THAILAND Progress Report

Ministry of Information and Communication Technology

2006 Country Progress Report : THAILAND

SECTION I - GENERAL CONDITION UPDATE

1.1 ICT Infrastructure Development

1.1.1 Telecommunication Infrastructure Development

1.1.1.1 Government Nervous System and e-Government Service

The Royal Thai Government gives one of the highest priorities to improving the service for citizens. Applications of the information and communication technologies enable government to effectively manage information in the “back offices” and efficiently deliver services through the “front offices”. This can be achieved by using the concept of Government Nervous System (GNS) and the electronic Government (e-Government) together.

Government Nervous System and e-government Service Project are under the Modernize Thailand Project, which focuses on development of Thailand into a modern, competitive, knowledge-based economy.

1.1.1.2 Increasing Telecommunication Network Capability via the IPSTAR Satellite Communication Network

IPSTAR is the fourth Thai nationality satellite under a Thai name, Thaicom-4. Invented and developed by Thais, the satellite was launched in August 2005 from the Guiana Space Center, South America’s Guru French Guiana Province. This patent-registered satellite is known as “The world largest broadband satellite”. It will cover countries through out the Asia-Pacific-Rim with 5 millions users expected in 2008.

The goal of this project is to increase Thailand’s telecommunication network capacity in order to support the demand for long distance public telephone services in remote areas as well as broadband Internet and multimedia services throughout the country. The target markets for this service include Universal Service Obligation (USO) areas, and telecommunications and multimedia service providers.

By using IP-based services, the use of this satellite allow reasonable price services to be distributed in inaccessible/remote areas. Services of this satellite are currently available.

1.1.1.3 Developing Communication Network Service for Suvarnabhumi International Airport

As the world largest single-terminal airport, the Suvarnabhumi International Airport is expected to be one of the hubs of Asia when completed.

A telecommunications network and services for the airport have been designed and developed to support government agencies, airlines, and other organizations in the new airport. The sophisticated yet powerful communication network has been designed to cope with 45 millions passengers per year expected to travel through this airport.

1.1.1.4 Implementing Communication Network Service for Underground Railway

Wireless communication services in the office, stations and tunnels of the underground railway system of the Mass Rapid Transit Authority of Thailand (MRTA) has been implemented to provide a modern data communications service to the first underground railway project in Thailand.

1.1.1.5 Greater Meakong Subregion (GMS) Project

The project has been organized and implemented cooperatively by the six member countries, which include Cambodia, Laos, Myanmar, Vietnam, Thailand, and Yunnan and Guangxi provinces of the People's Republic of China, aiming to put into place a regional high-capacity backbone network of at least 2.5 Gbps connecting GMS countries by laying over 4,900 km of newly constructed optical fiber cables. Upon completion of the project, it will allow users to have basic telecommunication services such as high-quality voice, data and Internet. Several applications such as e-government, e-commerce, e-learning, e-health shall also be provided. These services and applications not only enhance people's quality of life, but also further boost economic development, trade exchange and cultural communications among the six countries.

The construction of the GMS-ISN (Greater Meakong Subregion - Information Superhighway Network) infrastructure will be carried out in two phases. The first phase will focus on the end-to-end route and system by employing point-to-point network architecture with some parts of the network using SDH 2.5 Gbps systems. The second step will focus on ring network architecture by building three SDH 2.5 Gbps self-healing rings. The two phases of the project are expected to be ready for service by the end of 2008 and 2010, respectively.

1.1.1.6 Upgrading 470 MHz Mobile Phone Network

To enable the 470 MHz mobile phone network to support the school Internet Service, the 470 MHz mobile phone system has been upgraded to a CDMA 2000-1X system having 585 base stations nationwide with a capability to support 150,000 telephone numbers. The project involves upgrading the 470 MHz System to CDMA 2000-1X together with installing

equipments for providing fixed-wireless telephone and Internet services outside PSTN coverage.

1.1.1.7 1900 MHz Mobile Phone Project

3G service is being developed in Thailand. The technology supports various services and allowing multimedia services to connect with other communication devices. This results in ultimate free-style communications, such as receiving and making calls at the same time, video phone, video mail, video streaming, and interactive gaming.

1.1.1.8 Regional CDMA Network Upgrading Project

In 2005, the 800 MHz CDMA system in the regional areas had been upgraded from IS 95 to CDMA 2000 1x and CDMA 2000 1x EVDO to cover the remaining 51 provinces of Thailand. The installation of approximately 800 base stations was completed over the year 2005. It is expected that 1,600 base stations in total will be installed and ready for service by the end of 2006.

The CDMA 2000 1x and CDMA 2000 1x EVDO are capable of providing wireless data solutions with transmission speed of up to 2.4 Mbps.

Source : IDC Thailand, 2006

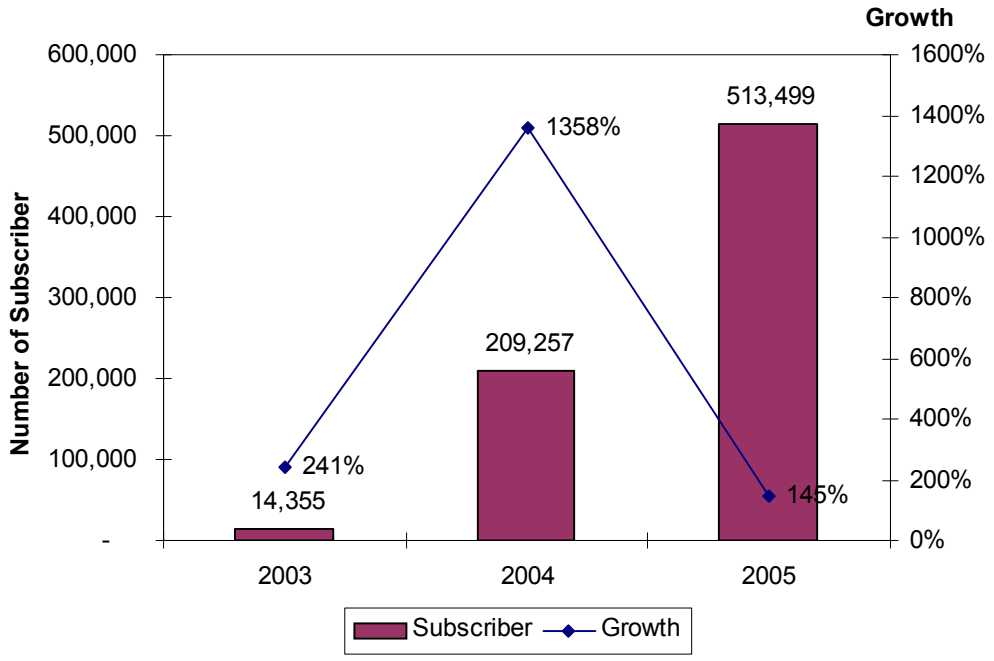

Figure 1 : Broadband Subscribers 2003- 2005

1.1.1.9 Broadband IP Network Expansion Project

The local broadband market in the 2005 was very dynamic due to stronger demand by residential users to migrate from dial-up to ADSL. High broadband service pricing used to be the major constraining issue for ADSL growth, but the situation changed after the Government issued their broadband directive and began introducing significantly cheaper packages to attract residential users. The ICT Ministry used TOT Corp., and CAT Telecom to commence this new low-cost broadband policy, and later market leader, TRUE, was forced to move to offer broadband subscriptions at only Baht 590 per month. In the end, this move helped cement the operator's position at the top of the market, with a subscriber share of over 70% in the first half of 2005.

The falling prices quoted for ADSL routers and modems also stimulated demand from general users, since these price decreases for required items lowered the barrier to entry for broadband in terms of overall investment costs.

While ADSL gained significantly in popularity in the market, demand for Dial-up services was sustained since ISPs also re-positioned Dial-up more competitively by using revised promotional campaigns.

From Figure 1, it shows the number of broadband subscribers from 2003 to 2005, During 2004, there is an initiative ideas from MICT to expand the number of broadband user to reach 1 million ports for the end of 2006. Besides, there was a decline in broadband price that the household could subscribe this service at home.

Company size	% Used of Internet Service	Average Employees Access Internet (person)
1 - 15 employees	48.2%	2.3
16 - 25 employees	62.3%	5
26 - 30 employees	69.1%	6.4
31 - 50 employees	74.0%	10.6
51 - 200 employees	82.6%	12.7
more than 200 employees	92.8%	50.3

Source : Report on the 2005 Survey on Information and Communication Technology, NSO

Table 1: Average Internet Service Usage and Employees Access Internet by Company Size in 2005

According to the survey of NSO as shown in Table 1, about 60% of household used more prepaid Internet access service. Besides, the purposes of access Internet mainly used for information retrieval and email. Besides, some businesses access the website to view the product catalog or using Internet to be a tool to support business operations.

This IP network expansion project will expand the core business network nationwide by 2007 in order to support the provision of bandwidth on demand service to wireless and wireline customers. Connection can be made through a system of convergence of technology and services to ensure that the network can support voice, data and multimedia services on the same network.

1.1.1.10 Next Generation Network (NGN) Project

The NGN focuses on providing both domestic and international telephone as well as data communications services as follows:

- Basic Telephony Service
- IP Centrex Service
- Phone to Phone and PC to Phone Service
- Click to Call Service
- Multimedia Conferencing Service
- External Blacklist & White list System
- Unified Communication System

The services are expected to be launched in the first quarter of 2007.

1.1.1.11 Upgrading Internet Protocol from IPv4 to IPv6

Thailand plans to upgrade current network infrastructure to support the new Internet Protocol in order to move towards the next generation of infrastructure. The entire nationwide network will be upgraded to support IPv6 by 2014. The next generation of Internet protocol is designed not only to extend the address space to cope with the growth in Internet use, but also to take advantage of new enhance features provided by IPv6.

1.1.2 Information Infrastructure Development

1.1.2.1 Government Data Integration/Interchange Standards

In order to provide efficient and effective e-Services to the citizens throughout the country, the government concentrates on the integration of several useful technologies to ensure that e-Services are fast, reliable and ubiquitous. To fulfill the goal, the followings are being implemented.

- **e-GMS (e-Government Meta Data Standard):** The government is now developing a meta standard for the data to be used by all government agencies.
- **Stat XML:** This is to define a standard and description as well as the information structure of all services provided by the government.
- **Digital Signature:** To make sure that all e-Services are secure and trustable, the government is now using digital signature technology as a tool to authenticate the person and activities. In the pilot project, government officers are encourages to use this technology for sending and receiving email. This make them realize and aware of the important of the technology.
- **Web Services:** All e-Services to be provided by the government shall be web-based services. This allows both government agencies to share information and citizens to have ubiquitous access to these e-Services.
- **GDI Center (Government Data Integration Center):** The government is now establishing Universal Description, Directory and Integration (UDDI) in order to register all government services. The implementation of UDDI allows government agencies could have convenient access to the services provided.
- **e-TGIF (e-Thai Government Interoperability Framework):** Ministry of ICT is now preparing Interoperability Framework as a standard for information linkage and interoperability so that all government agencies shall deploy the same standard to exchange information among agencies.
- **Smart Card:** To provide seamless e-Services, all citizens smart ID card as authenticated key to access all e-Services provided by the government.

1.1.2.2 National Information Center

National Statistic Office (NSO) is assigned to operate the national information center that has responsibility to manage information and integration in national and provincial level data from both government and private agencies support government in decide and direct the policy in short, medium and long term including support private agencies using the information for planning efficiently. The tasks also include data integration by concluding and analyzing data from different sources both government and private agencies, and data directory together with META data collection for addressing of actual data.

1.2 Liberalization, Policy and Regulation

1.2.1 National Telecommunications Policy

In 2005, the telecommunication government policy declared in the parliament was to advance sufficient telecommunications and services extensively with reasonable price. In addition, the services must be able to support economic growth, electronic commerce, knowledge transfer, and managing of the country.

1.2.2 Universal Service Obligations (USO)

With regard to providing telecommunication services in rural areas, the USO project aims, based on installation of advanced technologies, at data gathering on technical and social factors to enable the formulation of rules and provisions which will be applied to remote rural villages throughout Thailand within 2009. At the beginning, the use of telephone services will be free of charge for emergency cases. Other services will be at the affordable charges through public telephone in the future.

1.2.3 Consumer Protection

To promote policy on Consumer Protection, two important issues have recently been approved. The first issue is the procedures for receiving petition from consumers including dispute resolution regarding telecommunication services between consumers and licensees. The second relates to protection of consumers' rights regarding personal information and freedom to communicate by telecommunication means. Both issues were published in the Royal Gazette in April 2006.

1.2.4 Telecommunication Licensing

As of December 31, 2005, the NTC granted Internet license to altogether twenty three ISPs. In term of telecommunications licensing, NTC has granted six telecommunications operating licenses. This includes Type I and Type III to TOT Public Company Limited and CAT Telecom Public Company Limited, the incumbent telecommunications operators, under the Telecommunications Business Act.

1.2.5 International Internet Gateway and National Internet Exchange Licensing

The Internet infrastructure in Thailand consists of an International Internet Gateway (IIG), which distributes data between the domestic Internet network in Thailand and the international Internet network, and a National Internet Exchange (NIX), which facilitates Internet data exchange among the 19 domestic ISPs by connecting their networks to one another. Seven main nodes of major cities in six regions and distribution nodes of every province are connected to the IIG and NIX. The NTC is responsible for licensing a limited number of IIG and NIX providers.

1.2.6 Competition on Market-Base

The Telecommunications Master Plan 2005-2007 was announced and published in the Royal Gazette on August 2, 2005. The essence of Telecommunications Master Plan is to frame regulatory guidelines and telecommunication developments in several aspects: to

regulate telecommunication services under free and fair basis, to manage telecommunication resources, to provide universal services obligations and consumer protection, to promote industry development, to promote education, religion, culture, public benefits and participation, to promote non-commercial telecommunications services, and to provide disaster and emergency preparedness.

Besides, the NTC is drafting Competition Code which is aimed at regulating the market players and preventing cross-subsidizing business in the same group. The details of Competition Code cover clauses 13 and 14 of Section 51 of the Act on the Organization to Assign Radio-Frequency Spectrum and to Regulate Broadcasting and Telecommunication Services B.E. 2543 (2000) and Section 21 of Telecommunications Business Act B.E. 2544 (2001). The Competition Code is expected to be published in the Royal Gazette in the third quarter of the year 2006. The Code would apply only to NTC licensees.

1.2.7 APEC TEL Mutual Recognition Arrangement (MRA): Progress and Readiness

Thailand has made progress on preparatory work for the implementation of MRA. Several key preparations are as follows:

(a) Eight Telecommunication Technical Standards covering radio communication equipment are currently in force. It is expected that more technical standards will subsequently be prescribed by Telecommunication Standard Committee and its sub-committees, under the supervision of the Commission;
(b) Current regulations on conformity assessment procedures for telecommunication equipment are under review, to simplify the telecommunication equipment authorization and approval framework;
(c) Regulations on criteria and procedures for designation of local testing laboratories, and recognition of foreign testing laboratories, as CABs, are under finalization;
(d) Thailand should be able to implement Phase I of the APEC TEL MRA once these issues, regulations, and consultation have been finalized and put into practice;

Thailand welcomes dialogue with potential partner for information exchange with a view to entering into formal bilateral consultation based on the principle of mutual benefit and reciprocity.

1.2.8 Electronic Transactions Act B.E. 2544

The Electronic Transactions Act (ETA) of Thailand was enacted in December 2001 to recognize the legal validity of electronic records and electronic signatures. With the advance in communication technologies, electronic transactions employing such technologies are deemed to be vastly different from the traditional non-electronic counterparts which are

governed by existing laws. Hence, there is a clear need for a new set of laws of which the ETA is serving as the parental law. Pursuant to the ETA, Thailand recently initiated the subordinated laws under ETA, e.g. e-activities which will be excluded from ETA, e-Transactions in the Public Sector including the draft of information security guidelines based on ISO 17799. In addition, the Electronic Transactions Commission has been set up to lay down policies and prescribe rules to promote electronic transactions to monitor the business operation concerning electronic transactions.

1.2.9 National ICT Security Master Plan

Thailand by Ministry of Information and Communication Technology (MICT) is in a process of developing the National ICT Security Master Plan which follows 2 international standards, ISO 17799 and ISO 27001. The master plan will be used as a standard framework and guideline to implement and promote security environment and awareness to both government and business users.

1.2.10 E-Procurement Law

In 2006, the cabinet has agreed to enforce all government agencies and public enterprise to deploy the e-Procurement system. The law also includes updating of all related laws and regulations, if required. This regulation was enacted on February 1, 2006 to any procurement which has value more than 2 million Baht, except consultant, designing and construction supervision.

SECTION II – EDIFACT/eBXML/XML Based STANDARDS DEVELOPMENT

2.1 Thailand EDI Council (TEDIC)

Thailand EDI Council (TEDIC) is one of subcommittees under the National Information Technology Committee (NITC), with the following mandates.

- Establish policy and objectives on EDI for the country.
- Set up working groups to develop EDI, support EDI utilization, develop message standards, study and recommend EDI-related legal framework.
- Facilitate and monitor the operations of the working groups and other relevant agencies on EDI to follow the government policy and objectives.
- Manage the establishment of the national EDI service provider according to the government's direction.

- Represent Thailand in coordinating and consulting with other nations in international EDI development.
- Carry out other EDI-related activities.
- Carry on work, study results and development plan from the former subcommittee on EDI.

Based on the composition of the former subcommittee on EDI, TEDIC includes a number of new committee members representing strategic operations such as chairman of each affiliated working group, managing director of the national EDI service provider, and representatives from public agencies. Under the chairmanship of the Customs Director General, TEDIC composes of representatives from:

- Ministry of Commerce,
- Ministry of Transport and Communications,
- Board of Investment (BOI),
- Customs Department,
- Comptroller-General's Department,
- Revenue Department,
- Department of Foreign Trade,
- Department of Export Promotion (THAIPRO),
- Insurance Department,
- Department of Economic Affairs,
- Thai Airways International (THAI),
- Port Authority of Thailand (PAT),
- Telephone Organization of Thailand (TOT),
- Communications Authority of Thailand (CAT),
- Federation of Thai Industries (FTI),
- Federation of Thai Chamber of Commerce,
- Thai Banking Association,
- NECTEC (as secretariat)

Under TEDIC, there are three functional groups of people working together, namely Service & Support Group (SSG), Messages Development Group (MDG), and Legal Working Group (LWG). SSG is a working group responsible for promoting awareness and education both in public and user communities, as well as preparing all necessary standards and materials for them. Each of the four MDGs have been planned under TEDIC to look after its industrial sector's electronic messages development. These MDGs will work jointly with TISI (Thai Industrial Standard Institute) technical committee and MOTC (Ministry of Transport and Communications) EDI Subcommittee on Multi-modal Transport. In addition, the LWG has a mission to help matured users to cope with legal problems. That is to seek for interim solutions while related laws have to be reformed e.g. to prepare a standard agreement for trading partner, etc. The LWG is expected to work closely with the NITC subcommittee on IT Legal

Infrastructure.

2.2 National Standardized Data Set Development

Ministry of Information and Communication Technology (MICT) is in a process of developing the National Standardized Data Set supporting the Integrated Single-Window E-Logistics project, which will be commenced in 2006. This project will set XML Data Set Standards for exchanging information among government agencies. The project will last for 8 months starting from June 2006.

SECTION III – eBusiness/eCommerce Related PROJECT UPDATES

3.1 National Root/Bridge CA

Presently there have been more than 6 certified CA service providers in Thailand, but most of them can not be efficiently interoperated. In order for these certified service providers to link together and work as well as operate as if they were a single entity, a national root/bridge CA is being studied. The outcome of this project will allow faster and more secure services for all e-Services users, especially in financial-related electronic transactions.

3.2 Government Financial Management Information System (GFMIS)

Thai government developed and has exploited the Government Financial Management Information System (GFMIS) as a tool to increase the efficiency of government financial management. Moreover, the GFMIS provides the information to support the financial policy decision making and adjustment of national economy direction. GFMIS has been perfectly designed for Thai government finance and budget management to cope with national revenue, expenditure, loan, accounting system, procurement and budget monitoring efficiently and effectively. All government agencies have been using the GFMIS since 1st October 2004.

3.3 Citizen Identification Smart Card

History of Thailand citizen ID cards started more than half of a century ago. The evolution of the country's citizen ID cards started from using papers, then replaced by plastic, and plastic with magnetic tape, till the latest version which are produced by using smart card with IC chip. Each of the cards is equipped with a unique number. For each Thai citizen, this unchangeable number is assigned to him/her since he/she was born.

The smart cards have first distributed to the citizens on October 2005. The citizen ID smart card is not only used to identify people, but also is used as an authorization card for government e-Services.

3.4 e-Revenue

The revenue department developed the e-Revenue system to provide the online tax payment services as well as to provide useful tax information and printing service for instance. The e-Revenue provides convenient services to tax payer and reduces the compliance cost.

The national strategy framework in 2003 is the adjustment of country structure to increase the competitive ability and adjustment of modern management policy. The government emphasized on the developing the revenue department to become e-Revenue to increase the efficiency of management and to provide online services to tax payer.

3.5 e-Procurement System

The e-Procurement system includes e-Auction, e-Tendering and e-Catalogue. The project is separated into 2 phases. For the first phase, in 2004, the cabinet resolution stated that all government agencies should consider using the e-Auction for their procurement processes. Moreover, the procurement related regulations have been reformed, so that the regulation could be used widely, transparently, and to enable fair competition.

In 2006, for the second phase, the Ministry of Finance issues the electronic auction regulation which forces the biding process to function through electronic system within the specific time by using the sealed bid e-Auction.

3.6 The Rationale of Assets Capitalization

One of the main drivers of the Assets Capitalization policy is the recognition that a sizeable stock of assets, particularly those held by the lower income and the poverty-stricken group, cannot be capitalized. The combination of constraints ranging from the questionable legitimacy of claims, the risk factors, the higher costs for administering loan to large number of loan applicants have resulted in differential costs capital for the marginalized social and economic thereby placing them in even more disadvantaged positions. Moreover, the fact the such assets cannot br used to access to capital, amounts to ability to maximize the potential economic rent.

The launching of this policy is based on two basic assumptions. Firstly, while the poor do have assets, there are currently limited operational channels for the poor to access to capital. Secondly, creating access to capital can be a modality for unleashing the productive capacity of the poor thereby helping them to escape the poverty trap.

The intervention is to create that access to capital through formalizing lesser forms of property rights used by the marginalized economic group in the rural sector as well as their urban poor counterparts in the so-called informal sector economy. A precondition for bridging these small and informal economics to the capital markets will be the registration of those assets as a step towards creating values from them.

The organization set up for implementing this policy, according to the Regulation of the Office of the Prime Minister of April 22, 2003, comprises 2 Committees. The first is the Assets Capitalization Policy Committee chaired by the Prime Minister. The Secretary of the Prime Minister and the Director of the Assets Capitalization Bureau are Secretary and Assistant Secretary to the Committee. The second Committee, the Assets Capitalization Operation Committee, the Chairman is appointed by the Prime Minister with the Director of the Assets Capitalization Bureau (ACB) as Secretary. The Operation itself is executed by the Assets Capitalization Bureau, an office set up within the ffice of the Prime Minister on a temporary basis. Subsequently, a Royal Decree publicly announced on June 2, 2003 officially endorsed the status of the Assets Capitalization Bureau as a Public Organization.

The types of assets covered by the policy are land and property, leasing and hire-purchasing contracts, permission to utilize public lands and other licenses or permits, intellectual property, and machines.

3.7 Open Source Software

Thailand by Software Industry Promotion Agency (SIPA) is undertaking a number of projects designed to promote the use of open source. The Chantra project aims to introduce users to open source by providing a CD containing Open source applications for windows. Over 40,000 CDs have already been distributed. Almost all the included applications are also available on Linux: Chantra thus also allows users to migrate to Linux in two phases. In the first phase, it allows end users to migrate to open source applications while using Windows as the operating system. In the second phase, the end users migrate from Windows operating system to Linux.

Perhaps the most important application included in Chantra is the OpenOffice suite. SIPA has been supporting work on the Thai Localization of OpenOffice. A key goal is to ensure that the needed changes are integrated into the standard version of OpenOffice which provides all features needed for Thais.

SIPA is also creating a national mirror site which will provide a central site in Thailand for Downloading open source software. This will provide a more reliable and faster mechanism for users in Thailand to download open source software, and reduce the use of expensive international bandwidth.

For promoting public use of open source, SIPA has focused on open source content

management systems particularly in Mambo. As compared to the previous generation of Web Creation solutions based on proprietary HTML editors, Mambo provides many technical advantages allowing non-technical end-users to update the content of their Web sites directly. Mambo also benefits from a strong existing Thai user community and good Thai localization. Combined with the cost advantages inherent in open source, this makes a Mambo an attractive choice to a broad range of government units.

Lack of high-quality Thai fonts is one of the main barriers to the client-side use of the Linux and other open source operating systems in Thailand. SIPA has therefore devoted resources to producing high –quality open source fonts that support the Thai script. In particular, SIPA has sponsored the design of the Thai glyphs for the Bitstream Vera Family Fonts, which are probably the leading open source fonts for Western scripts. These Thai glyphs will be incorporated into a new release of Bitstream Vera.