AGENSI REMOTE SENSING MALAYSIA (ARSM)
Kementerian Sains, Teknologi dan Inovasi

MALAYSIAN REMOTE SENSING AGENCY
Ministry of Science, Technology and Innovation (MOSTI)

No. 13, Jalan Tun Ismail, 50480 Kuala Lumpur
Tel: 03-2697 3400, Faks: 03-2697 3350
Email: rs@remotesensing.gov.my
Laman Web : www.remotesensing.gov.my

ISSN 1511-1792

Cetakan oleh
Gemilang Press Sdn Bhd
03-6142 2285

Agensi Remote Sensing Malaysia (ARSM) *Malaysian Remote Sensing Agency*

Laporan Tahunan
Annual Report
2010

Laporan Tahunan 2010 *Annual Report 2010*

Agensi Remote Sensing Malaysia (ARSM)
Malaysian Remote Sensing Agency

KANDUNGAN
CONTENT

PROFIL
PROFILE

Objektif

Untuk membangunkan aplikasi remote sensing dan teknologi-teknologi lain yang berkaitan bagi diguna pakai di agensi pelaksana bagi pengurusan pertanian, perikanan, sumber asli, alam sekitar, bencana, keselamatan dan pembangunan tanah negara dengan lebih efektif.

Objective

To develop applications of remote sensing and related technologies for use in operational agencies for more effective management of agriculture, fishery, natural resources, environment, disaster, security and land development of the country.

Visi

Untuk mengoptimumkan penggunaan remote sensing dan teknologi-teknologi lain yang berkaitan bagi pembangunan lestari negara.

Vision

To optimise the use of remote sensing and related technologies for sustainable development of the country.

Misi

Menyediakan penyelesaian menyeluruh dalam aplikasi remote sensing dan teknologi-teknologi lain yang berkaitan, dan perolehan dan pembekalan imej satelit remote sensing secara bersepadu bagi memenuhi keperluan negara.

Mission

Provide total solution in remote sensing and related technologies applications, and centrally acquire and distribute remote sensing images for the requirement of the country.

PROGRAM UTAMA
MAJOR PROGRAMME

Program Penyelidikan dan Pembangunan

i. Menjalankan penyelidikan dalam bidang aplikasi remote sensing, GIS dan teknologi lain yang berkaitan dalam semua sektor pengurusan pengeluaran pertanian, sumber asli, alam sekitar, bencana, keselamatan dan pembangunan tanah negara;

ii. Menjalankan penyelidikan analisis dan pemodelan data ruang dalam persekitaran sistem maklumat geografi (GIS);

iii. Menjalankan penyelidikan untuk membangunkan sistem komputer dan sensor remote sensing; dan

iv. Menyediakan perkhidmatan nasihat teknikal dalam aplikasi remote sensing, GIS dan teknologi lain yang berkaitan.

Program Perkhidmatan Teknikal

i. Mengoperasi dan mengurus pusat khidmat pengguna bagi imej satelit remote sensing dan perkhidmatan lain yang disediakan untuk pengguna;

ii. Mengoperasi dan mengurus stesen bumi bagi penerimaan imej satelit remote sensing;

iii. Mengoperasi dan mengurus pusat maklumat setempat teknologi remote sensing;

iv. Merancang dan melaksanakan program pembangunan modal insan;

v. Mengurus dan menyelenggara sistem perkakasan dan perisian secara dalaman; dan

vi. Merancang perolehan, mengurus dan mengekalkan infrastruktur dan kemudahan.

Research and Development Programme

i. Conduct research on applications of remote sensing, GIS and related technologies in all sectors of agriculture production, natural resources, environment, disaster, security and land development management;

ii. Conduct research in spatial data analysis and modeling in geographic information system (GIS) environment;

iii. Conduct research in the development of remote sensing computer systems and sensors; and

iv. Provide advisory services on applications of remote sensing, GIS and related technologies.

Technical Services Programme

i. Operate and manage user service centre for remote sensing satellite image and related services provided to clients;

ii. Operate and manage remote sensing satellite image ground receiving station; and

iii. Operate and manage a remote sensing technology information one-stop-centre;

iv. Plan and implement human capital development programme;

v. Manage and maintain in-house hardware and software systems; and

vi. Plan the acquisition, manage and maintain infrastructure and facilities.

TERAS STRATEGIK
STRATEGIC THRUST

Teras Strategik 1 :
Pembangunan Pakej Aplikasi Remote Sensing bagi Kegunaan Agensi Pengguna

i. Membangunkan pakej-pakej aplikasi remote sensing untuk digunakan oleh agensi-agensi pengguna dalam pengurusan pengeluaran pertanian, sumber asli, alam sekitar, bencana, keselamatan dan pembangunan tanah negara bagi menyumbang kepada pembangunan lestari, kesejahteraan hidup rakyat dan kedaulatan negara;

ii. Mempertingkatkan pembangunan kapasiti *indigenous* dalam bidang strategik remote sensing dan data spatial; dan

iii. Melibatkan secara aktif agensi-agensi pengguna yang berkaitan dalam pembangunan pakej-pakej aplikasi.

Strategic Thrust 1 :
Remote Sensing Application Packages Development for Use by User Agencies

i. To develop remote sensing application packages for use in user agencies in the management of agriculture production, natural resources, environment, disaster, security and land development of the country to contribute to sustainable development, the well-being of the nation and national sovereignty;

ii. To strengthen indigenous capacity development in strategic disciplines of remote sensing and spatial data; and

iii. To involve relevant user agencies actively in the development of application packages.

Teras Strategik 2 :
Pembekalan Secara Bersepadu Imej Satelit Remote Sensing dan Data Spatial yang Dihasilkan

i. Mewujud dan meningkatkan keupayaan negara dalam penerimaan imej satelit remote sensing secara masa sebenar dan berterusan;

ii. Menyedia dan membekal imej satelit remote sensing (termasuk produk tambah nilai) dengan cekap kepada pengguna khususnya dengan berperanan sebagai pembekal tunggal imej satelit remote sensing kepada agensi kerajaan; dan

iii. Menyedia dan membekal data spatial yang dihasilkan daripada imej satelit remote sensing bagi memenuhi keperluan agensi pengguna dalam pengurusan pengeluaran pertanian, sumber asli, alam sekitar, bencana, keselamatan dan pembangunan tanah negara.

Strategic Thrust 2 :
Centralised Distribution of Remote Sensing Satellite Images and Spatial Data Products

i. To establish and strengthen national capability in real-time and continuous acquisition of remote sensing satellite images;

ii. To efficiently provide and distribute remote sensing satellite images (including value-added products) to users by acting as the sole distributor of remote sensing satellite images to government agencies; and

iii. To provide and distribute spatial data products of remote sensing satellite images to fulfill the needs of user agencies in the management of agriculture production, natural resources, environment, disaster, security and land development of the country.

Teras Strategik 3 :
Pembangunan Modal Insan bagi Memaksimumkan Penggunaan Teknologi Remote Sensing Dalam Negara

i. Meningkatkan tenaga kerja mahir dan terlatih dalam bidang remote sensing dan teknologi berkaitan di agensi pengguna melalui usaha pemindahan teknologi khususnya penganjuran persidangan, seminar, bengkel, latihan, khidmat nasihat teknikal dan penerbitan; dan

ii. Membangunkan tenaga kerja teknikal yang mahir dan berintegriti di ARSM.

Strategic Thrust 3 :
Human Capital Development To Maximise the Use of Remote Sensing Technology in the Country

i. To increase skilled and trained work force in user agencies in remote sensing and related technologies through technology transfer initiatives namely; conferences, seminars, workshops, trainings, technical advisory services and publications; and

ii. To develop skilled technical work force with integrity in ARSM.

Teras Strategik 4 :
Promosi Teknologi Remote Sensing

Melaksanakan promosi teknologi kepada pembuat keputusan, pelajar dan orang awam bagi meningkatkan kefahaman dan minat mengenai kepentingan teknologi remote sensing dalam pembangunan negara dan kesejahteraan hidup rakyat.

Strategic Thrust 4 :
Remote Sensing Technology Promotion

To implement technology promotion to increase the understanding and interest of decision makers, students and the general public on the importance of remote sensing technology for national development and the well-being of the nation.

PIAGAM PELANGGAN
CLIENT'S CHARTER

Dalam usaha mencapai objektifnya, ARSM komited sepenuhnya untuk:

i. Memberi perkhidmatan secara profesional, cekap dan mesra.

ii. Memberi maklum balas kepada khidmat yang dipohon dalam tempoh tiga (3) hari dari tarikh permohonan diterima.

iii. Membekalkan produk imej remote sensing dalam jangkamasa* seperti di bawah (berasaskan satu unit produk dan imej tersebut sedia ada di ARSM):

Towards achieving its objective, ARSM is fully committed to:

i. Provide its services in a professional, efficient and courteous manner.

ii. Provide feedback within three (3) working days from the date of receipt of application.

iii. Provide remote sensing image products within the following stipulated time-frame (based on one unit image product and the said image is readily available at ARSM):*

Data Remote Sensing TIDAK TERPERINGKAT:		**NON-CLASSIFIED Remote Sensing Data:**	
a. Produk Standard Digital		*a. Standard Digital Product*	
- System Corrected	4 hari bekerja	*- System Corrected*	*4 working days*
- Map Corrected	4 hari bekerja	*- Map Corrected*	*4 working days*
- Pansharp	5 hari bekerja	*- Pansharp*	*5 working days*
b. Produk Tambah Nilai	12 hari bekerja	*b. Value-added Product*	*12 working days*
c. Produk Cetakan Design Jet	6-14 hari bekerja	*c. Design Jet Printed Product*	*6-14 working days*
d. Produk Cetakan Fotografi	7-15 hari bekerja	*d. Photography Printed Product*	*7-15 working days*
Data Remote Sensing TERPERINGKAT:		**CLASSIFIED Remote Sensing Data:**	
Permohonan imej remote sensing jenis TERPERINGKAT (resolusi 5 meter dan ke bawah) adalah mengikut prosedur di bawah Pekelliling Arahan Keselamatan Terhadap Dokumen Geospatial Terperingkat. Oleh itu tambahan masa 2 hingga 4 minggu diperlukan bagi proses tapisan keselamatan.		*Application for RESTRICTED remote sensing image (5 meter resolution and below) is in accordance to the Security Directive Circular on Classified Geospatial Documents. Therefore, an additional of 2 to 4 weeks is required for security vetting process.*	
* *Tidak termasuk masa penghantaran produk kepada pelanggan*		* *Does not include product delivery duration*	

iv. Menyediakan imej remote sensing dan maklumat yang diperlukan semasa bencana, keselamatan negara dan ketenteraman awam dengan segera.

v. Menyediakan program latihan mengikut kehendak pelanggan.

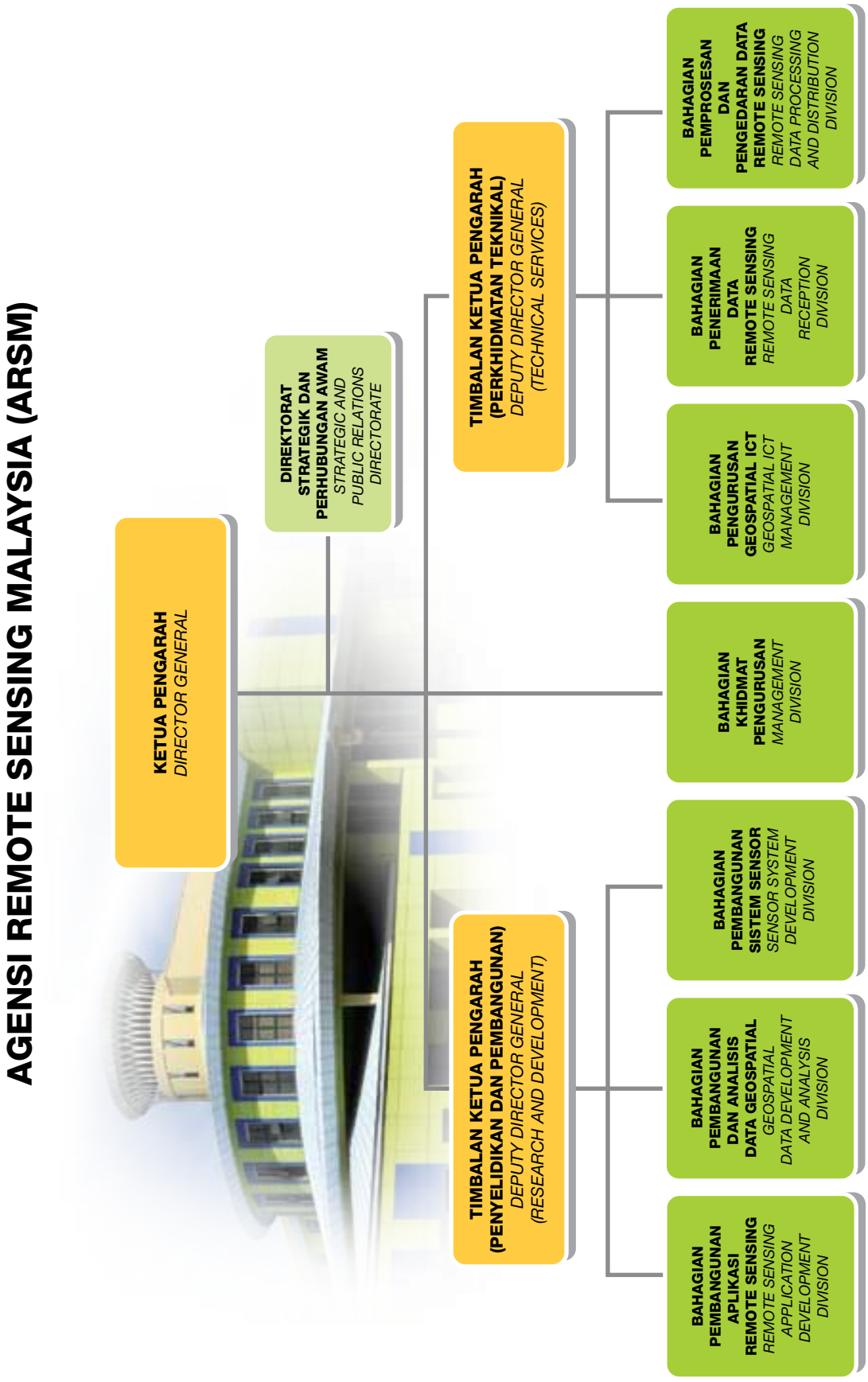
vi. Melaksanakan penyelidikan aplikasi remote sensing bagi memenuhi keperluan pelanggan.

iv. Provide remote sensing images and the generated geospatial information required for disaster, national security and public order as and when it is required.

v. Provide customised client-defined training programme.

vi. Implement remote sensing application research to fulfill client's need.

CARTA ORGANISASI
ORGANISATION CHART



PERUTUSAN KETUA PENGARAH
DIRECTOR GENERAL'S MESSAGE

PERUTUSAN KETUA PENGARAH
DIRECTOR GENERAL'S MESSAGE

Dato' Haji Darus bin Ahmad

Dalam tahun 2010, aktiviti yang dilaksanakan di bawah program penyelidikan dan pembangunan (P&P) merangkumi pemindahan teknologi bagi pakej-pakej aplikasi yang telah siap dibangunkan, pelaksanaan aktiviti untuk melengkapkan komponen bagi pakej-pakej aplikasi yang sedang dibangunkan, penambahbaikan kepada pakej-pakej aplikasi yang telah dibangunkan dan telah dioperasikan oleh agensi-agensi yang berkaitan, dan pembangunan aplikasi baharu. Pelaksanaan pembangunan pakej aplikasi yang dilaksanakan adalah bagi menyokong usaha kerajaan terutamanya bagi meningkatkan kesejahteraan hidup rakyat.

Kejayaan pembangunan pakej aplikasi dicapai hasil komitmen dan sokongan padu agensi kerjasama yang berkaitan. Ini termasuk pembangunan Sistem

In 2010, activities that had been implemented under the research and development (R&D) programmes comprised technology transfers of the developed application packages, implementing activities to accomplish components for application packages which is being developed, improving the developed application packages, and the development of new application packages. The development of the application packages is being implemented to support the government's effort particularly to improve the well being of the people.

The successful development of application packages is achieved through the full commitment and support of the collaborated agencies. These include the development of Fishing Site Identification System (FSI System) which was being implemented with the

Penentuan Lokasi Penangkapan Ikan (Sistem FSI – *Fishing Site Identification System*) yang dilaksanakan bersama Jabatan Perikanan (DoF), Lembaga Kemajuan Ikan Malaysia (LKIM) dan Persatuan Nelayan Kebangsaan (NEKMAT). Sistem FSI menggunakan maklumat permukaan laut yang diperoleh daripada data satelit bagi mengenalpasti lokasi yang berpotensi tinggi bagi penangkapan ikan. Maklumat lokasi ini disebar kepada nelayan melalui khidmat Sistem Pesanan Ringkas MySMS-15888 dan menerusi portal FSI. Keupayaan sistem ini yang dapat memberikan lokasi penangkapan ikan yang tepat, akhirnya akan menyumbang kepada peningkatan pendapatan nelayan.

Selaras dengan usaha untuk meningkatkan penggunaan teknologi remote sensing dan pakej aplikasi di Sabah dan Sarawak, ARSM telah bekerjasama dengan Jabatan Tanah dan Survei Sarawak (JTS) menggunakan teknologi remote sensing bagi pemetaan litupan tanah khususnya menggunakan data satelit yang diperoleh melalui stesen bumi ARSM di Temerloh, Pahang. Kaedah pemetaan ini akan mempercepatkan penghasilan peta litupan tanah bagi seluruh Sarawak berbanding kaedah konvensional.

Bagi perkhidmatan data remote sensing pula, bilangan agensi pengguna yang memohon data remote sensing meningkat sebanyak 70% berbanding tahun sebelumnya. Peningkatan ini adalah selaras dengan pelaksanaan peranan ARSM sebagai pembekal data satelit remote sensing kepada semua agensi kerajaan dan peningkatan kesedaran mengenai kelebihan penggunaan teknologi remote sensing dan teknologi berkaitan di kalangan agensi pengguna kerajaan. ARSM sentiasa berusaha mempertingkatkan perkhidmatan kepada pelanggan agensi kerajaan mahupun pihak swasta. Antara inisiatif yang diambil bagi tujuan ini ialah perolehan perisian bagi membolehkan pelaksanaan pembetulan secara automatik imej satelit yang dapat memendekkan tempoh penyediaan produk data di samping meningkatkan kualiti data.

Selain daripada aktiviti P&P dan perkhidmatan data remote sensing yang merupakan aktiviti teras agensi, aktiviti pengurusan ICT geospatial juga dipertingkatkan terutamanya bagi menyokong dan memastikan kedua-dua aktiviti teras dapat dilaksanakan dengan cekap dan berkesan. Antara usaha yang dijalankan ialah pelaksanaan penyelenggaraan sistem komputer secara dalaman bagi menjamin ketersediaan dan kebolehpercayaan sistem komputer agensi dan peningkatan infrastruktur ICT. Aktiviti pembangunan modal insan dan promosi teknologi juga turut

collaboration of the Department of Fisheries (DoF), Malaysian Fisheries Development Authority (LKIM) and the National Fishermen's Association (NEKMAT). The FSI system uses the sea surface parameters extracted from satellite data to determine the high potential fishing sites. The information of the locations was then disseminated to fishermen via Short Messaging System of MySMS-15888 and through FSI portal. The capability of the system in providing accurate fishing sites will eventually contribute in increasing fishermen's income.

In line with the initiative to increase the usage of remote sensing technology and application packages in Sabah and Sarawak, ARSM has collaborated with the Department of Land and Survey (LSD) Sarawak in using remote sensing technology for landuse mapping particularly using satellite data acquired through ARSM ground receiving station in Temerloh, Pahang. This mapping technique has expedited the production of land use maps for the whole Sarawak as compared to the conventional method.

As for remote sensing data services, the number of user agencies requested for remote sensing data has increased by 70% compared to the previous year. This is in line with the role of ARSM as the sole distributor of remote sensing data satellite to government agencies and the increase of awareness amongst government agencies on the advantages of using remote sensing and related technologies. ARSM is continuously improving the services to customers of both the government agencies and the private sector. Amongst the initiatives undertaken is the procurement of software to enable automatic satellite image geometric correction which expedite the data production as well as improving data quality.

Apart from R&D activities and remote sensing data services, which are the core business of the agency, the geospatial ICT management has also been enhanced particularly to support and ensure the effectiveness and efficiency of the implementation of the two core businesses. Amongst the initiative undertaken is the self-hardware maintenance of ARSM computer system to ensure the availability and reliability of ARSM computer system, and the upgrading of ICT infrastructures. The human capital development and technology promotion were also being implemented with the main aim to increase the usage of remote sensing and related technologies in the country.

dilaksanakan dengan matlamat meningkatkan penggunaan teknologi remote sensing dan teknologi berkaitan di negara ini.

Bagi memastikan agensi mempunyai keupayaan penuh untuk melaksanakan kesemua peranannya dengan lebih berkesan maka ARSM telah memohon penstrukturan semula organisasi dan telah diluluskan oleh Jabatan Perkhidmatan Awam (JPA) berkuatkuasa 1 Disember 2010.

Memandangkan tahun 2010 adalah merupakan tahun terakhir pelaksanaan projek pembangunan di bawah Rancangan Malaysia ke Sembilan (RMKe-9), maka ARSM dengan persetujuan agensi-agensi kerjasama yang berkaitan telah memohon bajet pembangunan di bawah Rancangan Malaysia ke Sepuluh (RMKe-10). Bajet yang dipohon adalah terutamanya bagi melaksanakan pembangunan pakej aplikasi baharu disamping menambah baik pakej aplikasi yang telah dibangunkan bagi digunakan dalam perancangan pembangunan negara dan pengurusan pertanian, perikanan, sumber asli, alam sekitar, bencana, keselamatan dan pembangunan kawasan.

Akhir kata, saya mengucapkan terima kasih kepada warga ARSM atas segala dedikasi dan usaha gigih mereka dalam melaksanakan tanggungjawab masing-masing. Saya juga merakamkan setinggi-tinggi penghargaan kepada semua kementerian, agensi kerajaan, agensi swasta dan universiti atas sokongan dan penglibatan aktif dalam pembangunan dan pengoperasian pelbagai pakej aplikasi, program pembangunan modal insan dan promosi teknologi yang telah dilaksanakan di sepanjang tahun 2010.

Terima kasih.

DATO' HAJI DARUS BIN AHMAD

To ensure the agency has full capability to implement its functions effectively, ARSM has requested for the restructuring of the agency and was approved by the Public Services Department (PSD) effective from 1 December 2010.

As 2010 is the last year for implementation of development projects under the Ninth Malaysia Plan, ARSM with the consensus of the collaborated government agencies has applied for the development budgets under the Tenth Malaysia Plan. The budgets are required mainly for the development of new application packages besides enhancing the developed application packages for use in the national development planning and the management of agriculture, fisheries, natural resources, the environment, disasters, security and area development.

In conclusion, I would like to thank ARSM staff for their dedication and hard work in upholding their responsibilities. I would also like to express my sincere appreciation to ministries, government agencies, private agencies and universities for their support and active participation in the development and operationalisation of various application packages, human capital development programmes and technology promotions activities throughout 2010.

Thank you.

PROGRAM PENYELIDIKAN DAN PEMBANGUNAN

RESEARCH AND DEVELOPMENT PROGRAMME

PEMBANGUNAN APLIKASI
APPLICATION DEVELOPMENT

APLIKASI PERTANIAN DAN PERIKANAN

Sistem Penentuan Lokasi Penangkapan Ikan

Sistem Penentuan Lokasi Penangkapan Ikan (FSI) dibangunkan dengan kerjasama Jabatan Perikanan Malaysia (DOF), Lembaga Kemajuan Ikan Malaysia (LKIM) dan Persatuan Nelayan Kebangsaan (NEKMAT).

Sistem ini terdiri daripada tiga (3) komponen utama, iaitu pemprosesan imej satelit, pangkalan data dan sistem sebaran maklumat. Melalui komponen pemprosesan imej satelit, lokasi berpotensi tinggi bagi penangkapan ikan dikenal pasti dan kemudiannya disebar kepada nelayan menggunakan Sistem Pesanan Ringkas MySMS-15888 dan boleh juga dicapai secara atas talian menerusi portal FSI. Sistem ini berupaya mengurangkan masa pencarian ikan dan kos bahan api sebanyak 30% serta meningkatkan hasil tangkapan. Daripada beberapa aktiviti verifikasi yang dijalankan, 94% daripadanya memperoleh hasil tangkapan melebihi dua (2) tan metrik.

AGRICULTURE AND FISHERY APPLICATION

Fishing Site Identification System

Fishing Site Identification System (FSI) was developed in collaboration with the Department of Fisheries (DOF), Malaysian Fisheries Development Authority (LKIM) and National Fishermen's Association (NEKMAT).

The system consisting of three (3) main components, i.e. processing of satellite images, database, and information dissemination system. Through satellite images processing component, highly potential fishing sites are determined and subsequently disseminated to fishermen via Short Messaging System MySMS-15888 and could also be accessed online through FSI portal. By implementing the system, the time to locate potential fishing ground and fuel cost is reduced by 30% and simultaneously increasing the fish catch. 94% of the verification activities conducted has obtained more than two (2) metric tonne fish catch.

Antaramuka Portal Sistem Penentuan Lokasi Penangkapan Ikan
Interface of Fishing Site Identification System (FSI) Portal

Contoh SMS diterima oleh nelayan
Sample of SMS received by fishermen

Pemindahan teknologi kepada ahli Persatuan Nelayan Kawasan (PNK) Besut
Transfer of technology to members of Besut Area Fishermen's Association

Hasil tangkapan semasa kerja verifikasi
Fish catch during verification

Lawatan pengusaha vesel dan ahli Persatuan Nelayan Perairan Pantai Timur Semenanjung Malaysia ke ARSM pada 26 November 2010
Visit to ARSM by vessel owners and members of Coastal East Coast Peninsular Malaysia Fishermen's Association on 26 November 2010

Kos pembangunan sistem ini diminimumkan melalui penggunaan tenaga kepakaran dalaman, peralatan dan fasiliti sedia ada di ARSM dan agensi-agensi yang terlibat. Pendekatan ini juga berjaya meningkatkan tahap kemampuan pegawai penyelidik ARSM untuk melaksanakan penambahbaikan sistem berkenaan secara berterusan.

Sistem Penentuan Lokasi Penangkapan Ikan ini telah dilancarkan semasa Majlis Perasmian `Malam Kemuncak Festival Malaysia Inovatif 2010 (MI2010)' di Stadium Putra, Bukit Jalil pada 25 November 2010 yang disempurnakan oleh Y.A.B. Dato' Sri Mohd Najib bin Tun Hj. Abdul Razak, Perdana Menteri Malaysia. Seramai 80 pengusaha vesel dan nelayan dari pantai timur turut hadir menyaksikan pelancaran sistem ini.

The development expenditure of FSI system was minimal through the utilisation of internal expertise, existing equipments, and facilities of ARSM and the respective agencies. This approach has also intensified the capability of research officers at ARSM to further improve the existing system.

The Fishing Site Identification System (FSI) was officially launched during the opening ceremony of '2010 Malaysia Innovative (MI2010) Festival Gala Night' at Stadium Putra, Bukit Jalil, Kuala Lumpur on 25 November 2010 by Y.A.B. Dato' Sri Mohd Najib bin Tun Hj. Abdul Razak, Prime Minister of Malaysia. A total of 80 east coast vessel owners and fishermen have also witnessed the launching of the system.

Sistem Anggaran Hasil Kelapa Sawit

Sistem Anggaran Hasil Kelapa Sawit Berteraskan Teknologi Remote Sensing dan GIS dibangunkan mulai tahun 2005 hasil kerjasama antara ARSM dan Sime Darby Research Sdn. Bhd. Sistem ini digunakan dengan jayanya di Pulau Carey, Selangor dengan tahap ketepatan 95% dan Sime Darby akan memperluaskan penggunaan sistem ini ke semua ladang syarikat tersebut di seluruh negara. Pengumuman pertama sistem ini diadakan semasa 2010 *Sime Darby Plantation R&D Day* pada 25 Januari 2010 manakala pelancarannya pula diadakan semasa Majlis Perasmian 'Malam Kemuncak Festival Malaysia Inovatif 2010 (MI2010)' di Stadium Putra, Bukit Jalil pada 25 November 2010 yang dirasmikan oleh Y.A.B. Dato' Sri Mohd Najib bin Tun Haji Abdul Razak, Perdana Menteri Malaysia.

Oil Palm Yield Prediction System

The development of Oil Palm Yield Prediction System Using Remote Sensing and GIS Technologies was started in 2005 under the cooperation project between ARSM and Sime Darby Research Sdn. Bhd. The system was successfully utilised in Carey Island, Selangor with an accuracy of 95% and will be expanded to all Sime Darby estates throughout Malaysia. The system was first announced at 2010 Sime Darby Plantation R&D Day on 25 January 2010 and subsequently launched at the opening ceremony of '2010 Malaysia Innovative (MI2010) Festival Gala Night' at Stadium Putra, Bukit Jalil on 25 November 2010 which was officiated by Y.A.B. Dato' Sri Mohd Najib bin Tun Haji Abdul Razak, Prime Minister of Malaysia.

Persembahan multimedia Sistem Anggaran Hasil Kelapa Sawit semasa 2010 Sime Darby Plantation R&D Day di Sime Darby Convention Centre, Bukit Kiara pada 25 Januari 2010
Multimedia presentation of Oil Palm Yield Prediction System during 2010 Sime Darby Plantation R&D Day at Sime Darby Convention Centre, Bukit Kiara on 25 January 2010

Pelancaran Sistem Anggaran Hasil Kelapa Sawit di Majlis Perasmian 'Malam Kemuncak Festival Malaysia Inovatif (MI2010)' di Stadium Putra, Bukit Jalil pada 25 November 2010
Launching of Oil Palm Yield Prediction System during Opening Ceremony of 'Malaysia Innovative (MI2010) Festival Gala Night' at Stadium Putra, Bukit Jalil on 25 November 2010

Sistem Pemantauan dan Anggaran Hasil Padi

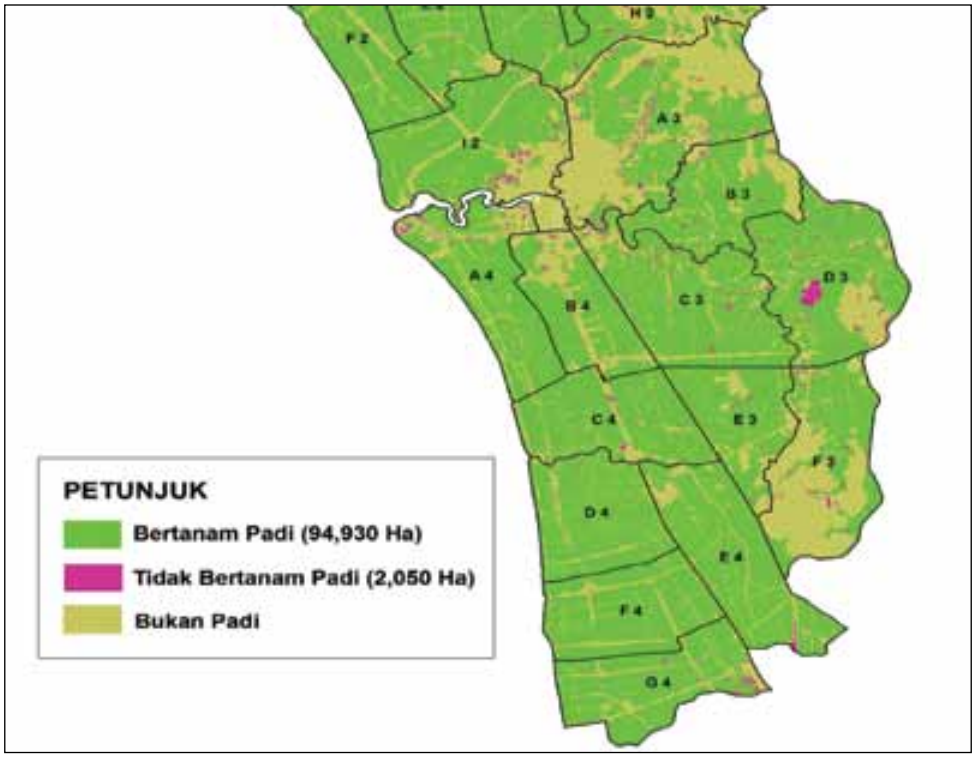
Sistem pemantauan dan anggaran hasil padi berteraskan teknologi remote sensing dan GIS telah dibangunkan dengan kerjasama tiga agensi di bawah Kementerian Pertanian dan Industri Asas Tani iaitu Lembaga Kemajuan Pertanian Muda (MADA), Jabatan Pertanian (DOA) dan Projek Pembangunan Pertanian Bersepadu (IADA), Barat Laut Selangor. Pembangunan sistem ini melibatkan tiga (3) komponen utama iaitu pembangunan pangkalan data tanaman padi, pemetaan kawasan bertanam padi bagi setiap musim tanaman dan penganggaran hasil padi.

Pembangunan pangkalan data tanaman padi bagi kawasan MADA dan IADA berjaya disiapkan sepenuhnya pada tahun 2009. Bagi tahun 2010, aktiviti utama yang dijalankan adalah pengujian metodologi pemetaan kawasan bertanam padi menggunakan imej satelit Radarsat bagi musim tanaman 2/2009, 1/2010 dan 2/2010 bagi kawasan MADA. Hasil kajian menunjukkan pemetaan kawasan bertanam padi di MADA boleh mencapai ketepatan sehingga 97%.

Rice Monitoring and Yield Estimation System

Rice monitoring and yield prediction system is currently being developed under a collaborative project between ARSM and three (3) agencies under the Ministry of Agriculture and Agro-based Industry, i.e., Muda Agricultural Development Authority (MADA), Department of Agriculture (DOA) and Integrated Agricultural Development Project (IADA), North West Selangor. The development of the system involves three (3) main components, i.e., developing paddy database, mapping of actual paddy planted area for every season and estimation of paddy yield.

The development of paddy databases for MADA and IADA have been successfully completed in 2009. As for 2010, the main activity being implemented was testing of the methodology for mapping of actual paddy planted areas using Radarsat satellite images of seasons 2/2009, 1/2010 and 2/2010 for MADA area. The results showed that the mapping of planted paddy area in MADA could achieve an accuracy of up to 97%.



Pemetaan kawasan bertanam padi menggunakan imej satelit Radarsat bagi sebahagian daripada kawasan MADA bagi musim tanaman 1/2010
Mapping of actual paddy planted area using Radarsat satellite imagery for part of MADA area for planting season 1/2010

Projek Pemetaan Litupan Tanah

ARSM dan Jabatan Tanah dan Survei Sarawak (JTS) bekerjasama semenjak tahun 2009 menjalankan projek 'Pemetaan Litupan Tanah Menggunakan Teknologi Remote Sensing'. Pemetaan litupan tanah pada skala 1:50,000 dijalankan dengan menggunakan data satelit SPOT beresolusi 10m dan 2.5m yang diperoleh melalui Stesen Bumi di Temerloh, Pahang. Kaedah pemetaan ini membolehkan penghasilan peta litupan tanah bagi seluruh negeri Sarawak dipercepatkan berbanding kaedah konvensional yang digunakan sekarang iaitu daripada enam (6) kepada tiga (3) tahun. Peta litupan tanah yang terkini amat diperlukan bagi perancangan pembangunan yang lebih berkesan bagi faedah rakyat negeri Sarawak.

Projek kerjasama ini dilancarkan semasa program Karnival Malaysia Inovatif 2010 (MI2010) Zon Sarawak pada 23 Oktober 2010 oleh Y.B. Dato' Sri Micheal Manyin Anak Jawong, Menteri Pembangunan Infrastruktur dan Perhubungan Sarawak dan Y.B. Menteri Sains, Teknologi dan Inovasi.

Landuse Mapping Project

ARSM and Department of Land and Survey (LSD) Sarawak have been collaborating since 2009 in a project entitled 'Landuse Mapping Using Remote Sensing Technology'. The mapping of landuse maps at a scale of 1:50,000 is conducted using SPOT satellite data with the resolutions of 10m and 2.5m which were acquired by Ground Station in Temerloh, Pahang. Using this mapping technique, production of landuse maps for the whole state of Sarawak could be expedited as compared to the existing conventional technique i.e. from six (6) to three (3) years. The latest landuse maps are vital for more effective development planning for the benefit of the people of Sarawak.

This collaboration project was launched during the Sarawak Zone, 2010 Malaysia Innovative Carnival (MI2010) on 23 October 2010 by Y.B. Dato' Sri Micheal Manyin Anak Jawong, Sarawak Minister of Infrastructure Development and Communication and Y.B. Minister of Science, Technology and Innovation.

Pelancaran peta litupan tanah kawasan Sibu oleh Y.B. Menteri Pembangunan Infrastruktur dan Perhubungan Sarawak dan Y.B. Menteri Sains, Teknologi dan Inovasi menandakan pelancaran projek kerjasama ARSM-JTS Sarawak pada 23 Oktober 2010
Launching of land cover map of Sibu by Y.B. Minister of Infrastructure Development and Communication Sarawak and Y.B. Minister of Science, Technology and Innovation marks the launching of collaboration project between ARSM-LSD Sarawak on 23 October 2010

APLIKASI PERHUTANAN DAN BIODIVERSITI

Pangkalan Data Geospatial Bersepadu Biodiversiti Kebangsaan

Sepanjang tahun 2010, pembangunan pangkalan data ini lebih tertumpu kepada pembangunan sistem secara *online*. Pembangunan sistem bersepadu ini melibatkan tiga (3) komponen utama, iaitu kemasukan data, analisis data dan carian maklumat.

Disamping pembangunan sistem, pengintegrasian pelbagai data yang diterima daripada pelbagai agensi terlibat juga masih diteruskan. Sehingga penghujung tahun, sebanyak 3,223 rekod flora dan 3,148 rekod fauna diintegrasikan ke dalam sistem.

Bagi komponen analisis data, analisis yang dilaksanakan ialah taburan flora dan fauna berbanding perubahan guna tanah, jenis hutan dan kelas geomorfologi. Komponen carian maklumat yang dibangunkan telah membolehkan beberapa carian berikut dilakukan melalui sistem tersebut:

i. Taburan spesies flora dan fauna dalam suatu daerah atau mengikut negeri;
ii. Status pemuliharaan spesies flora atau fauna berdasarkan *International Union for Conservation of Nature* (IUCN);
iii. Status pemuliharaan spesies flora atau fauna di Malaysia;
iv. Bilangan spesies yang dilihat atau direkod mengikut daerah atau negeri;
v. Bilangan spesies yang dilihat atau direkod dalam suatu tempoh masa tertentu;
vi. Zon penampan bagi jarak keliaran spesies yang dilihat atau direkod; dan
vii. Taburan spesies flora dan fauna dalam Hutan Simpan Kekal, jenis hutan, jenis guna tanah dan kelas geomorfologi.

Kawasan kajian akan diperluaskan ke seluruh Semenanjung Malaysia dan beberapa kawasan perintis di Sabah dan Sarawak di bawah peruntukan Rancangan Malaysia Ke-10 sepertimana yang diputuskan semasa Mesyuarat Majlis Biodiversiti dan Bioteknologi Negara Ke-Enam (MBBN6). Bagi melaksanakan projek ini, ARSM telah mengadakan perbincangan awal bersama Pusat Biodiversiti Sabah (SaBC) dan Unit Perancang Negeri Sarawak (UPN).

FORESTRY AND BIODIVERSITY APPLICATION

Integrated National Biodiversity Geospatial Database

Throughout 2010, the development of the database is primarily focused on the development of online system The development of this integrated system comprise of three (3) main components, i.e. data input, data analysis and queries.

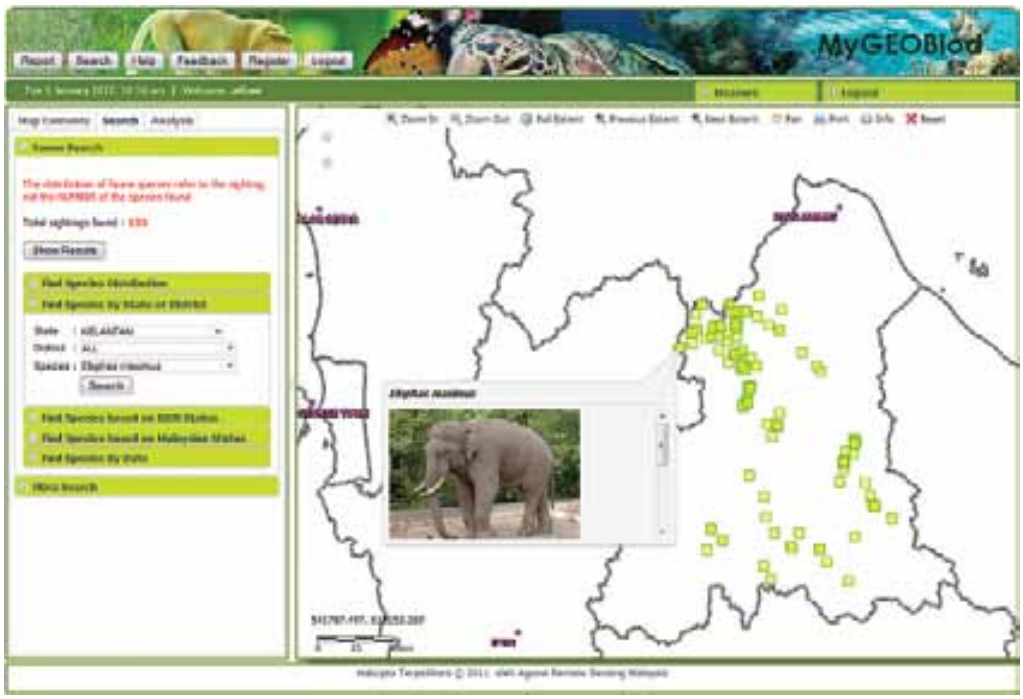
Besides the system development, integration of various data obtained from multi agencies participated in the programme is continued. A total of 3,223 records for flora and 3,148 records for fauna have been integrated into the system by the end of 2010.

For data analysis component, the analysis implemented was on the distribution of flora and fauna with respect to landuse changes, forest types and geomorphology class. The queries component that was developed has enabled the following queries to be performed through the system:

i. Species distribution of flora and fauna within certain district or state;
ii. Conservation status of flora and fauna species based on the International Union for Conservation of Nature (IUCN);
iii. Conservation status of flora and fauna species in Malaysia;
iv. Number of species sighted or recorded in the district or state ;
v. Number of species sighted or recorded within a specific period of time; and
vi. Buffering zone for home range of sighted or recorded species; and
vii. Distribution of flora and fauna species in Permanent Forest Reserved, forest types, landuse types and geomorphology class.

The study site will be extended to the whole Peninsular Malaysia and several pilot areas in Sabah and Sarawak under the 10th Malaysia Plan as agreed in the Sixth National Biodiversity and Biotechnology Council Meeting (6thNBBC). ARSM has initiated discussions with Sabah Biodiversity Centre (SaBC) and Sarawak State Planning Unit (SPU) to execute this project.

Antaramuka Portal Pangkalan Data Geospatial Bersepadu Biodiversiti Kebangsaan
Interface of Integrated National Biodiversity Geospatial Database Portal



Taburan keliaran gajah di Kelantan
Distribution of elephant movements in Kelantan

Sistem Pemantauan Hutan

Sistem Pemantauan Hutan Menggunakan Remote Sensing (FMRS) dibangunkan dengan kerjasama Jabatan Perhutanan Semenanjung Malaysia (JPSM). Sistem secara on-line ini telah dapat memenuhi keperluan agensi tersebut dalam mengesan aktiviti dan lokasi pembalakan haram serta pemantauan sumber hutan negara. Sistem FMRS menyediakan imej satelit SPOT yang merangkumi seluruh Semenanjung Malaysia bagi tujuan mengesan dan mengesahkan sebarang perubahan di lapangan. Bagi tahun 2010, sebanyak 36 scene imej satelit SPOT telah dimasukkan ke dalam sistem ini.

Forest Monitoring System

The Forest Monitoring System Using Remote Sensing (FMRS) was developed in collaboration with Forestry Department of Peninsular Malaysia (FDPM). This on-line system has fulfilled the needs of the agency in detecting activities and locations of illegal logging as well as monitoring of the national forest resources. The FMRS system provides SPOT satellite images covering the whole Peninsular Malaysia for identifying and validating changes on the ground. For 2010, a total of 36 scenes of SPOT satellite images have been emplaced in the system.

Peserta Kursus Penggunaan Sistem FMRS bagi Jabatan Perhutanan Negeri Perak bergambar bersama Ketua Pengarah Jabatan Perhutanan Semenanjung Malaysia pada 9 Februari 2010
Course Participants on the Use of FMRS System from Perak State Forestry Department with the Director General of Forestry Department of Peninsular Malaysia on 9 February 2010

Rekod menunjukkan terdapat peningkatan penggunaan sistem FMRS pada tahun 2010 oleh kakitangan Jabatan Perhutanan Negeri-Negeri berbanding tahun sebelumnya dimana Jabatan Perhutanan Kedah merekodkan penggunaan tertinggi iaitu sebanyak 183 diikuti Pahang (142), Perak (138) dan Pulau Pinang (105). Peningkatan ini, antara lain disumbangkan oleh peningkatan kesedaran agensi pengguna mengenai keberkesanan penggunaan teknologi remote sensing bagi pemantauan hutan. Peningkatan kesedaran ini adalah hasil usaha berterusan ARSM mempromosi Sistem FMRS yang dilaksanakan melalui beberapa siri seminar, bengkel dan latihan khusus kepada kakitangan Jabatan Perhutanan Negeri-Negeri semenjak pembangunannya. Bagi tahun 2010, kursus penggunaan Sistem FMRS diadakan di Jabatan Perhutanan Negeri Perak pada 9-10 Februari dan dirasmikan oleh Y.Bhg. Dato' Razani Ujang, Ketua Pengarah Jabatan Perhutanan Semenanjung Malaysia.

Records have shown an increase in the usage of FMRS system by the State Forestry Departments in 2010 compared to the previous year with the highest usage recorded by Kedah Forestry Department (183), followed by Pahang (142), Perak (138) and Penang (105). The increase, amongst others is attributed to the increase in awareness by the user agencies on the efficiency of using remote sensing technology in forest monitoring. The increase in awareness is due to continuous efforts by ARSM in promoting FMRS System through series of dedicated seminars, workshops, and trainings for the staff and officers of State Forestry Departments. In 2010, a training course on the use of FMRS system was organised at Perak Forestry Department on 9-10 February and officiated by Y.Bhg. Dato' Razani Ujang, Director General of Forestry Department Peninsular Malaysia.

APLIKASI PENGURUSAN BENCANA ALAM

Pemantauan Kebakaran Hutan dan Pembakaran Terbuka

Sepanjang tahun 2010 Malaysia tidak mengalami kejadian jerebu seperti tahun-tahun sebelumnya disebabkan keadaan cuaca yang agak lembab di rantau ASEAN. Satelit NOAA-18 hanya mengesan sejumlah 10,507 bilangan titik panas di Malaysia dan Indonesia berbanding 25,395 titik panas pada 2009. Daripada jumlah tersebut, sebanyak 1,819 (17%) titik panas dikesan di Malaysia manakala majoriti iaitu 8,688 (83%) dikesan di Indonesia.

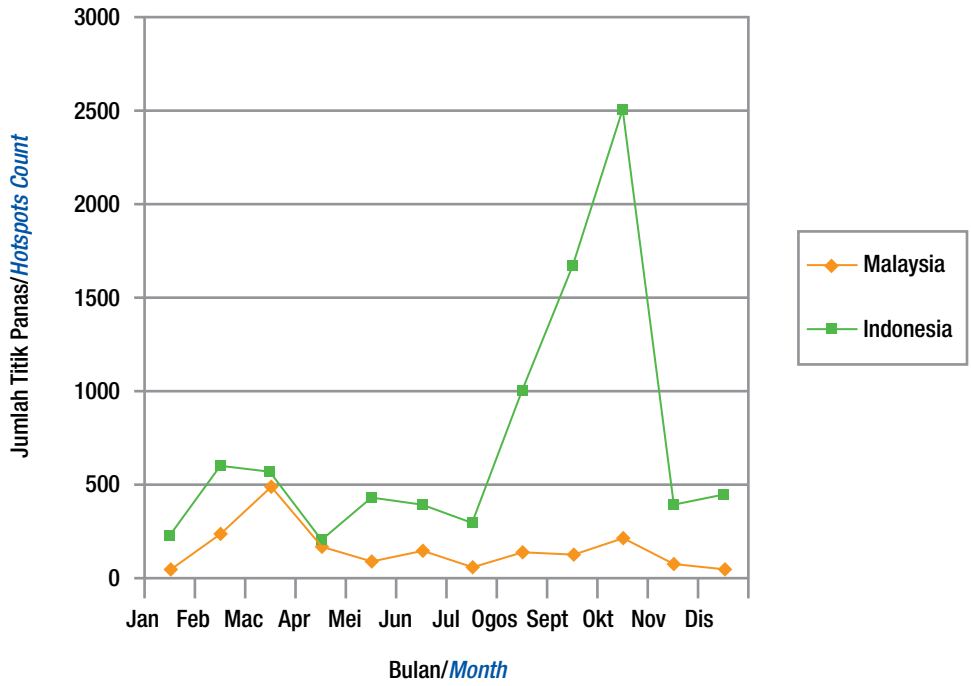
Analisis menunjukkan bahawa bilangan titik panas tertinggi di Malaysia dikesan pada bulan Mac dengan 491 titik panas diikuti bulan Februari dan Oktober dengan masing-masing mencatatkan 239 dan 212 titik panas. Bagi Indonesia pula, bilangan titik panas tertinggi dikesan pada bulan Oktober dengan 2,498 titik panas. Ini diikuti oleh bulan September dan Ogos dengan masing-masing berjumlah 1,659 dan 1,003.

NATURAL DISASTER MANAGEMENT APPLICATION

Forest Fire Monitoring and Open Burning

In 2010, Malaysia has not experiencing haze occurrences like those in the previous years due to wet condition in ASEAN region. NOAA-18 satellite has detected only 10,507 hotspots in Malaysia and Indonesia compared to 25,395 hotspots in 2009. Out of the figure, 1,819 (17%) hotspots were detected in Malaysia while the majority of 8,688 (83%) were from Indonesia.

Analysis has shown that the highest number of hotspots counts were detected in March with 491, followed by the month of February and October with 239 and 212 hotspots, respectively. Whilst in Indonesia, the highest number of hotspots was recorded in October with 2,498. It is then followed by the month of September and August with 1,659 and 1,003, respectively.



Taburan bulanan titik panas di Malaysia dan Indonesia seperti yang dikesan oleh Satelit NOAA-18
Monthly hotspots distribution in Malaysia and Indonesia as detected by NOAA-18 Satellite

APLIKASI PEMETAAN

Pembangunan Jaringan *Image Chip Satellite Based Positioning*

Pada tahun 2010, pengumpulan data titik kawalan (GCP) dan pembangunan image chips library berasaskan data satelit SPOT-5 bagi seluruh Semenanjung Malaysia telah berjaya disiapkan. Pasukan petugas juga telah memulakan pengumpulan GCP bagi beberapa kawasan terpilih di Negeri Sabah dan Sarawak. Cerapan data GCP dijalankan dengan menggunakan dua (2) jenis peralatan *Global Navigation Satellite System* (GNSS) iaitu; TOPCON GR3 yang menggunakan servis *Malaysia Real-Time Kinematic System* (MyRTKNet) dari Jabatan Ukur dan Pemetaan Malaysia (JUPEM) dan TRIMBLE PRO XRT yang menggunakan servis OMNISTAR HP.

Kesemua GCP yang dicerap di lapangan dengan berasaskan data SPOT-5 multispektral dan SPOT-5 pankromatik dijadikan sebagai chips yang kemudiannya akan digunakan bagi pembetulan geometri data satelit SPOT secara automatik. Hasil daripada penggunaan GCP yang dicerap, sebanyak 137 scene imej orthorectified rujukan piawai SPOT-5 telah dihasilkan iaitu terdiri daripada 68 scene imej SPOT-5 Multispektral dan 69 scene imej SPOT-5 Pankromatik.

MAPPING APPLICATION

Development of Image Chip Satellite Based Positioning Network

In 2010, the collection of ground control points (GCP) and the development of image chips library which is based on SPOT-5 satellite data for Peninsular Malaysia is completed. The team has also started the GCP collection for several selected areas in Sabah and Sarawak. The field observations were conducted using two (2) types of Global Navigation Satellite System (GNSS) equipments i.e. TOPCON GR3 using Real-Time Kinematic System (MyRTKNet) service provided by the Department of Survey and Mapping Malaysia (JUPEM) and Trimble PRO XRT using HP OMNISTAR service.

The collected GCP based on SPOT-5 multispectral and SPOT-5 panchromatic data were converted into image chips of which will later be used for automatic geometric correction of SPOT satellite data. By utilizing those observed GCP, a total of 137 scenes of SPOT-5 standard orthorectified referenced images were produced consisting 68 scenes of SPOT-5 Multispectral images and 69 scenes of SPOT-5 Panchromatic images.

Aktiviti semasa kerja lapangan
Activities during field observations

PROGRAM PERKHIDMATAN TEKNIKAL

TECHNICAL SERVICES PROGRAMME

PERKHIDMATAN DATA SATELIT REMOTE SENSING
REMOTE SENSING SATELLITE DATA SERVICES

Penerimaan Data

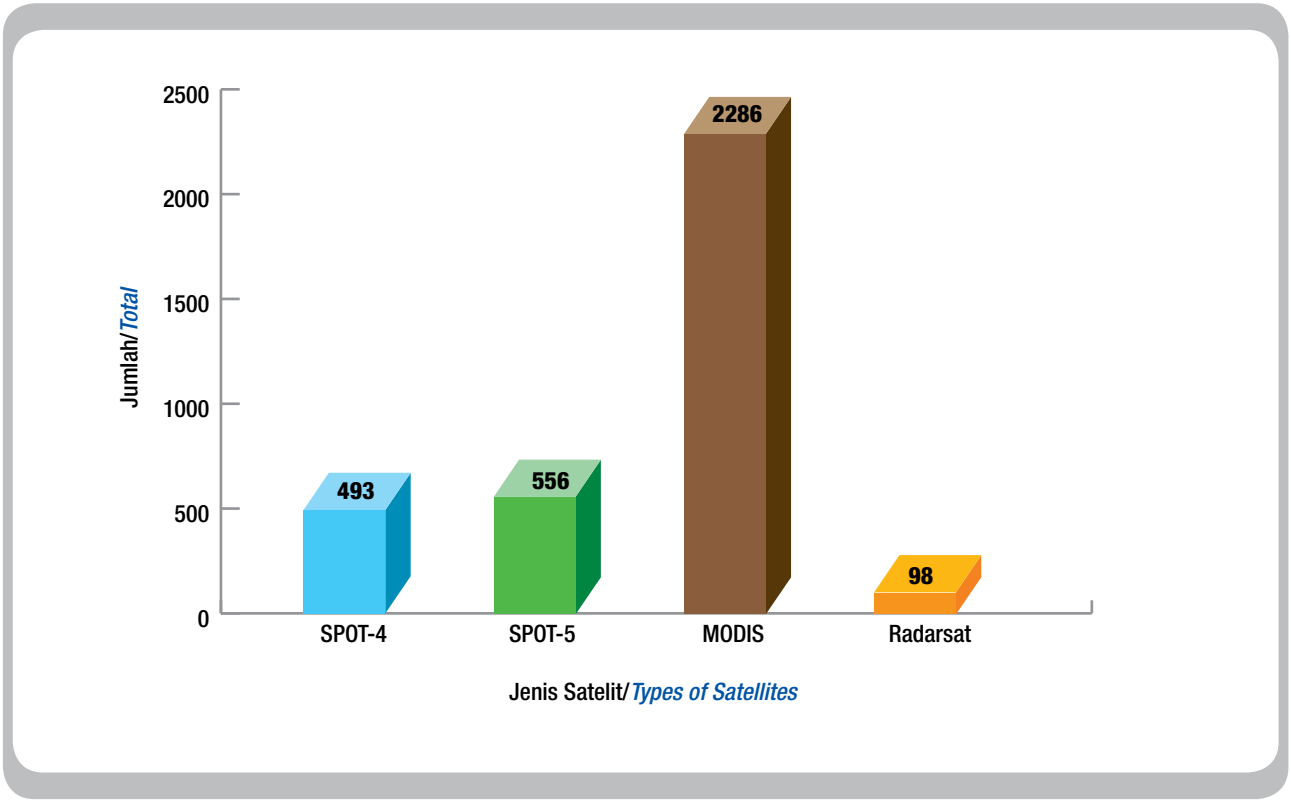
Pada tahun 2010, Stesen Bumi ARSM di Temerloh, Pahang meneruskan aktiviti penerimaan data satelit remote sensing secara masa sebenar daripada satelit SPOT-4, SPOT-5, Radarsat-1 dan MODIS (Aqua-1 dan Terra-1). Sebanyak 493 cerapan SPOT-4, 556 cerapan SPOT-5 dan 98 cerapan Radarsat-1 dilaksanakan dengan menggunakan sistem antena 13m. Manakala sebanyak 2,286 cerapan data satelit MODIS telah diterima menggunakan sistem antena 3.6m. Sementara itu sebanyak 298, 296 dan 310 cerapan data NOAA-15, NOAA-17 dan NOAA-18 pula diperoleh menggunakan sistem antena 2.4m.

Stesen Bumi ARSM juga berperanan mengarkib semua data satelit yang dicerap dan menjalankan pra-pemprosesan bagi data satelit yang dipesan oleh pengguna melalui Bahagian Pemprosesan dan Pengedaran Data Remote Sensing. Untuk tujuan ini, sebanyak 1,515 *scene* data satelit SPOT dan 101 *scene* data satelit Radarsat-1 telah dihasilkan.

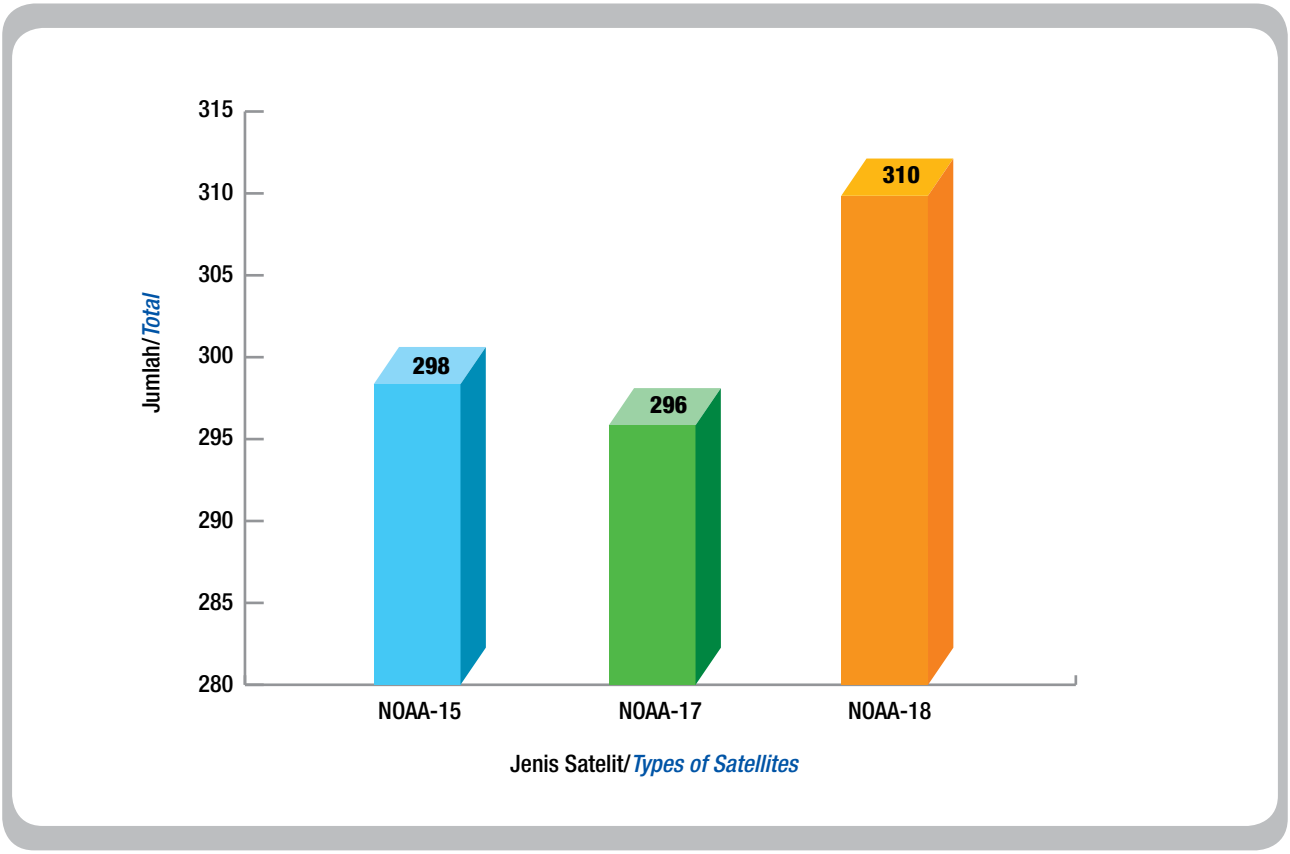
Data Reception

In 2010, ARSM Ground Station in Temerloh, Pahang continued with the real-time data reception activities from SPOT-4, SPOT-5, Radarsat-1 and MODIS (Aqua-1 and Terra-1) satellites. A total of 493 downlinks of SPOT-4, 556 downlinks of SPOT-5 and 98 downlinks of Radarsat-1 were done by utilizing 13m antenna system. Whilst, 2,286 downlinks of MODIS data were executed using 3.6m antenna system. Furthermore, 298, 296 and 310 downlinks of NOAA-15, NOAA-17 and NOAA-18, respectively, were acquired through 2.4m antenna system.

ARSM Ground Station is also entrusted to archive the downlinked satellite data and conduct preprocessing of data as requested by the customers through Remote Sensing Data Processing and Distribution Division. Hence, a total 1,515 scenes of SPOT and 101 scenes of Radarsat-1 were produced in 2010.



Cerapan data SPOT, MODIS dan Radarsat tahun 2010
2010 SPOT, MODIS and Radarsat data downlinks



Cerapan data NOAA tahun 2010
2010 NOAA data downlinks

Aktiviti cerapan data satelit masa sebenar di Stesen Bumi
Real time data reception activities at the Ground Station

Pengedaran Data

Selain memperkukuhkan aktiviti penyelidikan dan pembangunan, ARSM juga mempertingkatkan kecekapan dan keberkesanan perkhidmatan data remote sensing yang juga merupakan salah satu daripada *core business* agensi. Ini termasuk menaik taraf persijilan MS ISO Perkhidmatan Data ke versi terbaharu iaitu ISO 9001:2008 dan perolehan perisian PCI Proline dari Kanada bagi melaksanakan pembetulan secara automatik geometri imej satelit. Penggunaan perisian ini membolehkan kualiti produk data dipertingkatkan disamping mempercepatkan penyediaan produk data bagi memenuhi permintaan pelanggan.

Tahun 2010 menyaksikan peningkatan bilangan agensi pengguna (kerajaan dan swasta) sebanyak 70% berbanding tahun 2009 iaitu daripada 172 kepada 300 agensi dengan jumlah pengedaran data satelit sebanyak 6,482 scene. Peningkatan agensi pengguna kerajaan adalah selaras dengan peranan ARSM sebagai pembekal tunggal data satelit remote sensing kepada agensi kerajaan sebagai mana yang diluluskan oleh Kementerian Kewangan pada 23 Januari 2007. Antara faktor lain yang menyumbang kepada peningkatan ini ialah meningkatnya kesedaran agensi pengguna mengenai kepentingan dan kelebihan teknologi remote sensing hasil daripada aktiviti promosi teknologi yang dilaksanakan secara proaktif oleh ARSM.

Data Distribution

Besides strengthening the research and development activities, ARSM has also enhanced the effectiveness and efficiency of remote sensing data services which is one of the core business of the agency. These include the upgrading of the MS ISO certification to the latest version of ISO 9001:2008 and purchasing of PCI Proline software from Canada for automatic satellite image geometric correction. The use of this software has improved the quality of data products as well as expedites data productions to fulfill the user request.

The year 2010 has witnessed an increase in the number of user agencies (government and private sectors) by 70%, i.e from 172 in 2009 to 300 in 2010 with the distribution of 6,482 scenes of satellite data. The increase in the number of government user agencies is in line with the role of ARSM as the sole distributor of remote sensing satellite images to government agencies as approved by the Ministry of Finance on 23 January 2007. Other contributing factors include the increasing in awareness among user agencies on the importance and advantages of remote sensing technology as a result of proactive promotional activities implemented by ARSM.

Pegawai Khidmat Pelanggan sedang membuat kerja pemprosesan imej
User Service Officer is performing image processing works

Statistik Pengedaran Data Satelit
Satellite Data Distribution Statistics

i. Bilangan agensi pengguna
Number of user agencies

	2006	2007	2008	2009	2010
Sektor Kerajaan/*Government Sector*	76	131	135	142	268
Sektor Swasta/*Private Sector*	34	16	27	30	33
Jumlah/*Total*	**110**	**147**	**162**	**172**	**301**

ii. Bilangan scene yang dipohon
Number of scenes requested

Sektor Kerajaan/*Government Sector*	1,427	3,792	6355	8779	6,420
Sektor Swasta/*Private Sector*	184	118	189	380	114
Jumlah/*Total*	**1,611**	**3,910**	**6544**	**9,159**	**6,534**

iii. Jumlah data satelit yang dipohon mengikut jenis satelit
Number of satellite data requested based on types of satellites

a. Sektor Kerajaan/*Government Sector*

Landsat	92	173	199	145	59
Spot	904	3039	2375	2,874	2,757
Radarsat	302	431	177	89	188
Ikonos, QuickBird & WorldView	67	70	267	220	97
MODIS, OCM & NOAA	62	79	3337	5,451	3,263
Terrasar-X	0	0	0	0	54
Jumlah/*Total*	**1,427**	**3,792**	**6355**	**8,779**	**6,418**

b. Sektor Swasta/*Private Sector*

Landsat	3	15	8	0	0
Spot	177	99	145	380	111
Radarsat	4	3	34	0	0
Ikonos, QuickBird & WorldView	0	0	2	0	3
MODIS, OCM & NOAA	0	1	0	0	0
Jumlah/*Total*	**184**	**118**	**189**	**380**	**114**

KORPORAT DAN PERHUBUNGAN AWAM
CORPORATE AND PUBLIC RELATIONS

Pembangunan Modal Insan

ARSM menganjurkan dan menyertai sebanyak 127 program pembangunan modal insan bagi tahun 2010 yang merangkumi 59 program teknikal dan 68 program pengurusan dengan menggunakan peruntukan Pembangunan Modal Insan (PMI) MOSTI dan peruntukan projek penyelidikan dan pembangunan ARSM. Program ini merangkumi latihan sambil bekerja, kursus jangka pendek, seminar dan persidangan. Selain daripada pegawai dan kakitangan ARSM, program ini juga turut melibatkan penyertaan pegawai daripada beberapa agensi pengguna yang berkaitan serta pelajar universiti khususnya melalui latihan industri.

Kursus Remote Sensing Ke-16

Program latihan tahunan ini dilaksanakan dengan matlamat meningkatkan penggunaan teknologi remote sensing dalam negara. Kursus ini diadakan di Ibu Pejabat ARSM pada 31 Mei-11 Jun 2010 bagi Modul 1 dan 14-25 Jun 2010 bagi Modul 2. Seramai 32 peserta dari agensi kerajaan dan swasta, termasuk sepuluh (10) pegawai ARSM menghadiri kursus tersebut yang dikendalikan oleh Prof. B.C. Forster dari University of New South Wales, Australia.

Human Development Programme

ARSM has organized and participated in 127 human capital development programmes comprising 59 on technical and 68 on management using MOSTI's Human Capital Development (HCD) fund and ARSM project-related research and development funding. The programmes comprised on-job trainings, short courses, seminars and conferences. Beside the officers and staff of ARSM, the programmes have also benefited officers of several related user agencies and university students particularly through industrial trainings.

16th Remote Sensing Course

This annual programme is organised with the aim to increase the utilisation of remote sensing technology in the country. The course was held at ARSM Headquarters on 31 May-11 June 2010 for Module 1 and 14-25 June 2010 for Module 2. A total of 32 participants from various government agencies and private sectors including ten (10) officers from ARSM attended the course which was conducted by Prof. B.C. Forster from University of New South Wales, Australia.

Peserta Kursus Remote Sensing Ke-16: Modul 1
Participation of the 16th Remote Sensing Course: Module 1

Peserta Kursus Remote Sensing Ke-16: Modul 2
Participation of the 16th Remote Sensing Course: Module 2

Bengkel Penggunaan Data Satelit TerraSAR-X dalam Aplikasi Pengurusan Sumber Asli, Pertanian, Prasarana Awam, Pemetaan Topografi dan Keselamatan Negara

Bengkel ini telah diadakan pada 23-26 Mac 2010 di ARSM dengan objektif utama untuk memperkenalkan penggunaan data satelit TerraSAR-X dalam pelbagai aplikasi. Seramai 35 orang peserta yang terdiri daripada sepuluh (10) orang pegawai penyelidik ARSM dan 25 orang peserta dari agensi pengguna menghadiri kursus tersebut.

TerraSAR-X adalah data satelit radar beresolusi tinggi yang dihasilkan bagi memenuhi keperluan pengguna komersial seluruh dunia. Di samping produk asas data radar, ia juga menyediakan data radar pelbagai kombinasi polarimetri dan *Digital Surface Models* (DSM) dengan menggunakan teknik radargrametri.

Workshop on the Use of TerraSAR-X Satellite Data in the Application of Natural Resources Management, Agriculture, Public Utilities, Topographic Mapping and National Defence

The workshop was held on 23-26 March 2010 at ARSM with the objective to promote the use of TerraSAR-X satellite data in the applications of natural resources management, agriculture, public utilities, topographic mapping and national defence. The workshop was attended by 35 participants comprising ten (10) ARSM research officers and 25 participants from the user agencies.

TerraSAR-X is a high resolution radar satellite data specially designed to meet the requirements of commercial users worldwide. Apart of basic radar image products, it also provides a variety of polarimetric combinations and Digital Surface Models (DSM) by using radargrammetry techniques.

Sebahagian daripada peserta Bengkel Penggunaan Data Satelit TerraSAR-X
Some of the participants for the Workshop on the Use of Terrasar-X Satellite Data

Kursus Orientasi

Kursus Orientasi merupakan kursus pengenalan kepada organisasi yang dianjurkan untuk pegawai dan kakitangan baharu. Pada tahun 2010, kursus ini diadakan sebanyak dua (2) kali iaitu pada 9-12 Februari dan 13-15 Disember 2010 dengan penyertaan masing-masing seramai 12 dan 15 orang peserta. Antara lain, kursus ini merangkumi taklimat mengenai peranan, fungsi dan peraturan kerja di ARSM. Kursus tersebut diadakan di Stesen Bumi, Temerloh, Pahang manakala majlis penutup kursus pula disempurnakan di Ibupejabat ARSM di Kuala Lumpur.

Orientation Course

The Orientation Course is an introductory course on organisational matters organised for new officers and staff. In 2010, the course was conducted twice; on 9-12 February and 13-15 December 2010 with the participation of 12 and 15 participants, respectively. Amongst others, the course includes briefing on the roles, functions, and working procedures in ARSM. The course was conducted at the Ground Station in Temerloh, Pahang whilst the closing ceremony was held in ARSM Headquarters in Kuala Lumpur.

Latihan Industri

Pada tahun 2010, seramai 10 orang pelajar universiti tempatan menjalani latihan industri di ARSM. Mereka terdiri daripada pelajar UTM (2), UM (1), UPM (1), UMS (2), UMT (3) dan USM (1). Antara lain, pelajar-pelajar tersebut didedahkan dengan peranan dan fungsi agensi, peraturan kerja di jabatan kerajaan serta kaedah untuk menjalankan penyelidikan dalam bidang teknologi remote sensing. Pelajar juga menjalankan mini projek penyelidikan dalam bidang masing-masing menggunakan teknologi remote sensing, GIS dan GPS dibawah seliaan pegawai penyelidik ARSM.

Industrial Training

In 2010, 10 students from various local universities attended and completed their industrial training at ARSM. The students were from UTM (2), UM (1), UPM (1), UMS (2), UMT (3) and USM (1). Among others, the students were briefed on roles and functions of the agency, office regulations in government agencies and procedures to conduct research in remote sensing technology. The students have also conducted mini research projects in respective disciplines using remote sensing, GIS and GPS technologies under the supervision of ARSM research officers.

Pembentangan hasil kajian projek mini oleh salah seorang pelajar latihan industri pada 1 Julai 2010
Mini research project presentation by one of the industrial training students on 1 July 2010

Pengurusan Kualiti

Audit Pematuhan ISO 9001:2008 Perkhidmatan Data Remote Sensing

Sesi Audit Pematuhan ISO 9001:2008 bagi Perkhidmatan Data Remote Sensing ini diadakan pada 29-30 April 2010. Audit pematuhan ini adalah bertujuan memantau pelaksanaan peralihan ISO 9001:2000 kepada versi terbaharu iaitu ISO 9001:2008. Secara keseluruhannya, juruaudit mendapati sistem kualiti Perkhidmatan Data Remote Sensing berjalan dengan baik dan pihak SIRIM QAS International Sdn. Bhd. mengesahkan penggunaan ISO 9001:2008 mulai 2 September 2010.

Audit Pemantauan ISO 27001:2005 ISMS

Sesi Audit Pemantauan ISO 27001:2005 Sistem Pengurusan Keselamatan Maklumat (ISMS) ARSM yang diadakan pada 29-30 September 2010 mencadangkan dua (2) penambahbaikan untuk dilaksanakan. Walau bagaimanapun, pada keseluruhannya pihak SIRIM QAS International Sdn. Bhd. berpuashati dengan pelaksanaan dan penambahbaikan ISMS yang dilaksanakan secara berterusan di agensi ini.

Quality Management

ISO 9001:2008 Remote Sensing Data Services Compliance Audit

The ISO 9001:2008 Remote Sensing Data Services Compliance Audit was held on 29-30 April 2010. The main aim of the compliance audit is to monitor the implementation process during transition from ISO 9001:2000 to the latest ISO 9001:2008. In general, the quality system for Remote Sensing Data Services is found to be in compliance and SIRIM QAS International Sdn. Bhd has endorsed the use of ISO 9001:2008 effective from 2 September 2010.

ISO 27001:2005 ISMS Surveillance Audit

The Surveillance Audit of ISO 27001:2005 ISMS which was held at ARSM on 29-30 September 2010 recommended two (2) improvements to be implemented. Nevertheless, SIRIM QAS International Sdn. Bhd. is satisfied with the implementation and continuous improvements of the ISMS undertaken by the agency.

Persijilan MS ISO 9001 : 2008 bagi perkhidmatan data remote sensing
MS ISO 9001 : 2008 certification for remote sensing data services

Kerjasama Serantau dan Antarabangsa

Lawatan Delegasi Viet Nam dan Sepanyol

Pada 30 November hingga 4 Disember 2010, ARSM menerima lawatan tujuh (7) pakar daripada *National Representative Space Council (NRSC)*, Viet Nam. Tujuan lawatan ini ialah untuk berkongsi pengalaman dan maklumat mengenai pengendalian program angkasa. Delegasi ini turut dibawa melawat Planetarium Negara, Universiti Multimedia dan Jabatan Meteorologi Malaysia (JMM). ARSM juga telah menerima lawatan En. Carlos Lopez Montero, wakil Pejabat Ekonomi dan Komersil, Sepanyol pada 26 Mei 2010.

Regional and International Cooperation

Visit by Viet Nam and Spanish Delegations

On 30 November until 4 December 2010, ARSM received seven (7) experts from National Representative Space Council (NRSC) of Viet Nam. The main aim of the visit is to share experience and knowledge on the management of space programmes. The delegations have also visited the National Planetarium, Multimedia University (MMU) and Malaysian Meteorological Department. ARSM has also received a visit by Mr. Carlos Lopez Montero from Spanish Economic and Commercial Office on 26 May 2010.

Delegasi Viet Nam sedang diberi taklimat mengenai program ARSM
Viet Nam delegation being briefed on ARSM programmes

Mesyuarat Sub-Komiti Teknologi dan Aplikasi Angkasa ASEAN (ASEAN-SCOSA)

Ketua Pengarah ARSM selaku Pengerusi ASEAN-SCOSA telah mempengerusikan mesyuarat ASEAN-SCOSA ke-21 di Vientiane, Lao PDR pada 17-18 Mei 2010. Sembilan (9) negara ASEAN iaitu Brunei Darussalam, Filipina, Indonesia, Myanmar, Malaysia, Singapura, Thailand, Viet Nam dan tuan rumah Lao PDR telah menghadiri mesyuarat kali ini.

Mesyuarat ini diadakan bagi membincangkan status projek kerjasama serantau dalam bidang teknologi dan aplikasi angkasa. Status terkini projek kerjasama di bawah ASEAN-SCOSA yang dilaporkan ialah terdapat dua (2) projek yang sedang berjalan, enam (6) projek masih memerlukan peruntukan dan dua (2) projek baharu.

ASEAN Sub-Committee on Space Technology and Applications (ASEAN-SCOSA) Meeting

The Director General of ARSM as the Chairman of ASEAN-SCOSA chaired the 21st ASEAN-SCOSA held in Vientiane, Lao PDR on 17-18 May 2010. Nine (9) member countries namely: Brunei Darussalam, The Philippines, Myanmar, Malaysia, Singapore, Thailand, Indonesia, Viet Nam and Lao PDR as the host country attended this meeting.

The meeting was organised to discuss the status of regional cooperation projects in space technology and applications. It was reported that the latest status of the ASEAN-SCOSA collaboration projects were two (2) on-going projects, six (6) still require funding and two (2) new projects.

Ahli Mesyuarat ASEAN-SCOSA ke 21 di Vientiane, Lao PDR
Members of the 21st ASEAN-SCOSA Meeting in Vientiane, Lao PDR

Ketua Pengarah ARSM mempengerusikan Mesyuarat ASEAN-SCOSA ke 21
Director General of ARSM chairing the 21st ASEAN-SCOSA Meeting

Mesyuarat Komiti Sains dan Teknologi ASEAN (ASEAN-COST)

Mesyuarat ASEAN-COST ke-59 diadakan di Vientiane, Lao PDR pada 19-21 Mei 2010 manakala mesyuarat ke-60 pula diadakan di Krabi, Thailand pada 11-16 Disember 2010. Ketua Pengarah ARSM selaku Pengerusi ASEAN-SCOSA melaporkan status terkini pelaksanaan program di bawah sub-komiti ASEAN-SCOSA.

ASEAN-Committee on Science and Technology (ASEAN-COST) Meeting

The 59th ASEAN-COST Meeting was held in Vientiane, Lao PDR on 19-21 May 2010, whilst the 60th meeting was held in Krabi, Thailand on 11-16 December 2010. The Director General of ARSM as the chairman of ASEAN-SCOSA reported on the latest status of programmes implemented under ASEAN-SCOSA sub-committee.

Ahli Mesyuarat ASEAN-COST ke-59 di Vientiane, Lao PDR
Members of the 59th ASEAN-COST Meeting in Vientiane, Lao PDR

Senarai Program Pembangunan Modal Insan bagi Tahun 2010
List of Human Capital Development Programmes in 2010

A) Teknikal/*Technical*

Bil. *Num.*	Program *Programme*	Tarikh *Date*	Bil. Peserta *Num. of Participants*	Penganjur *Organiser*
1.	*16th Asia Pacific Regional Space Forum (APRSAF)*	27-29 Jan	1	ASEAN Secretariat
2.	*ASEAN Information on Demand Conference 2010*	26 Jan	1	IBM Malaysia
3.	*Executive Talk: Sensor Calibration and Data Handling*	11 Feb	80	ARSM
4.	Kuliah Professional: Role of Geomatics In Build Environment	3 Mac	2	UITM
5.	*7th Annual Enterprise Security Asia Conference 2010*	3-4 Mac	1	AC-Nergy Sdn. Bhd
6.	Sesi Kolokium 2/2010: Satellite Altimetry and Its Applications	19 Mac	62	ARSM
7.	Bengkel Kesedaran Pengguna-Teknologi Remote Sensing dan Teknologi yang berkaitan	19 Mac	200	ARSM-UPEN Sabah
8.	Bengkel Memperkenalkan Kegunaan Satelit Terrasar-X Dalam Aplikasi Pengurusan Sumber Asli, Pertanian, Prasarana Awam, Pemetaan Topografi dan Keselamatan Negara	23-26 Mac	10	ARSM
9.	Execitive Talk: Kesedaran Keselamatan Siber bertajuk 'I Know What You Did Last Raya!'	29 Mac	5	MOSTI
10.	Kursus Pra-Pemprosesan Imej Satelit Razaksat	5 Apr	2	ARSM
11.	Kursus 'Defeniens Essentials Training and Rule Set Training'	7-13 Apr	8	ARSM
12.	*7th Session of The Intergovernmental Coordination Group for The Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS-VII)*	13-17 Apr	2	ICG/IOTWS, UNESCO
13.	*Conference DSA*	20-21 Apr	1	MINDEF
14.	*Training on Biomass & Carbon Stock Inventory*	20-23 Apr	1	Institut Penyelidikan dan Perhutanan Malaysia (FRIM)
15.	*Seminar on National Communication Satellite User Requirement*	29 Apr	1	Agensi Angkasa Negara (ANGKASA)
16.	Mesyuarat Ke-9 JKP Sub-Regional Peringkat Menteri (MSC) dan Mesyuarat Ke-9 Kumpulan Kerja Teknikal (WG) Peringkat Pegawai Berkenaan Jerebu Merentas Sempadan	29-30 Apr	1	KementerianSumber Asli dan Alam Sekitar (NRE)
17.	Sesi Kolokium 3/2010: *Technology Foresight*	30 Apr	48	ARSM
18.	*Linux System Administrator*	3- 6 Mei	1	INTAN
19.	*Earth Observation Business Network 2010 (EOBN2010)*	11-12 Mei	1	MDA Systems Ltd.

Bil. *Num.*	Program *Programme*	Tarikh *Date*	Bil. Peserta *Num. of Participants*	Penganjur *Organiser*
20.	Mesyuarat 'Sub-Committee on Space and Applications (SCOSA)' dan Mesyuarat ASEAN-COST	17-21 Mei	2	Vientiane, Lao PDR
21.	*Seminar on Flood Forecasting & Warning System (FFWS)*	24-25 Mei	1	UNITEN
22.	*Seminar on Flood Forecasting & Warning System (FFWS)*	24-25 Mei	1	UNITEN
23.	Kursus Remote Sensing (Modul 1)	31 Mei-11 Jun	24	ARSM
24.	*ASM International Conference (ASMIC) 2010*	2-3 Jun	3	Akademi Sains Malaysia
25.	*ENVI Workshop*	3 Jun	1	ESRI Malaysia
26.	Kursus Remote Sensing (Modul 2)	14-25 Jun	17	ARSM
27.	Kursus Teknik Rakaman Fotografi Digital	16-19 Jun	1	ASFONS MULTIMEDIA
28.	*12th Surveyors Congress*	17-18 Jun	2	The Institution of Surveyor Malaysia
29.	*National Seminar on Coastal Morphology 2010 : Muddy Coast of Malaysia*	17 Jun	2	NAHRIM
30.	Mesyuarat *Spot Image Direct Receiving Station (DRS) Meeting* 2010 - Jerebu Merentas Sempadan	22-24 Jun	2	SPOT IMAGE
31.	*National Rice Conference 2010: Strengthening Food Security Through Sustainable Rice Production*	28-30 Jun	2	Institut Penyelidikan dan Kemajuan Pertanian Malaysia (MARDI)
32.	*Research Methodology*	5-7 Jul	2	Agensi Nuklear Malaysia
33.	*International Conference on Food Security During Challenging Times*	5-7 Jul	2	UPM
34.	*ISPRS Technical Commision VII Symposium*	5-7 Jul	1	International Society for Photogrammetry and Remote Sensing (ISPRS)
35.	*Workshop on the Development of the ASEAN Peatland Fire Prediction and Warning System*	13-14 Jul	2	Regional Project Executing Agency (RPEA) and Global Environment Centre
36.	*Seminar on Rubber Yield Prediction by Using Remote Sensing and GIS in South East Asia Region*	29-30 Jul	2	Geo-Informatics and Space Technology Development Agency (GISTDA)
37.	*Developing Web Application Using Microsoft Visual Studio 2008*	20-24 Sept	5	Redynamics Asia Sdn Bhd
38.	Bengkel Teknologi dan Aplikasi Sistem Satelit Navigasi Global	27-28 Sept	2	ANGKASA
39.	*2010 Capacity Building Workshop of Satellite Remote Sensing for Southeast Asian Scientist*	27 Sept-5 Okt	1	Center for Space and Remote Sensing Research, Taiwan

Bil. *Num.*	Program *Programme*	Tarikh *Date*	Bil. Peserta *Num. of Participants*	Penganjur *Organiser*
40.	Seminar Kebangsaan Pemuliharaan Hutan Pesisir Pantai 2010	5-6 Okt	1	Jabatan Hutan Semenanjung Malaysia
41.	Persidangan ICT Kebangsaan 2010 (NICT 2010)	11-15 Okt	2	INTAN
42.	Quality Management Symposium 2010 "Bedrock of Winning Strategy & Leading Innovation"	13-14 Okt	1	Nuklear Malaysia
43.	Kursus GIS	25-29 Okt	7	ARSM
44.	*Seminar Technology Update Siri 8/2010: "ICT Implementation Towards Government Effictiveness"*	26 Okt	2	INTAN
45.	Technical Talk: Potensi Teknikal dan Kegunaan Data Satelit RADARSAT-2 dalam Pelbagai Bidang Aplikasi	1 Nov	75	ARSM
46.	*2nd Asian Heads of Research Councils (ASIAHORCS) Joint Symposium*	1-2 Nov	2	USM
47.	*31st Asian Conference on Remote Sensing*	1-5 Nov	3	Vietnam Association of Geodesy, Cartography and Remote Sensing
48.	Kuala Lumpur Innovation Forum (KLIF 2010)	3-4 Nov	1	MOSTI
49.	*National Seminar on Meteorology: Enhancing Weather and Climate Services*	9 Nov	1	Jabatan Meteorologi Malaysia
50.	Seminar Teknikal Kebangsaan Gempa Bumi dan Tsunami	10-11 Nov	1	Jabatan Meteorologi Malaysia
51.	*Adobe Photoshop CS4 Level 2: Making Headway With Photoshop*	24-25 Nov	2	Teras One Solution Sdn Bhd
52.	Working Attachment at Stesen Bumi Jhongli, Taiwan	29 Nov-3 Dis	2	Center for Space and Remote Sensing Research,Taiwan
53.	Bengkel Pengukuhan Kefahaman Penyediaan Laporan Penilaiaan Outcome Program Pembangunan Kementerian Sumber Asli dan Alam Sekitar (NRE) Bil. 3/2010	3-5 Dis	1	Kementerian Sumber Asli dan Alam Sekitar
54.	*Space Application to Reduce Water-Related Disaster Risk in Asia*	7-9 Dis	1	UN-ESCAP
55.	Bengkel 'Train the Trainers for Nuclear Power Programme (NPP) Public Communicators'	7-10 Dis	1	NUKLEAR MALAYSIA
56.	*What's New in ERDAS IMAGINE 2010 & Satellite Image Processing in Leica Photogrammetry Suite (LPS) Course*	13-16 Dis	11	ARSM
57.	Simposium Pembangunan Industri Tuna 2010	16 Dis	1	Jabatan Perikanan Malaysia
58.	*Short Course on Fundamental of Groundwater, Technology and Management*	20-23 Dis	1	Jabatan Mineral dan Geosains Malaysia
59.	Bengkel Metodologi Penyelidikan	21-23 Dis	4	Nuklear Malaysia

B) Pengurusan/*Management*

Bil. *Num.*	Program *Programme*	Tarikh *Date*	Bil. Peserta *Num. of Participants*	Penganjur *Organiser*
1.	Kursus Orientasi	9-11 Feb	25	ARSM
2.	*Executive Talk: The Power of a Positive Attitude*	19 Jan	6	INTAN
3.	Sesi Kolokium 1/2010: Mengendalikan Kes Gangguan Seksual di Tempat Kerja	22 Jan	86	ARSM
4.	*Executive Talk: ESQ Leadership*	22 Jan	86	ARSM
5.	Program Wacana Hadhari MOSTI	2 Feb	5	MOSTI
6.	*Workshop on Good Governance*	2 Feb	1	Institut Kefahaman Islam Malaysia (IKIM)
7.	Pengurusan Rekod & Fail yang Berkesan	3-4 Feb	2	SETC Management
8.	Program Budaya Kerja Pencapaian Diutamakan	6-9 Feb	1	MOSTI
9.	*Occupational Safety and Health Management System Course*	8-9 Feb	2	National Institute of Occupational Safety & Health (NIOSH)
10.	Latihan Aplikasi Modul-Modul Sistem e-Perolehan	16-17 Mac	3	MOSTI/ ARSM
11.	*ISO 9001: 2008 Internal Auditing*	24-25 Feb	2	SIRIM
12.	Wacana Hadhari : 'We Love Rasulullah S.A.W' - Sempena Maulidul Rasul	2 Mac	8	MOSTI
13.	Syarahan Umum: Dream Are Possible	3 Mac	1	UKM
14.	Meningkatkan Mutu Pengurusan Pejabat dan Tugas yang Cemerlang	8-9 Mac	2	BIZ Training
15.	Penyelenggaraan & Penyesuaian Buku Vot	8-10 Mac	1	Institut Perakaunan Negara (IPN)
16.	*National Conference on Procurement Best Practices*	9-10 Mac	1	Royale Chulan, Kuala Lumpur
17.	Kursus Pengurusan Buku Perkhidmatan	10-12 Mac	2	Yayasan Amanah Latihan Berkanun (YALB)
18.	Bengkel Minit Mesyuarat dan Penggayaan Bahasa	15-17 Mac	2	MOSTI
19.	Sesi Ceramah: Kesihatan dan Keselamatan Pekerja di Pejabat	19 Mac	89	ARSM
20.	Pengurusan Aset & Stor, Kehilangan, Hapuskira dan Pelupusan	15-18 Mac	1	Institut Perakaunan Negara (IPN)
21.	Kursus Panduan Membaca Doa bagi Majlis Rasmi dan Separa Rasmi Kerajaan	12-14 Apr	4	MOSTI
22.	Kursus Pembangunan Pemandu Cemerlang	16-18 Apr	1	MOSTI
23.	Siri Ceramah Hak-hak Wanita Islam Menurut Undang-Undang Keluarga Islam di Malaysia	23 Apr	5	Jabatan Peguam Negara

Bil. *Num.*	Program *Programme*	Tarikh *Date*	Bil. Peserta *Num. of Participants*	Penganjur *Organiser*
24.	*Seminar on the Importance of Security Standards in a Globalised Economy*	24 Apr	1	Standard Malaysia
25.	Pengurusan Kewangan Berhemah	29 Apr	8	MOSTI
26.	Kursus ePerolehan Modul Sebut Harga, Tender, eBiding dan Kontrak Kementerian Bil 5/2010	3-5 Mei	3	Kementerian Kewangan Malaysia
27.	Kem Biro Tatanegara (BTN)	12-16 Mei	6	BTN
28.	Bengkel Pengukuhan Integriti Perkhidmatan Awam	12-14 Mei	2	MOSTI
29.	*6th World Islamic Economic Forum (WIFE)*	18-20 Mei	1	MOSTI
30.	Kursus Komunikasi Berkesan & Team Building	21-23 Mei	49	ARSM
31.	Kursus Pengurusan Aset MOSTI	16-20 Mei	3	MOSTI
32.	Taklimat Mengenai Wasiat, Pusaka dan Amanah	25 Mei	5	MOSTI
33.	*Executive Talk: World Class Performances Through Action Revolutuon Approaches*	27 Mei	3	INTAN
34.	Latihan Hand-On Submodul Laporan Penilaian Prestasi Tahunan (LNPT) HRMIS)	27 Mei	3	MOSTI
35.	*Effective Document & Records Management*	7 Jun	1	SIRIM
36.	Kursus Pengurusan Dokumen dan Rahsia	21-23 Jun	2	MOSTI
37.	Kursus Menjana Motivasi Kecemerlangan	24-26 Jun	2	YALB
38.	Kursus Bina Insan Siri 2/2010	25-27 Jun	3	MOSTI
39.	Bengkel Pengemaskinian Undang-Undang	23-24 Jun	1	Jabatan Peguam Negara
40.	Kursus Jurulatih Kawad	22 Jun-5 Jul	2	FELDA Security Services Sdn. Bhd
41.	Kursus Pengurusan Perakaunan Kerajaan bagi Zon Utara	19-22 Jul	1	Jabatan Akauntan Negara
42.	Latihan Hand-On Sub-modul Pengurusan Cuti HRMIS	9 Jul	12	ARSM
43.	Latihan Hands-On Sub-modul Laporan Penilaian Prestasi Tahunan HRMIS	15 Jul	20	ARSM
44.	Latihan Hands-On Sub-modul Pengurusan Cuti HRMIS	20 Jul	33	ARSM
45.	Latihan Hands-On Sub-modul Pengistiharan Harta HRMIS	23 Jul	37	ARSM
46.	*National Procurement Guidelines Forum – Understanding the Integrity Pact & The Do's and Don'ts Of Government Procurement*	22 Jul	2	Malaysian Institute of Corporate Governance
47.	Program 'Tun Abdul Razak Bapa Pembangunan-Suatu Pengkisahan'	28 Jul	3	MOSTI
48.	Kursus Pengurusan Emosi dan Menangani Stres dengan Berkesan	2-3 Ogos	1	HPI Consultants And Bhd

Bil. *Num.*	Program *Programme*	Tarikh *Date*	Bil. Peserta *Num. of Participants*	Penganjur *Organiser*
49.	Internal Auditing (A Practical Approach)	5-6 Ogos	2	SIRIM
50.	Sesi Kolokium : Taklimat Budaya Inovasi & Kumpulan Inovasi dan Kreatif (KIK) dalam Perkhidmatan Awam	6 Ogos	67	ARSM
51.	Kursus Induksi Polis Bantuan FELDA Siri 5/2010	1-7 Ogos	7	FELDA Securuty Services Sdn Bhd
52.	PROGRAM Ceramah Sempena Menyambut Ihya' Ramadhan	11 Ogos	9	MOSTI
53.	Seminar Kesedaran Keselamatan 2010	19 Ogos	170	ARSM
54.	Program Solat Sunat Duha, Solat Sunat Tasbih dan Tazkirah Ramadhan	24 Ogos	9	MOSTI
55.	Ceramah Ramadhan 2010/1431H	2 Sept	10	MOSTI
56.	Kursus Bahasa Inggeris	6- 7 Okt	2	MOSTI
57.	Kursus Pengemaskinian Perundangan Teknik "Cut & Paste" dan Pengenalan Maklumat Perundangan	11-12 Okt	1	Jabatan Peguam Negara
58.	Kursus Setiausaha Profesional	11-12 Okt	2	Deeta Management
59.	Bengkel Pemurnian Panduan Pelaksanaan Audit Dalam ISMS Sektor Awam	15-17 Okt	2	MAMPU
60.	Public Speaking	20-21 Okt	2	MOSTI
61.	Bengkel Pengurusan Jenazah	20-21 Okt	2	MOSTI
62.	*Seminar on The Navigation of Malaysian Mediation-Route to Resolution*	25 Okt	10	Jabatan Peguam Negara
63.	*Capacity Building Programme on Impact Assessment Using Social Return on Investment (SROI) Methodology*	26 Okt	1	MTDC
64.	Kursus Induksi Polis Bantuan Siri 8/2010	31 Okt-10 Nov	2	Felda security services sdn bhd
65.	Taklimat Pengenalan E-Pembelajaran Sektor Awam (EPSA)	3 Nov	2	MOSTI
66.	Seminar 'Kreatif dan Inovasi Dalam Dunia Semasa: Pendekatan Islami'	9-10 Nov	2	IKIM
67.	Persidangan Daya Saing: Memacu Inovasi ke Arah Daya Saing	30 Nov	1	Perbadanan Produktiviti Malaysia
68.	Kursus Orientasi Bil. 2/2010	13-15 Dis	15	ARSM

PROMOSI TEKNOLOGI
TECHNOLOGY PROMOTION

Seminar Kesedaran Pengguna Teknologi Remote Sensing dan Teknologi Berkaitan

Seminar ini telah dianjurkan pada 19 Mac 2010 di Kota Kinabalu, Sabah dengan kerjasama Unit Perancang Ekonomi Negeri Sabah. Seminar ini dirasmikan oleh Y.B. Datuk Dr. Yee Moh Chai, Menteri Pembangunan Sumber dan Kemajuan Teknologi Maklumat Sabah. Seramai 200 peserta dari pelbagai jabatan dan agensi di Sabah menghadiri seminar ini.

Seminar sehari ini dianjurkan bagi meningkatkan kesedaran di kalangan pegawai dan kakitangan agensi kerajaan di Negeri Sabah mengenai teknologi remote sensing dan teknologi lain yang berkaitan (seperti GIS and GPS) serta kelebihan dan keupayaan teknologi tersebut, dan memperkenalkan beberapa pakej aplikasi remote sensing yang berjaya dibangunkan oleh ARSM dengan kerjasama aktif agensi kerajaan yang berkaitan.

User Awareness Seminar on Remote Sensing and Related Technologies

The seminar was organised on 19 Mac 2010 at Kota Kinabalu, Sabah with the cooperation of Sabah State Planning Unit. The seminar was officiated by the Honourable Y.B. Datuk Dr. Yee Moh Chai, Minister of Resource Development and Information Technology Sabah. Some 200 participants from various departments and agencies in Sabah attended the seminar.

This one-day seminar was held with the aim to increase the awareness of officers and staff of government agencies in Sabah on remote sensing and related technologies (such as GIS and GPS) as well as the advantages and capabilities of the technologies, and to introduce remote sensing application packages which were successfully developed by ARSM with active participation of the related government agencies.

Perasmian Seminar Kesedaran Pengguna Teknologi Remote Sensing dan Teknologi Berkaitan oleh Y.B. Datuk Dr. Yee Moh Chai, Menteri Pembangunan Sumber dan Kemajuan Teknologi Maklumat Sabah
Officiation of User Awareness Seminar on Remote Sensing and Related Technologies by Y.B. Datuk Dr. Yee Moh Chai, Minister of Resource Development and Information Technology Sabah

Penyampaian cenderahati imej satelit Kota Kinabalu kepada Y.B. Datuk Dr. Yee Moh Chai oleh Ketua Pengarah ARSM, Y.Bhg. Dato' Haji Darus bin Ahmad
A memento of Kota Kinabalu satellite image presented to Y.B. Datuk Dr. Yee Moh Chai by Director General of ARSM, Y.Bhg. Dato' Haji Darus bin Ahmad

Y.B. Menteri Pembangunan Sumber dan Kemajuan Teknologi Maklumat Sabah diberi penerangan semasa lawatan ke booth pameran ARSM

Y.B. Minister of Resource Development and Information Technology Sabah is being briefed during his visit to ARSM booth

Peserta Seminar Kesedaran Pengguna Teknologi Remote Sensing dan Teknologi Berkaitan

Participants of the User Awareness Seminar on Remote Sensing and Related Technologies

Pameran

ARSM menyertai sebanyak 22 pameran di sepanjang tahun 2010 terutamanya melalui program Karnival Malaysia Inovatif 2010 (MI2010) anjuran Kementerian Sains, Teknologi dan Inovasi (MOSTI). Selain daripada itu, ARSM juga turut menyertai pameran yang dianjurkan bersempena penganjuran konferens, seminar atau majlis tertentu di peringkat nasional dan antarabangsa. ARSM menggunakan pameran sebegini sebagai kaedah yang berkesan untuk mempromosi teknologi remote sensing dan teknologi lain yang berkaitan kepada profesional dan orang awam khususnya pelajar sekolah.

Antara pameran yang mendapat sambutan menggalakkan ialah pameran di Karnival MI2010 yang diadakan di enam (6) zon iaitu; Zon Utara, Zon Selatan, Zon Timur dan Zon Tengah di Semenanjung, Zon Sabah dan Zon Sarawak serta di Festival MI2010 di Stadium Putra Bukit Jalil, Kuala Lumpur.

Exhibition

ARSM participated in 22 exhibitions in 2010 particularly in 2010 Malaysia Innovative (MI2010) Carnivals organised by Ministry of Science, Technology and Innovation (MOSTI). ARSM has also participated in exhibitions organised in parallel to conferences, seminars, or specific events nationally and internationally. ARSM has been using exhibitions as an effective mechanism for the promotion of remote sensing and related technologies to professionals and general public especially the students.

Amongst the exhibitions which received overwhelming response were exhibitions held during MI2010 which were organised in six (6) zones, i.e Northern Zone, Southern Zone, Eastern Zone and Central Zone in Peninsular, Sabah Zone and Sarawak Zone, and the MI2010 Festival which was held at Stadium Putra, Bukit Jalil, Kuala Lumpur.

Pengunjung ke booth pameran ARSM di Karnival MI2010 Zon Sarawak pada 23-24 Oktober 2010
Visitors to ARSM booth at Sarawak Zone MI2010 Carnival on 23-24 October 2010

Senarai Pameran yang Disertai ARSM bagi Tahun 2010
List of Exhibitions Participated by ARSM in 2010

Bil. *Num.*	Pameran *Exhibition*	Tarikh *Date*	Tempat *Venue*
1.	Pameran Malaysia Inovatif 2010 Zon Utara	27- 28 Feb	Kangar, Perlis
2.	Pameran Seminar Kesedaran Pengguna Teknologi Remote Sensing dan Teknologi Berkaitan	19 Mac	Kota Kinabalu, Sabah
3.	*Science on Wheels* Peringkat Negeri Pahang	29 Mac	SMK Bukit Rangin, Kuantan, Pahang
4.	*Science on Wheels* Peringkat Negeri Pahang	30 Mac	SMK Seri Pekan, Pekan, Pahang
5.	*Science on Wheels* Peringkat Negeri Pahang	1 Apr	SMK Seri Jengka, Maran, Pahang
6.	*Science on Wheels* Peringkat Negeri Pahang	2 Apr	SMK Temerloh, Temerloh, Pahang
7.	Festival Hari Guru 2010	13-16 Mei	Kuantan, Pahang
8.	Pameran Malaysia Inovatif 2010 Zon Sabah	28-29 Mei	UMS, Kota Knabalu, Sabah
9.	Pameran Bersempena Penganjuran Kursus Remote Sensing Modul 1	31 Mei-11 Jun	ARSM
10.	Pameran Bersempena Penganjuran Kursus Remote Sensing Modul 2	14 Jun-25 Jun	ARSM
11.	*4th National GIS Conference*	28-29 Jun	PICC, Kuala Lumpur
12.	Pameran Malaysia Inovatif 2010 Zon Timur	30-31 Jul	Kuala Terengganu, Terengganu
13.	Karnival Inovasi Islam	5-8 Ogos	Putrajaya
14.	Pameran Malaysia Inovatif 2010 Zon Selatan	25-26 Sep	Batu Pahat, Johor
15.	International Greentech, Eco-Products and Conference (IGEM 2010)	13-17 Okt	KLCC, Kuala Lumpur
16.	Pameran bersempena *5th Islamic Conference of Ministers of Higher Education and Scientific Research*	19-21 Okt	KLCC, Kuala Lumpur
17.	Pameran Malaysia Inovatif 2010 Zon Sarawak	23-24 Okt	Kuching, Sarawak
18.	Pameran Malaysia Inovatif 2010 Zon Tengah	13-14 Nov	Melaka
19.	Pameran Festival Malaysia Inovatif 2010	24-26 Nov	Bukit Jalil, Kuala Lumpur
20.	Malaysian Agriculture, Horticulture and Agrotourism Exposition (MAHA)	26 Nov-5 Dis	Serdang, Selangor
21.	Pameran Pesta Jagung	3-5 Dis	Kota Marudu, Sabah
22.	Pameran Karnival Jalur Lebar Edisi Terengganu 2010	9-11 Dis	Pulau Warisan, Terengganu

Lawatan

Sepanjang tahun 2010, ARSM menerima seramai 1,231 pelawat termasuk 34 lawatan secara berkumpulan daripada pelbagai agensi kerajaan, swasta, institusi pengajian tinggi dan sekolah serta agensi luar negara.

Antara lawatan utama ke ARSM, ialah lawatan kerja oleh Y.Bhg. Prof. Datin Paduka Dr. Khatijah Mohd. Yusoff, Timbalan Ketua Setiausaha (Sains) MOSTI pada 25 Ogos 2010. Tujuan lawatan beliau ialah bagi mendapatkan gambaran sebenar mengenai aktiviti yang dijalankan oleh ARSM disamping memberikan amanat, panduan dan halatuju yang perlu diambil oleh ARSM.

Selain itu, Lembaga Kemajuan Terengganu Tengah (KETENGAH) pula melawat ARSM dengan tujuan mendapatkan pendedahan dan meningkatkan pengetahuan mengenai teknologi remote sensing dan teknologi lain yang berkaitan disamping membincangkan potensi penggunaan teknologi tersebut bagi meningkatkan kecekapan dan keberkesanan pelaksanaan dan pemantauan aktiviti pembangunan tanah.

ARSM turut memainkan peranan memberikan kesedaran mengenai kepentingan penggunaan teknologi remote sensing kepada peserta Bengkel Penilaian Impak Alam Sekitar (EIA) anjuran Institut Tadbiran Awam Negara (INTAN) yang diadakan secara berkala pada setiap tahun.

Visit

In 2010, ARSM received 1,231 visitors including 34 group visits from various government and private agencies, institutes of higher learning, schools, and foreign agencies.

Working visit by Y.Bhg. Prof. Datin Paduka Dr. Khatijah Mohd. Yusoff, Deputy Secretary General (Science) on 25 August 2010 is one of the main visits to ARSM. The aim of the visit is to obtain clear scenario on the development of ARSM as well as giving advice, guidance and directive to spearhead the agency further.

Development Authority of Terengganu Tengah (KETENGAH) has also visited ARSM with the main objective to gain exposure and broaden knowledge on remote sensing and related technologies as well as discussing on the possible use of this technology to enhance efficiency and effectiveness in implementing land development activities.

ARSM has also played an important roll in awareness on the importance of remote sensing technology to the participants of Environmental Impact Assessment Workshop which was periodically orgarnised every year by National Institute of Public Administration (INTAN).

Lawatan kerja Y.Bhg. Prof. Datin Paduka Dr. Khatijah Mohd. Yusoff, Timbalan Ketua Setiausaha (Sains) MOSTI pada 25 Ogos 2010
Visit by Y.Bhg. Prof. Datin Paduka Dr. Khatijah Mohd. Yusoff, Deputy Secretary General (Science) MOSTI on 25 August 2010

Lawatan Lembaga Kemajuan Terengganu Tengah (KETENGAH) pada 5 Ogos 2010
Visit by Development Authority of Terengganu Tengah (KETENGAH) on 5 August 2010

Taklimat kepada peserta Bengkel Penilaian Impak Alam Sekitar (EIA)
anjuran INTAN, Bukit Kiara pada 21 Jun 2010
Briefing to participants of Environmental Impact Assessment (EIA)
workshop organised by INTAN, Bukit Kiara on 21 June 2010

Senarai Lawatan ke ARSM pada Tahun 2010
List of Visits to ARSM in 2010

Bil. *Num.*	Jabatan/Agensi *Department/Agency*	Tarikh *Date*
1.	Kolej PTPL Seremban, Negeri Sembilan	5 Jan
2.	Jabatan Meteorologi Malaysia	19 Jan
3.	Institut Komunikasi dan Elektronik Tentera Darat (IKED)	21 Jan
4.	Fakulti Maritim dan Sains Marin, Universiti Malaysia Terengganu (UMT), Terengganu	22 Jan
5.	Institute of Surveyors Malaysia (ISM)	27 Jan
6.	Sekolah Menengah Kebangsaan Mengkarak	23 Mac
7.	Fakulti Sains Gunaan, Universiti Teknologi Mara (UiTM), Shah Alam	24 Mac
8.	Universiti Teknologi Mara (UiTM), Arau, Perlis	25 Mac
9.	Falkuti Sains Komputer dan Matematik, Universiti Teknologi Mara (UiTM), Shah Alam	30 Mac
10.	Fakulti Kejuruteraan dan Sains Geoinformasi, Universiti Teknologi Malaysia (UTM), Skudai, Johor	4 Mei
11	KD Pelandok Pangkalan TLDM, Lumut, Perak	6 Mei
12.	INPUMA (Universiti Malaya)	19 Mei
13	Institut Latihan dan Kefahaman Islam ATM, Port Dickson, Negeri Sembilan	20 Mei
14.	Pusat Latihan Peperangan Elektronik, Sg Buloh, Selangor	25 Mei
15.	Peserta Bengkel Penilaian Impak Alam Sekitar (EIA), INTAN, Bukit Kiara, Kuala Lumpur	21 Jun
16.	Peserta Bengkel Penilaian Impak Alam Sekitar (EIA), INTAN, Bukit Kiara, Kuala Lumpur	2 Ogos
17.	Lembaga Kemajuan Terengganu Tengah (KETENGAH), Terengganu	5 Ogos
18.	Kolej Saito Sdn Bhd	10 Ogos
19.	Lawatan Kerja Timbalan Ketua Setiausaha (Sains) MOSTI	24 Ogos
20.	Jabatan Perancangan Bandar dan Desa Negeri Melaka	3 Sep
21.	Persatuan Radio Amatur Negeri Pahang	23 Sept
22.	Fakulti Kejuruteraan, Universiti Putra Malaysia (UPM), Serdang	7 Okt
23.	INTAN, Bukit Kiara, Kuala Lumpur	19 Okt
24.	SK Seri Tualang, Temerloh, Pahang	20 Okt
25.	SMK Abu Bakar, Temerloh, Pahang	3 Nov
26.	Universiti Teknologi Malaysia (UTM), Skudai, Johor	3 Dis

Perpustakaan

Penggunaan bahan rujukan di perpustakaan ARSM oleh pengguna luar pada tahun 2010 telah bertambah berbanding tahun sebelumnya. Bilangan pengguna luar yang terdiri daripada pegawai agensi kerajaan dan pelajar IPT meningkat kepada 203 orang berbanding 180 orang pada tahun 2009. Jumlah keseluruhan pengguna perpustakaan ARSM pada tahun ini ialah 1,197.

Perpustakaan ARSM sentiasa berusaha meningkatkan koleksi rujukan dan perkhidmatan kepada semua pengguna. Pada tahun 2010, sebanyak 61 naskah buku diperoleh menjadikan jumlah koleksi sebanyak 6,175 naskah. Sebanyak 18 judul majalah/jurnal juga dilanggan untuk manfaat pengguna.

Library

The usage of reference material at ARSM library by external users in 2010 has increased compared to previous year. The number of external users comprising government officers and university students has increased from 180 in 2009 to 203. The total ARSM library users for 2010 were 1,197.

ARSM library is continuously enhancing its reference collections and services to all users. In 2010, 61 books were added into the collection to a total of 6,175. 18 journals were also subscribed for the benefits of the users.

Pencapaian Perpustakaan pada Tahun 2010
2010 Library Achievements

i. Koleksi Bahan/*Material Collection*

Bahan ***Materials***	**Perolehan** ***Acquisition***	**Jumlah Koleksi** ***Total Collection***
Monograf/*Monographs*	61 naskah/*issues*	6,175 nashah/*issues*
Tesis/*Thesis*	-	160 naskah/*issues*
Majalah/*Journal*	18 judul/*titles*	18 judul/*tittles*

ii. Perkhidmatan/Services

Perkara ***Item***	**Jumlah** ***Total***
Peminjaman/*Circulation*	720
Peminjaman melalui SPP/*Circulation through ILL*	5
Pengguna Luar/*External Users*	203



PEMBANGUNAN DAN PENGURUSAN ICT GEOSPATIAL
DEVELOPMENT AND MANAGEMENT OF GEOSPATIAL ICT

Pada tahun 2010, ARSM meneruskan usaha membudayakan ICT dalam urusan teras, penyampaian perkhidmatan dan menepati sasaran KPI yang ditetapkan. Antara inisiatif penting ICT yang dijalankan adalah pembangunan dan pengoperasian pangkalan data geospatial bersepadu dan beberapa sistem aplikasi bertujuan membantu meningkatkan kecekapan dalam pengurusan sumber asli, alam sekitar, bencana, kesihatan, keselamatan dan pembangunan tanah negara.

Penambahbaikan infrastruktur ICT secara berterusan telah dilaksanakan bagi memenuhi keperluan pengguna dalaman dan luaran termasuklah peningkatan kemudahan ICT bilik latihan, penggantian stesen kerja dan perkakasan rangkaian serta peningkatan komputer pelayan dan sistem UPS.

Mulai Februari 2010, Bahagian Pengurusan ICT Geospatial menjalankan sendiri penyelenggaraan sistem komputer ARSM selepas tamat tempoh kontrak penyelenggaraan oleh kontraktor. Sistem tersebut merangkumi komputer pelayan (berasaskan Windows, Unix dan Linux), stesen kerja, komputer pegawai, ruang storan, perkakasan rangkaian dan peranti komputer bagi menjamin ketersediaan dan kebolehpercayaan sistem komputer ARSM.

Daripada aspek pengurusan keselamatan maklumat pula, ARSM yang telah menerima pengiktirafan persijilan ISO 27001:2005 ISMS semenjak 2006 telah dilantik oleh pihak MAMPU bagi menganggotai Jawatankuasa ISMS Sektor Awam. Tujuan perlantikan ini adalah bagi membolehkan ARSM yang merupakan agensi kerajaan yang pertama memperoleh persijilan ini, berkongsi pengalaman dan pengetahuan termasuk dalam merangka garis panduan pengimplementasian ISMS di sektor awam.

In 2010, ARSM continue to inculcate Information and Communication Technology (ICT) culture in its core business, service deliveries and accomplishing its KPIs. Amongst the ICT initiatives implemented were development and operationalisation of integrated geospatial database and several application systems with the objective to increase efficiency in the management of natural resources, environment, disaster, health, security, and land development of the nation.

Continuous ICT infrastructure upgrades were carried out to cater for internal and external user needs. The upgrading works included refurbishment of training room's ICT facilities, replacement of workstations and network equipments, as well as enhancement of servers and UPS systems.

Since February 2010, the Geospatial ICT Management Division has performed self-hardware maintenance on ARSM computer systems after the expiry of the maintenance contract. The systems, comprising computer servers (Windows, Unix and Linux OS), workstations, desktops, storage capacity, networking hardwares and computer peripherals to ensure the availability and reliability of the ARSM computer systems.

In relation to information security management, ARSM which has received ISMS ISO 27001:2005 certification since 2006, has been appointed by MAMPU to be a member in Public Sector ISMS Committee. The appointment is to enable ARSM, being the first government agency to receive this certification, to impart experience and knowledge including in drafting guidelines for the implementation of ISMS in public sector.

Pegawai Bahagian Pembangunan dan Pengurusan ICT Geospatial sedang menjalankan penyelenggaraan komputer
Development and Management of Geospatial ICT officer is performing computer maintenance

PENTADBIRAN DAN KEWANGAN
ADMINISTRATION AND FINANCE

Pentadbiran dan Kewangan

Pada tahun 2010, ARSM menerima peruntukan Bajet Mengurus sebanyak RM20,257,200.00 dan Bajet Pembangunan sebanyak RM20,147,900.00. Peratus perbelanjaan masing-masing adalah sebanyak 98.16% dan 96.38%.

Jumlah kutipan hasil daripada agensi kerajaan yang merangkumi yuran kursus dan penjualan data satelit ialah sebanyak RM1,846,862.69 manakala daripada agensi swasta adalah sebanyak RM602,689.52.

Administration and Finance

In 2010, ARSM was allocated RM20,257,200.00 for Operating Budget and RM20,147,900.00 for Development Budget. The percentages of expenses were at 98.96% and 96.38%, respectively.

The total revenue from government agencies and private sector comprising course fees and satellite data sale was RM1,846,862.69 and RM602,689.52 respectively.

Perbelanjaan Bajet Mengurus dan Pembangunan bagi Tahun 2010
Operating and Development Budgets Expenditures for 2010

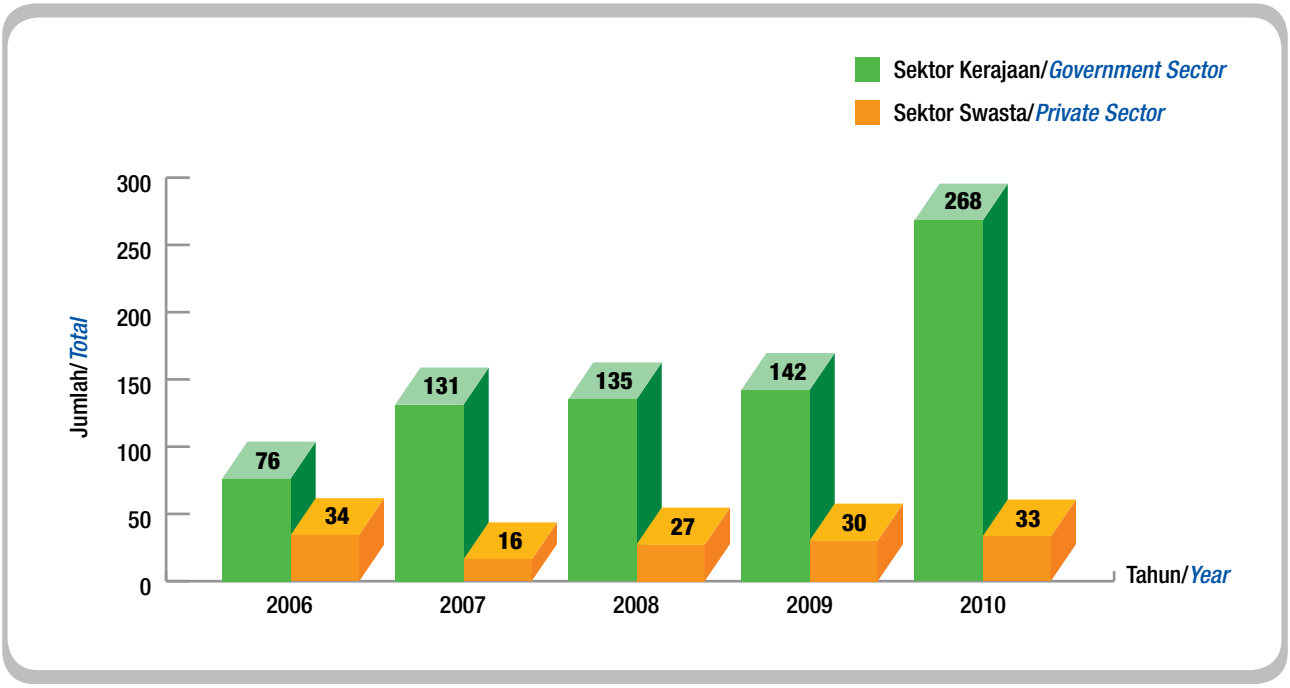
Perkara *Item*	RM (Juta/*Million*)		% Perbelanjaan *Expenditure*
	Bajet Diterima *Allocated Budget*	Bajet Dibelanjakan *Budget Spent*	
Bajet Mengurus/ *Operating Budget*	20.257	19.884	98.16
Bajet Pembangunan/ *Development Budget*	20.148	19.418	96.38
Jumlah/ *Total*	**40.405**	**39.303**	**97.27**

Kutipan hasil ARSM bagi tahun 2010
ARSM Revenue for 2010

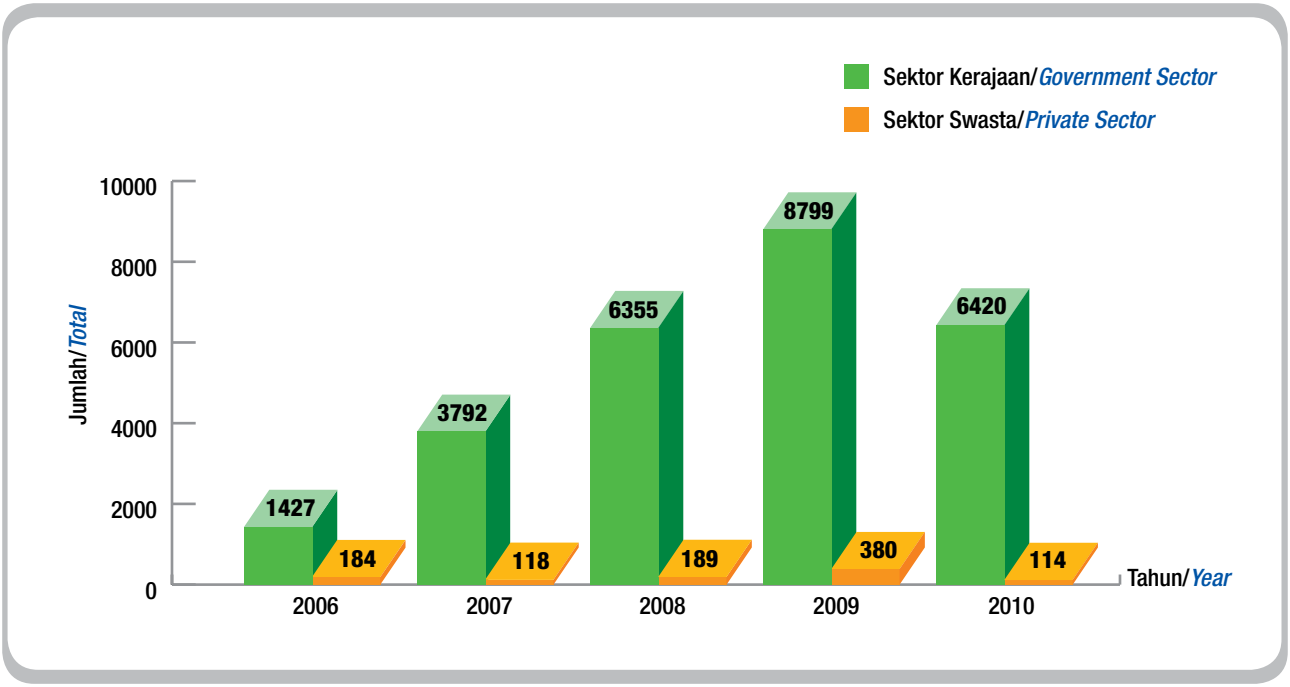
Perkara *Item*	RM Hasil *Revenue* (Juta/*Million*)	
	Agensi Kerajaan *Government Agencies*	Agensi Swasta *Private Sector*
Yuran Kursus dan Penjualan Data Satelit Remote Sensing/ *Course Fee and Sales of Remote Sensing Satellite Data*	1.847	0.603

PETUNJUK PRESTASI
PERFORMANCE INDICATORS

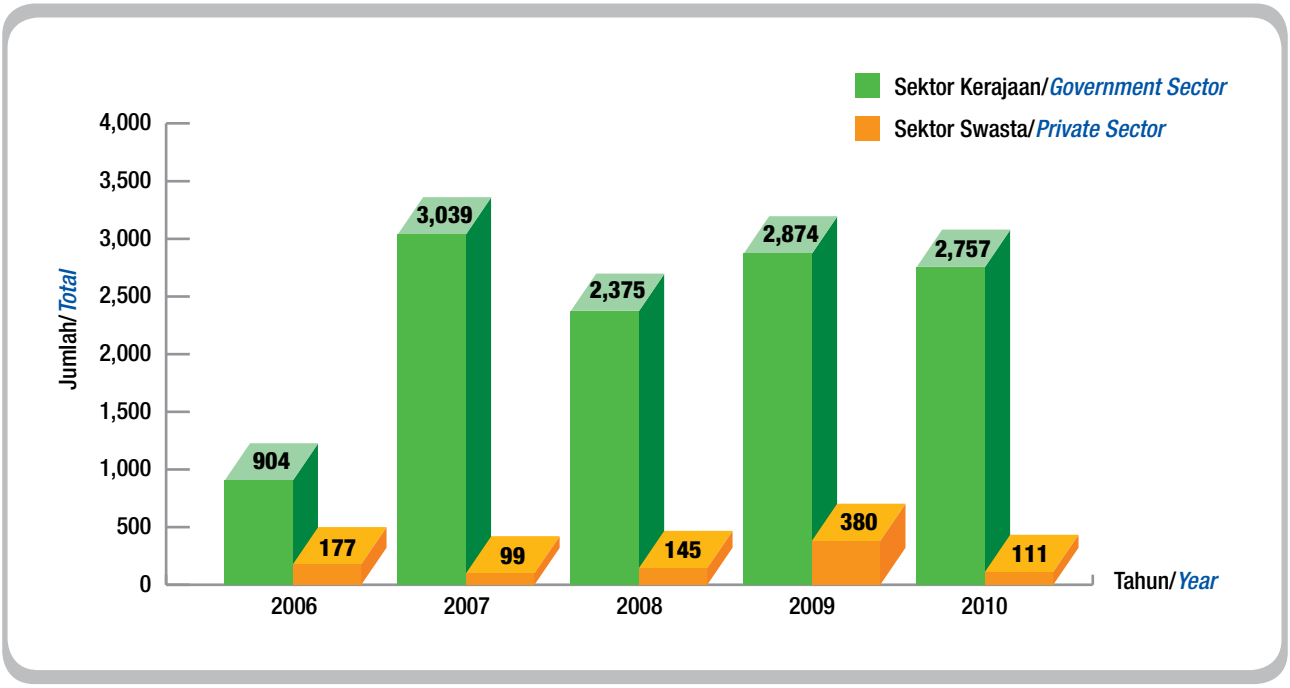
Perkhidmatan Data Satelit Remote Sensing
Remote Sensing Satellite Data Services



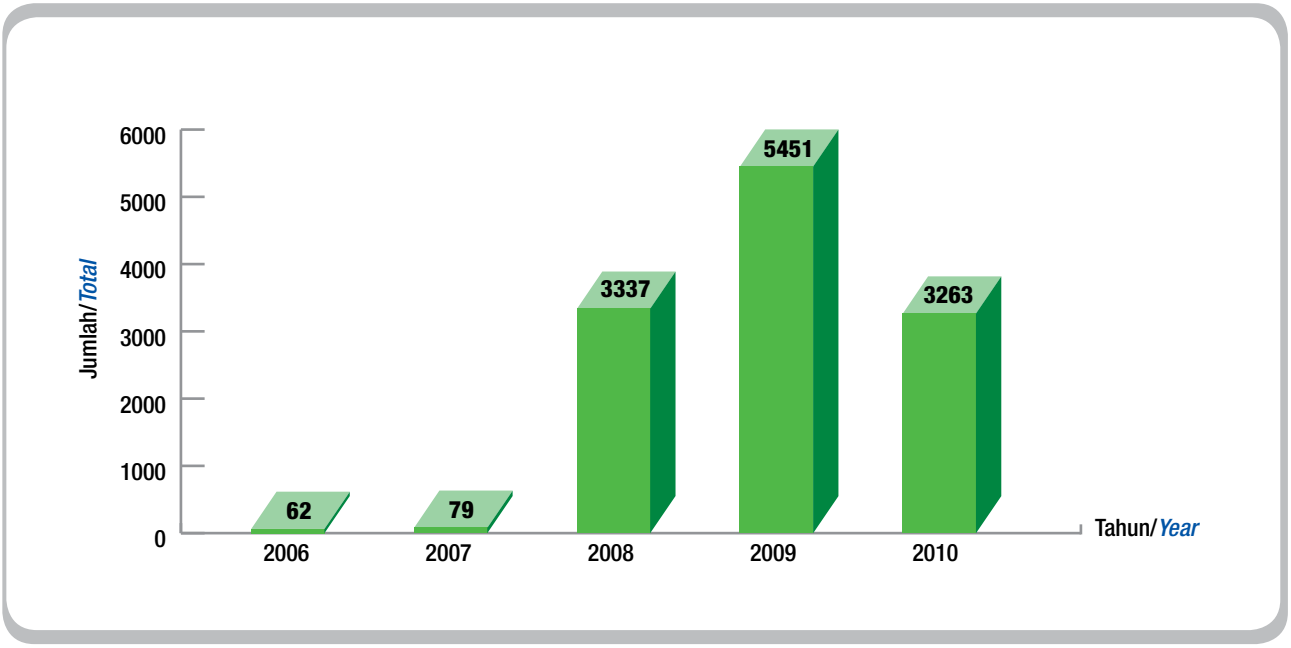
Bilangan agensi pengguna
Number of user agencies



Bilangan scene yang dipohon oleh agensi pengguna
Number of scenes requested by user agencies

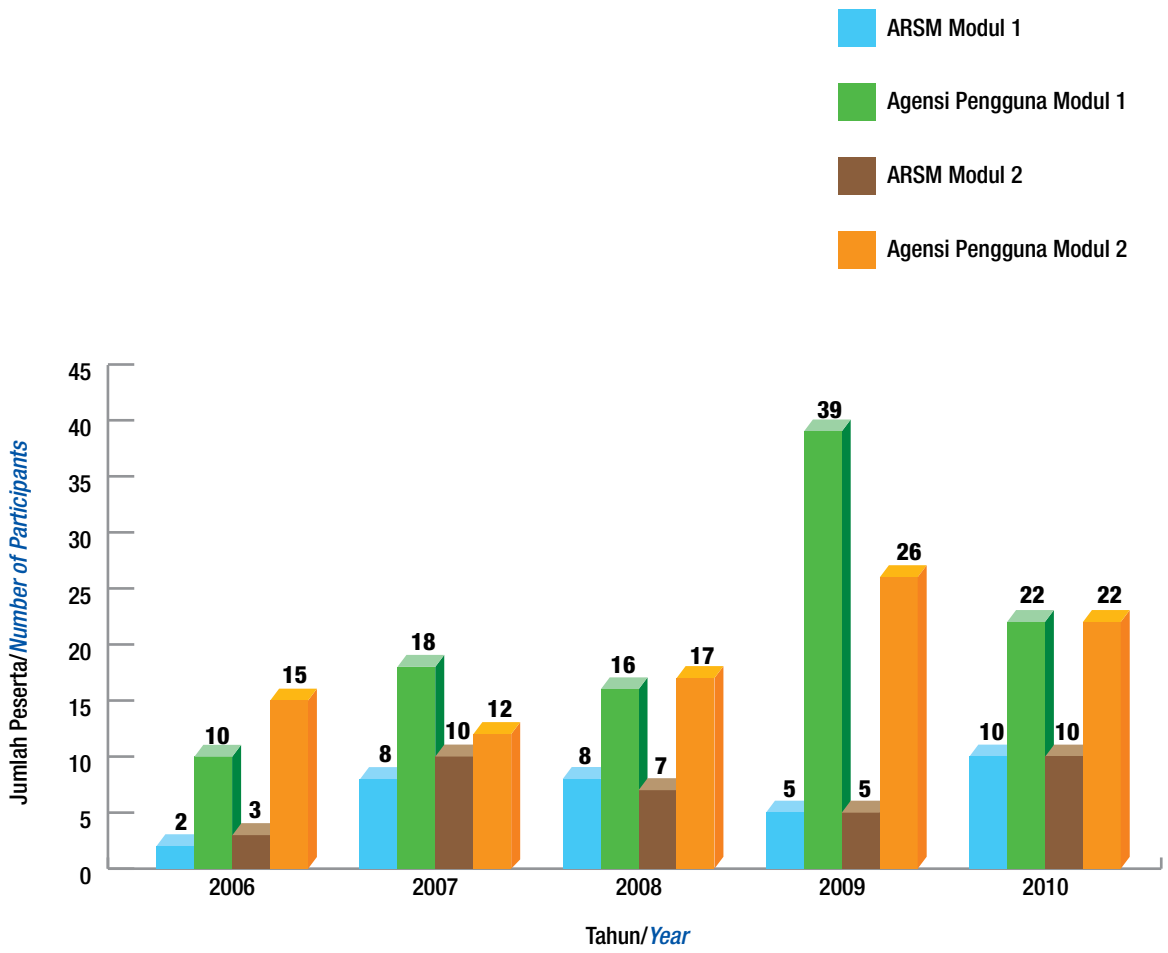


Jumlah data satelit SPOT yang dipohon oleh agensi pengguna
Number of SPOT satellite data requested by user agencies



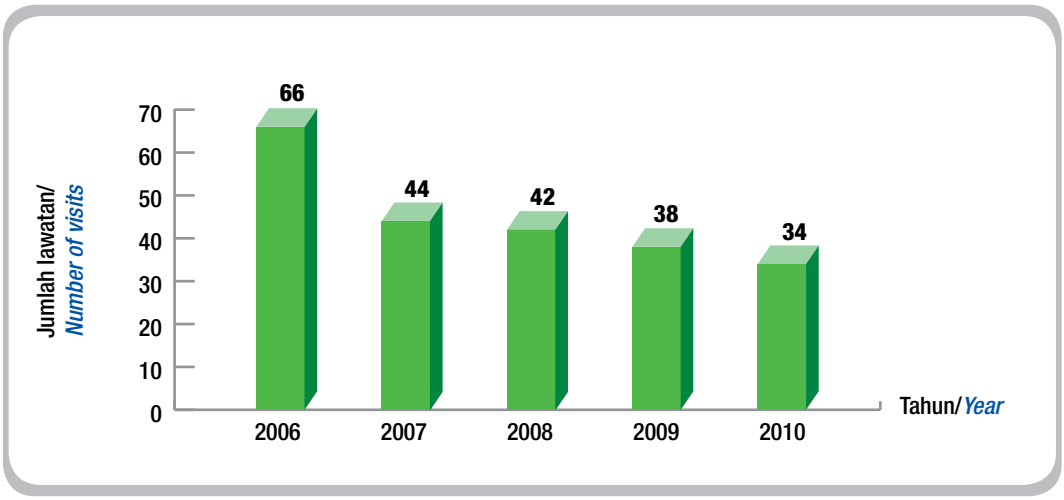
Jumlah data satelit MODIS, OCM & NOAA yang dipohon oleh sektor kerajaan
Number of MODIS, OCM & NOAA satellites data requested by government sector

Kursus Remote Sensing
Remote Sensing Course

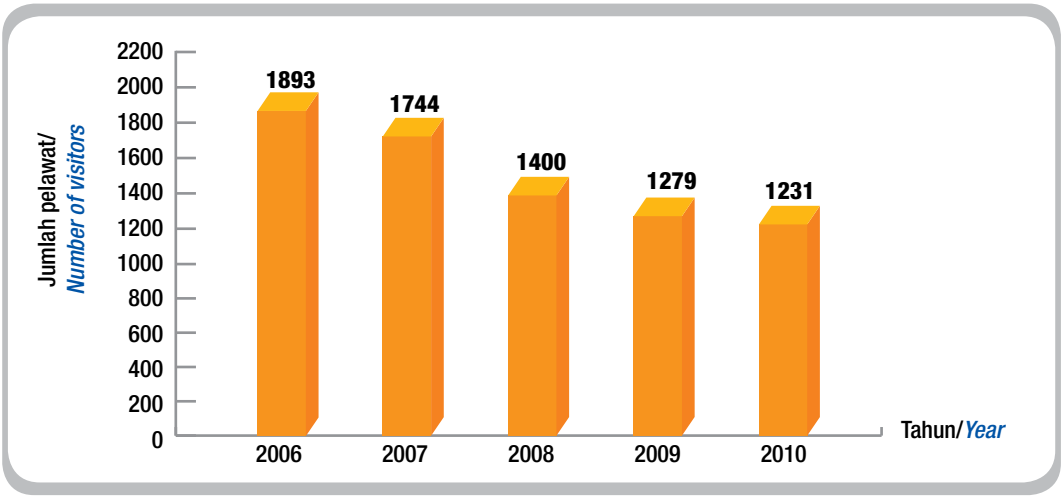


Jumlah peserta Kursus Remote Sensing (Modul 1 dan 2)
Number of Remote Sensing Course Participants (Module 1 and 2)

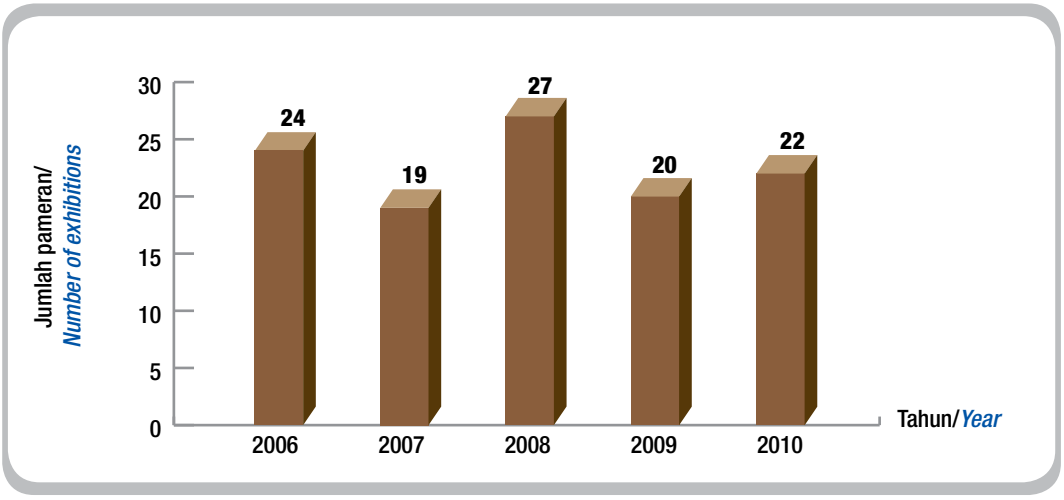
Aktiviti Promosi Teknologi
Technology Promotion Activities



Jumlah lawatan
Number of visits



Jumlah pelawat
Number of visitors



Jumlah pameran
Number of exhibitions

SOROTAN PERISTIWA
HIGHLIGHT OF EVENTS

Perhimpunan Bulanan
Monthly Gathering

Perhimpunan Bulanan ARSM pada 9 Ogos 2010
ARSM Monthly Gathering on 9 August 2010

Majlis Bersama Jabatan
Joint Department Council

Pemilihan perwakilan pada 16 Mac 2010
Election of delegates held on 16 March 2010

Ahli Majlis Bersama Jabatan yang baru dilantik untuk sesi 2010/2011
Newly appointed delegates of Joint Department Council for 2010/2011 session

Hari Kualiti dan Penyampaian Anugerah Perkhidmatan Cemerlang MOSTI 2010
2010 MOSTI Quality Day and Excellent Service Awards Presentation

Penerima Anugerah Perkhidmatan Cemerlang MOSTI di Taman Teknologi Malaysia pada 29 Jun 2010
MOSTI Excellent Service Awards Recipients at Technology Park Malaysia on 29 June 2010

Penerima Anugerah Perkhidmatan Cemerlang ARSM 2010
2010 ARSM Excellent Service Awards Recipients

En. Mohd Fazuwan bin Ahmad Fauzi

Pn. Norafiza Saleha binti Sahlan

En. Mohd Hakimi bin Abdul Rahman

Pn. Noor Lydia binti Ahmad

En. Zulkifli bin Hj. Alias

Pn. Zainor binti Omar

Cik Lailatul Hajariah binti Ahmad Rosli

En. Abdullah bin Bakar

En. Mohd Fadzli bin Abdul Rahman

Cik Norwani binti Che Mohd Nor

Pn. Nur Hidayah binti Abu Bakar

En. Abd Kahar bin Abd Rahim

Cik Memi Hayani binti Abd Taharin

Aktiviti Pembangunan Modal Insan
Human Capital Development Activities

Prof. Arthur Philip Cracknell sedang menyampaikan ceramah teknikal bertajuk *Sensor Calibration and Data Handling* pada 11 Feb 2010
Prof. Arthur Philip Cracknell is delivering his technical talk entitled Sensor Calibration and Data Handling on 11 Feb 2010

Peserta ceramah teknikal
Participants attending the technical talk

Pembentangan teknikal bertajuk *Technical Potential and the Use of RADARSAT-2 Satellite Data* oleh Dr. William Jefferies, MDA, Canada pada 1 November 2010
Technical presentation entitled Technical Potential and the Use of RADARSAT-2 Satellite Data by Dr. William Jefferies, MDA, Canada on 1 November 2010

Minggu orientasi ARSM pada 12 Februari 2010
ARSM orientation week on 12 February 2010

Kontinjen ARSM semasa perarakan Maulidur Rasul di Putrajaya pada 26 Februari 2010
ARSM contingent during Maulidur Rasul parade on 26 February 2010 in Putrajaya

Peserta Bengkel TerraSAR-X pada 25 Mac 2010
TerraSAR-X Workshop participants on 25 Mac 2010

Majlis penutup dan penyampaian sijil kursus perisian Ecognition pada 15 April 2010
Closing ceremony and certificate presentation for Ecognition course on 15 April 2010

Peserta kursus perisian Erdas Imagine pada 17 Disember 2010
Participants of Erdas Imagine software course on 17 December 2010

Lawatan
Visit

Lawatan pelajar Kolej Pusat Teknologi dan Pengurusan Lanjutan (PTPL), Seremban, Negeri Sembilan pada 5 Januari 2010
Visit by students from PTPL College, Seremban, Negeri Sembilan on 5 January 2010

Lawatan pegawai Meteorologi Mesir pada 19 Januari 2010
Visit by Egyptian Meteorology officers on 19 January 2010

Lawatan Pusat Peperangan Elektronik ATM, Sungai Buloh, Selangor pada 22 Januari 2010
Visit by ATM Electronic Warefare Centre, Sungai Buloh, Selangor on 22 January 2010

Lawatan pelajar Universiti Malaysia Terengganu (UMT) pada 22 Januari 2010
Visit by students from Universiti Malaysia Terengganu (UMT) on 22 January 2010

Lawatan ahli Institut Juruukur Malaysia pada 27 Januari 2010
Visit by members of Institution of Surveyors Malaysia on 27 January 2010

Lawatan pelajar Sekolah Menengah Kebangsaan Mengkarak, Pahang pada 23 Mac 2010
Visit by students from Sekolah Menengah Kebangsaan Mengkarak, Pahang on 23 Mac 2010

Lawatan pelajar Geomatik Universiti Teknologi MARA (UiTM), Shah Alam, Selangor pada 24 Mac 2010
Visit by Geomatic students from Universiti Teknologi MARA, Shah Alam, Selangor on 24 Mac 2010

Lawatan pelajar Universiti Teknologi MARA (UiTM), Perlis pada 25 Mac 2010
Visit by students from Universiti Teknologi MARA (UiTM), Perlis on 25 Mac 2010

Lawatan KD Pelandok, Tentera Laut Diraja Malaysia (TLDM) pada 6 Mei 2010
Visit by KD Pelandok, Royal Malaysian Navy (TLDM) on 6 Mei 2010

Lawatan Kor Agama Angkatan Tentera Malaysia (KAGAT), Port Dickson pada 20 Mei 2010
Visit by Armed Forces Religious Corps (KAGAT), Port Dickson on 20 Mei 2010

Taklimat kepada peserta Bengkel Penilaian Impak Alam Sekitar (EIA) anjuran INTAN, Bukit Kiara pada 2 Ogos 2010
Briefing to participants of Environmental Impact Assessment (EIA) Workshop organised by INTAN, Bukit Kiara on 2 August 2010

Lawatan pegawai-pegawai Kementerian Kewangan Malaysia pada 22 Jun 2010
Visit by officers from Ministry of Finance Malaysia on 22 June 2010

Lawatan pelajar Kolej SAITO pada 10 Ogos 2010
Visit by students of SAITO College on 10 August 2010

Lawatan Jabatan Perancang Bandar dan Desa Melaka pada 3 September 2010
Visit by Department of Urban and Country Planning on 3 September 2010

Lawatan Pengusaha Vesel dan Ahli Persatuan Nelayan Perairan Pantai Timur Semenanjung Malaysia ke ARSM pada 26 November 2010
Visit to ARSM by Vessel Owners and Members of Peninsular Malaysia East Coast Fishermen Association on 26 November 2010

Lawatan oleh Pusat Remote Sensing Viet Nam pada 1 Disember 2010
Visit by Viet Nam Centre for Remote Sensing on 1 December 2010

Lawatan oleh Jabatan Perhutanan Sabah pada 3 Disember 2010
Visit by Sabah Forestry Department on 3 December 2010

Lawatan pelajar Universiti Teknologi Malaysia (UTM), Skudai, Johor pada 13 Disember 2010
Visit by students from Universiti Teknologi Malaysia (UTM), Skudai, Johor on 13 December 2010

Lawatan Pusat Penyelidikan Tenaga Nasional Berhad (TNB Research) pada 21 Disember 2010
Visit to ARSM by Research Centre of Tenaga Nasional Berhad (TNB Research) on 21 December 2010

Aktiviti Kelab Sukan dan Sosial ARSM
ARSM Sport and Social Club Activities

Peristiwa semasa Mesyuarat Agong ke-14 Kelab Sukan dan Sosial pada 16 Mac 2010
Events during Sport and Social Club Annual General Meeting on 16 Mac 2010

Ceramah Agama
Religious Talk

Ceramah Agama 'Hadis 40' oleh Ustaz Mohamad bin Yusuf pada 1 April 2010
Religious Talk on 'Hadis 40' by Ustaz Mohamad bin Yusuf on 1 April 2010

Ceramah Agama oleh Ustazah Norhafizah binti Musa dari Universiti Teknologi Malaysia (UTM) pada 29 Julai 2010
Religious Talk by Ustazah Norhafizah binti Musa from Universiti Teknologi Malaysia (UTM) on 29 July 2010

Ceramah Agama oleh Ustaz Abd. Fatah bin Yusuf dari Jabatan Agama Islam Wilayah Persekutuan (JAWI) pada 25 Ogos 2010
Religious Talk by Ustaz Abd. Fatah bin Yusuf from Jabatan Agama Islam Wilayah Persekutuan (JAWI) on 25 August 2010

PUSPANITA

Peristiwa bergambar sekitar Mesyuarat Agong PUSPANITA ARSM pada 2 April 2010
Events during ARSM PUSPANITA Annual General Meeting on 2 April 2010

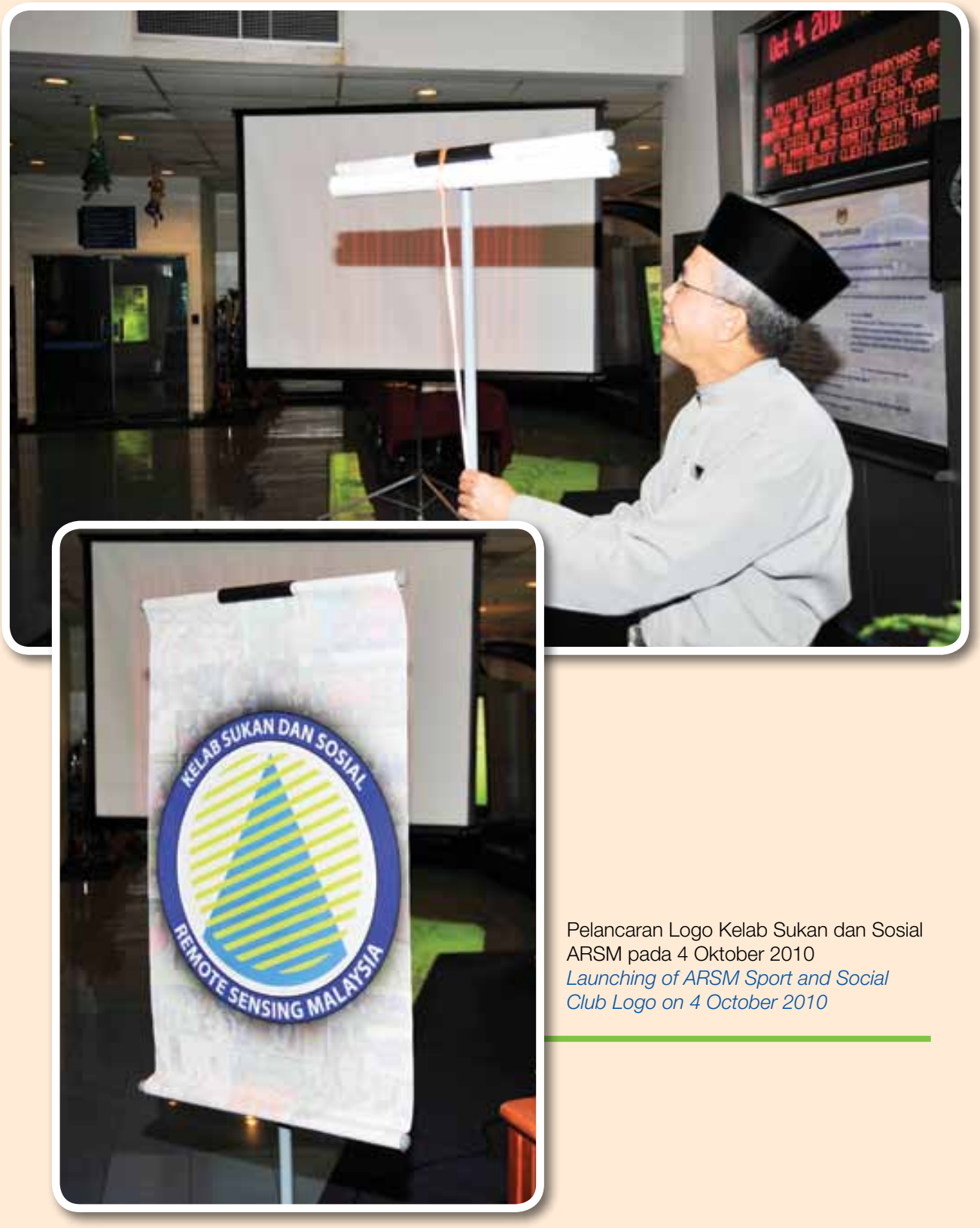
AJK PUSPANITA ARSM
ARSM PUSPANITA Committee Members

Sambutan Hari Raya Aidil Fitri
Hari Raya Aidil Fitri Celebration

Kakitangan ARSM semasa sambutan Hari Raya Aidil Fitri pada 4 Oktober 2010
Staff of ARSM during Hari Raya Aidil Fitri celebration on 4 October 2010

Rakaman peristiwa di majlis sambutan Hari Raya Aidil Fitri pada 4 Oktober 2010
Events during Hari Raya Aidil Fitri celebration on 4 October 2010

Pelancaran logo Kelab Sukan dan Sosial ARSM semasa Sambutan Hari Raya Aidil Fitri pada 4 Oktober 2010
Launching of ARSM Sport and Social Club logo during Hari Raya Aidil Fitri Celebration on 4 October 2010



Pelancaran Logo Kelab Sukan dan Sosial ARSM pada 4 Oktober 2010
Launching of ARSM Sport and Social Club Logo on 4 October 2010

Sambutan Hari Keluarga 'Percutian 1ARSM' di Port Dickson pada 7 November 2010

'Percutian 1ARSM' Family Day Celebration at Port Dickson on 7 November 2010


TAHUN 2010
"PERCUTIAN 1ARSM"


AT DATANG


Hari Keluarga
TAHUN 2010


TAHUN

AGENSI REMOTE SENSING MALAYSIA (ARSM)
Kementerian Sains, Teknologi dan Inovasi

MALAYSIAN REMOTE SENSING AGENCY
Ministry of Science, Technology and Innovation (MOSTI)

No. 13, Jalan Tun Ismail, 50480 Kuala Lumpur
Tel: 03-2697 3400, Faks: 03-2697 3350
Email: rs@remotesensing.gov.my
Laman Web : www.remotesensing.gov.my

ISSN 1511-1792

Cetakan oleh
Gemilang Press Sdn Bhd
03-6142 2285

Agensi Remote Sensing Malaysia (ARSM) *Malaysian Remote Sensing Agency*

Laporan Tahunan
Annual Report
2010

Laporan Tahunan 2010 *Annual Report 2010*

Agensi Remote Sensing Malaysia (ARSM)
Malaysian Remote Sensing Agency