan dan Ketua Pegawai Eksekutif MDV menerima Anugerah 'Malaysia's Most Innovative Technology Financier' di Top Asia Corporate Ball 2014.  
*Datuk Md. Zubir (middle), Managing Director and CEO of MDV receiving the 'Malaysia's Most Innovative Technology Financier' Award at the Top Asia Corporate Ball 2014*







KERATAN  
AKHBAR  
TERPILIH

*SELECTED  
PAPER CUTTING*

KERATAN AKHBAR  
YAHOO! NEWS MALAYSIA  
TARIKH : 24 JANUARI 2014 (JUMAAT)



### MOSTI to push for commercialisation in 2014

**SHAH ALAM (Jan 23)** This year, it is all about commercialisation for the Ministry of Science, Technology and Innovation (MOSTI).

**Launching the Mosti Commercialisation Year (MCY) 2014** today, its minister Datuk Dr Ewin Ebin announced nine fresh initiatives that will act as a framework to boost commercialisation activities.

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With such focus, he said, it could help boost Malaysia's current commercialisation rate of 10%.

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Of this, some 8,000 research projects were approved and they had successfully generated around RM5.2 billion.

Deputy Minister Datuk Dr Abu Bakar Muhammad Dah explained that the target was reasonable for Malaysia and the ministry expects such products to come out from their flagship sectors such as healthcare, biotechnology, food and energy.

"In a developed nation, the commercialisation rate is usually around 10%. So, we expect this commercialisation year, if we could increase from 10% to 15%, it is good. It cannot be a bigger margin, it's logical," he said.

KERATAN AKHBAR  
www.fz.com  
TARIKH : 24 JANUARI 2014 (JUMAAT)



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### Industri Dan Penyelidik Bina Ekosistem Inovasi Mampu - Muhyiddin



**KUALA LUMPUR, 1 Nov (Bernama)** – Industri tempatan perlu lebih aktif perkembangan sains dan pemuliharaan sains dengan penyediaan tempa pembangunan inovasi terfokus dan mampan, kata Tan Sri Muhyiddin Yassin.

Terdahar Perdana Menteri berkata dalam dua hala itu perlu menjadi satu sinergi kepatutan dan mencapai perubahan radikal.

Justeru, saya berharap platform seperti Malaysia Laboratories For Academic Collaboration (MYLAB) dapat dimanfaatkan sepenuhnya oleh semua sektor swasta terutama pada majlis Anugerah Inovasi Negara 2014 di Pusat Dagangan Dunia Putra (PWTC) di sini, malam ini.

MYLAB dibubuhkan tahun lepas dengan peruntukan RM50 juta bagi buatkan memperkukuh perhubungan biotek dan inovasi antara penyelidik di universiti dan industri.

Justeru, katanya adalah penting mewujudkan kerjasama Perindustrian Kecil dan Sederhana (PKS), yang mewakili hampir 90 peratus peragaan di negara ini, turut sama meningkatkan komitmen dan usaha untuk memajukan budaya inovasi dan kreatif.

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KERATAN AKHBAR  
ASTRO AWANI (http://www.astroawani.com)  
TARIKH : 2 NOVEMBER 2014 (AHAD)



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KERATAN AKHBAR  
MY NEWS HUB (http://mynewsweb.com)  
TARIKH : 2 NOVEMBER 2014 (AHAD)



### Industri Dan Penyelidik Bina Ekosistem Inovasi Mampan



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BERITA ONLINE  
AMAZON MEDIA (http://www.amazon.com)  
TARIKH : 14 OGOS 2014 (KHAMIS)



### Pameran Pengkomersilan MOSTI 2014 Diadakan di SACC Mall Shah Alam



Kementerian Sains, Teknologi & Inovasi (MOSTI) dalam mempromosikan dan mengkomersilkan produk sains tempatan pada hari ini telah memulakan Pameran dan Pengkomersilan MOSTI 2014 di Shah Alam Convention Centre. Pameran yang bermula dari 13 Ogos sehingga 15 Ogos ini bertujuan untuk memperkenalkan produk-produk baru serta keupayaan produk perniagaan kepada umum.

Pada hari ini juga Menteri Sains, Teknologi & Inovasi, YB Datuk Dr Ewin Ebin turut melancarkan Deklarasi Produk dan Perkhidmatan Penyelidikan, Pembangunan dan Pengkomersilan bertujuan untuk menyasarkan dan memajukan perniagaan sains.

BERITA ONLINE  
BERNAMA.COM  
TARIKH: 01 NOVEMBER 2014 (SABTU)



### Industri Dan Penyelidik Bina Ekosistem Inovasi Mampu - Muhyiddin



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BERITA ONLINE  
BERNAMA.COM  
TARIKH: 01 NOVEMBER 2014 (SABTU)



### Mosti Capai Sasaran Pengkomersilan Produk Tahun Ini

**KUALA LUMPUR, 1 Nov (Bernama)** – Kementerian Sains, Teknologi dan Inovasi telah mencapai sasaran pengkomersilan produk perniagaan sains dan pembangunan (R&D) 60 produk tahun ini dengan perolehan lebih lagi produk baharu.

**Menyatakan, Datuk Seri Ewin Ebin** berkata, ia merupakan kejayaan besar kerajaan memajukan sains dan inovasi.

"Ini prestasi positif bahawa perkhidmatan yang disediakan kerajaan kepada perniagaan perniagaan, agensi swasta dan semua tempatan telah meningkatkan perolehan dalam lebih 2014 di sini, hari ini.

Menyatakan Tahun Pengkomersilan Mosti (MCY 2014) yang diumumkan awal tahun ini, 60 produk ini serta perkhidmatan perniagaan perniagaan sains dan pembangunan perniagaan perniagaan sains dan inovasi.

Dr Ewin mengumumkan perolehan perniagaan produk baru ini akan berterusan sehingga 2014 dengan sasaran keseluruhan 100 produk R&D.

Menyatakan, ia samping kejayaan MCY 2014, masih lagi terdapat kekurangan perniagaan perniagaan produk dan inovasi perniagaan, teknologi sains dan dan kreatif sains.

Berlaku kerjasama sains perniagaan yang akan membantu sektor ini pada masa depan untuk menghasilkan produk perniagaan sains dan inovasi.

Dr Ewin berkata, bagi ini dia juga mengemukakan perniagaan sains dan inovasi produk R&D yang akan membantu perniagaan sains dan inovasi.

"Pengumuman sains tempatan akan membantu perniagaan sains dan inovasi produk di pasaran.

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KERATAN AKHBAR  
www.theedgemalaysia.com  
TARIKH : 24 JANUARI 2014 (JUMAAT)



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# MOSTI komersial produk R&D ke pasaran antarabangsa

### Enam dana bantu usahawan Bumiputera berdaya saing



Enam dana bantu usahawan Bumiputera berdaya saing

Terdapat enam dana yang diperuntukkan khas untuk membantu usahawan Bumiputera berdaya saing di pasaran antarabangsa. Enam dana tersebut ialah Dana Pembiayaan Riset dan Inovasi (DRIP), Dana Pembiayaan Riset dan Inovasi (DRIP), Dana Pembiayaan Riset dan Inovasi (DRIP), Dana Pembiayaan Riset dan Inovasi (DRIP), Dana Pembiayaan Riset dan Inovasi (DRIP), Dana Pembiayaan Riset dan Inovasi (DRIP).



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## Penyelidikan setahun cari bahan bunuh kuman

Melalui penyelidikan selama setahun, para penyelidik telah menemui bahan bunuh kuman yang berkesan. Penyelidikan ini bertujuan untuk mencari bahan-bahan yang dapat membunuh kuman dengan selamat dan berkesan. Penyelidikan ini melibatkan kerjasama antara beberapa institusi dan pakar-pakar dalam bidang ini.



Penyelidikan setahun cari bahan bunuh kuman



## Cermin kaca kalis peluru, antiletupan standing luar negara

Suatu jenis cermin kaca kalis peluru yang tahan letupan telah dihasilkan oleh para penyelidik. Cermin ini mempunyai ciri-ciri khusus yang menjadikannya sangat berguna dalam industri pertahanan dan keselamatan. Penyelidikan ini telah menghasilkan produk yang siap sedia untuk dipasarkan ke luar negara.



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# Plat khas dilengkapi GPS

### Teknologi baru kesan lokasi kenderaan



Plat khas dilengkapi GPS

Teknologi baru ini akan membolehkan pengguna untuk melacak lokasi kenderaan mereka secara real-time. Teknologi ini menggunakan sistem GPS yang canggih untuk memberikan maklumat yang tepat mengenai lokasi kenderaan. Ini adalah langkah yang signifikan dalam meningkatkan keselamatan dan kecekapan sistem navigasi.



Penyelidikan ke pasaran

## Penyelidikan ke pasaran

### MOSTI mystar 2014 tahun pengemulsaan

MOSTI mystar 2014 telah bermula dengan penuh semangat. Acara ini bertujuan untuk mempromosikan hasil-hasil penyelidikan yang telah dihasilkan oleh para penyelidik. Acara ini akan menampilkan pameran produk-produk inovatif yang dihasilkan melalui penyelidikan-penelitian yang dijalankan oleh MOSTI.



Penyelidikan ke pasaran

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Penyelidikan ke pasaran

# *Sekalung Penghargaan*



Merakam setinggi-tinggi penghargaan dan terima kasih kepada semua pihak yang terlibat dalam penerbitan buku MOSTI 2014

Bahagian-bahagian

Jabatan

Agensi

Akhbar Bercetak

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dan semua pihak yang telah memberi sumbangan dan kerjasama dalam menjayakan penerbitan ini

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*and all those who have contributed to and cooperated in ensuring the success of this publication*





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