

## **MyGDI Products and Services**

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## **Abstract**

*Malaysian Geospatial Data Infrastructure (MyGDI) has emerge as an important single data access to geospatial information in catering the economic growth, environmental quality and stability as well as social development. This information infrastructure was designed to provide a data explorer to geospatial information regardless of where the data is located to be used by users and providers within government, commercial and non-profit sectors as well as the academia and the public. Towards the implementation of MyGDI, Malaysian Center for Geospatial Data Infrastructure (MaCGDI) has execute a wide scope of MyGDI key elements consisting of policies coordination and implementation, standard development and compliance, establishment and monitoring of data framework, R&D on rapid GIS technology and issues related to data security. The facilities offered by MyGDI has also been enhanced to associate a mechanism for on-line data transaction via e-Commerce. While the National Geospatial Data Center (NGDC) will further builds to speed-up data explorer function. The ultimate aim of MyGDI development was targeted for public user to enable them to view and acquire MyGDI products. However to utilize the full functionalities of MyGDI and towards data downloading, they need to apply as a registered user which can be done through online registration to a Liaison Officer. Otherwise a user can log on as a guest. MaCGDI has also put a priority to build-up capacity within appropriate agencies related to MyGDI services. Consequently MaCGDI continuously provide a professional consultancy and human resources development that are needed for the management of geospatial information by organizing various training and courses pertaining to geospatial data handling and GIS technology.*

*Rapid development of our country has also monumented vital needs to every Executive Officer to response immediately and precisely in the process of decision and policy making, planning and monitoring on land and natural resources. So that MaCGDI has launched a product named Geoinformation for Executive (G4E) for exclusively used by them. The G4E application divided into themes covering Land Management, Land Use, Public Facilities, Demographic and Electoral, Natural Disaster as well as Transportation. MaCGDI is also in the process to develop a sector-based GIS application to tackle the problems addressed by interested parties in making decision, planning and making visual analysis. This application will encourages the use of GIS across the sectors towards better management of natural resources for economic, social, security and general administration.*

## **INTRODUCTION**

Malaysian Center for Geospatial Data Infrastructure (MaCGDI) has been established as a center under the Ministry of Land and Cooperative Development (MLCD) with the new bigger and proper set-up organization to provide better services as a Malaysian National

Spatial Data Infrastructure (NSDI). It carry a mission toward the preparation of policy, standard, technology, research, human resource and professional consultant services that are needed for the management of geospatial information which are also the Malaysian Geospatial Data Infrastructure (**MyGDI**) key elements. MaCGDI has so far played an effective role to achieve it objective in promoting land information sharing and exchange between agencies. This obviously could avoid wastage of duplicate effort on data collection and maintenance.

### MyGDI AS MALAYSIAN NSDI

MyGDI is an initiative by the government to develop a Geospatial Data Infrastructure to enhance the awareness about data availability and improve access to geospatial information by facilitating data sharing among participating agencies.

MyGDI, as the National Spatial Data Infrastructure (NSDI) for Malaysia, is an infrastructure that provides a basis for spatial data exploration, evaluation, and application for users and providers within all levels of government, commercial, and non-profit sectors as well as the academia and the public.

MyGDI services has emerge as an important bridge among data providers and users to enable data sharing and exchange using latest on-line information technology. It is a geospatial data infrastructure that comprises technology, policies, standards and procedures for agencies to cooperatively produce and share geospatial information.



Figure 1: MyGDI Services

## **MyGDI POLICY COORDINATION**

To ensure the full exploitation of geospatial information, MyGDI policy played an important role as a reference to eliminate issues relating to the organizational structure, copyright, pricing and privacy. What is preventing a more widespread use of geoinformation is a deeper understanding of the nature of the information itself and the policy issues governing their dissemination.

- **Data Custodianship**

The Public Administration Progress Circular 1/2001 (PKPA 1/2001) Bill was produced to outline the accountability for geospatial data management at public sector. The basic concept of Data Custodianship determine the Data Custodian as a TRUSTEE on behalf of the government to hold the responsibility in fulfilling the required standard and ensuring the integrity of their data. They must always proactive by taking any necessary measure to plan and manage their data to meet the MyGDI requirement. Data custodians have to fulfill six guidelines comprising principles as follows:

**Principle 1:** Data custodian is a trustee on behalf of the government.

**Principle 2:** Data custodian responsible to comply the required standard.

**Principle 3:** Data custodian must plan and manage their data to meet MyGDI requirements

**Principle 4:** Data custodian is an accountable data supplier.

**Principle 5 :** Data custodian responsible on the integrity of their data.

**Principle 6 :** Data custodian must ensure their data is always available and ready to be accessed by user through MyGDI.

Providing to the government policies, data custodian have their right to establish MoU with other party pertaining to regenerate or value-add their original data and deserve a right regarding to royalty, value added data pricing and copyright.

Nevertheless, data custodian has an obligation on the matters of data collection and maintenance to avoid any duplication. They must ascertain the availability and readiness of their data to be accessed. At the same time, they must systematically provide metadata and ensure the format of the metadata complying the guideline of MyGDI Metadata Standard.

On the other aspect, users also have a responsibility to ensure the accuracy and integrity of the data by taking appropriate move to report any data error to the related custodian. They must also not to deliver any data to other party without permission. A user those who are producing value-added to the original data must supply a copy to the respective custodian without charge and the data sources must be stated.

- **Digital Data Pricing Policy**

Geoinformation is a commodity that can be promoted and shipped by volume which incurred a cost in the system procurement, data conversion, operations and maintenance that are contributing to the production costs of the datasets. Hence it would be realistic and defensible for data providers to at least recoup some of the investment for sustainability of the resource and future development needs.

MaCGDI recommended that the government sector should not be profit-oriented but adopt partial cost-recovery measures. With the social role of the government in mind, the cost-recovery considerations should be long-term whereby direct profit from the data is not a priority. The digital data price should be cheaper than the production cost or cost to digitize the same as deterrent for duplicating efforts.

- **GToG, GToB and GToC Data Sharing Policy**

MaCGDI always work diligently to ensure the data sharing policy between GToG, GToB and GToC will be implemented smoothly. Many services require collaboration between Federal, State and Local Government. The goal of GToG portfolio is to forge new partnerships among levels of government. These partnerships will facilitate collaboration between levels of government and empower State and Local Government to deliver services more effective. The objective of GToB partnership is to reduce burdens on their business by providing one-stop access to information and enable digital communication using the language of e-Business. Both Businesses and government sectors will benefit MyGDI products and services. Finally, the ultimate aim of MyGDI products and services is to the public and consumers.

To achieve these target, MaCGDI has to implement a policy relating to data dissemination among Federal and State Government as well as Local Authority. This policy determines the data pricing, royalty and will be referred to the existing guidelines and regulations. MaCGDI will also emphasize on participation of high management level and urge their commitment

among government agencies, private sectors and academician in any MyGDI development activities.

## **MyGDI STANDARD**

Standards defined by ISO as a "documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, procedures, and services are fit for their purpose." The consistent use of standards have an important economic and social repercussions. MaCGDI promotes the use of geographic information standards for implementing various components of the MyGDI

MyGDI Standard is one of the key element which determine the success of MyGDI services, as the prime mover to allow data sharing, avoid wasteful duplication and promote effective economic management of resources by Federal, State and Local Authorities. Here below are among the standards which are encouraged to be used and currently part of them can be accessed from MyGDI .

- **MS1759 - Geographic Information/Geomatics Standard – Feature And Attribute Codes**

This Malaysian Standard specifies the method for encoding of geospatial data and provides the description of features and their associated attributes for the exchange of digital geographic information in the Geographic Information System (GIS) and mapping industries in Malaysia.

This Standard describes the encoding of the world in terms of **features** and **attributes**. Features are real world objects while attributes are properties or characteristics associated with the objects. Features are divided into 12 major categories comprising categories of Aeronautical, Built Environment, Demarcation, Geology, Hydrography, Hypsography, Soil, Transportation, Utility, Vegetation, Special Use (Dataset-specific) and General. This major category was further divided into subcategories.

Attributes are used to describe characteristics of a feature. Each attribute is described by using attribute codes to represent the category of information. Attribute value format statements provide a computer interpretation for the attribute value data type (e.g. real,

alphanumeric) and attribute values give quantitative/qualitative meaning to the attribute code. An attribute can be used by any feature, but care must be taken so that only meaningful attributes are chosen for a particular feature.

MS1759 should be used during the development of digital application system to support and satisfy the exchange of spatial information. Originally the draft of this standard was prepared by MyGDI Standard Technical Committee on behalf of TC2 SIRIM based on ISO/TC211 documents.

- **MS1759 Search Engine**

The search engine provides a method for user to search appropriate codes to be applied into their geospatial data. This service is available at all times and hosted by MaCGDI, runs on Microsoft platform. The system is developed to be flexible as users can search by the categories and keyword including Feature Description, Feature Name, Feature Code, Attribute Name or Attribute Code

The search engine can be accessed from the MaCGDI webpage or directly access from <http://www.macgdi.gov.my/searchengine>.

- **Unique Land Parcels Identifier (UPI)**

UPI was developed to overcome the problem in land management matters related to inconsistent use of data code between data providers. The different standard code used by various Land Related Agencies have generate difficulties to user in carry out data searching and data analysis. UPI enables various data that have been captured by several agencies to be accessed and shared. There are three categories of UPI introduce for cadastral data searching consisting:

- Final title for surveyed land,
- Qualified title for unsurveyed land; and
- Strata title.

The establishment of UPI was aimed to assist any activities pertaining to data retrieving and data exchange for spatial and nonspatial cadastral data. So that searching process for any land parcel can be done to the Cadastral Database from DSMM, Valuation Information System from Department of Valuation and Property Services Malaysia, Local Authority and Land Title Registration Information from Land Office.

- **MyGDI Metadata Standard**

Metadata is data that describes geospatial data or “data about data”. Metadata tells user the Who, What, and Where of a geospatial dataset, Who created it, When and for what purpose. Metadata describes the content, quality, condition, and other characteristics of data as well as the data usage constraints.

MyGDI Metadata Standard has been developed based on the ISO/TC211 : 19115 – Geographic Information/ Geomatics – Metadata. All agencies involved in MyGDI has been urged to publish their metadata together with their data. MaCGDI constantly making a move to create awareness among data provider about the importance and benefit of metadata. Metadata is a vital component to a successful long-term MyGDI application.

MaCGDI continuously monitoring the status of metadata published in MyGDI especially the element pertaining to Data Quality (DQ). It comprising Data Completeness, Logical Consistency, Positional Accuracy, Temporal Accuracy and Thematic Accuracy.

- **Geographical Names**

Every day we use Geographical names to describe our surroundings and to identify features of the landscape, and perhaps even to throw light on the local history of an area. The use of consistent and accurate geographical names is an essential element of effective communication to support socio-economic development, conservation and national infrastructure and preserve the rich heritage of place or feature. Each name tells a story and provides a sense of place as well as a link between location and a point on the map.

The National Committee on Geographical Names has been assigned MaCGDI to create and maintain a Geographical Names Database which can store names, location, historical background and gazette notification that have authoritative records available for government and public use. It can be managed with any database software with capable operating system to allow users to access and search-on-line.

The structure of the Geographical Names Database has been designed to accommodate the needs of State Government and Local Authority with consideration to the need of effective communication to support socio-economic development and provide benefits to trade,

commerce, tourism, cadastre, property rights, national statistics and etc. The elements included in the database structure comprising Geographical Name, alternative name, abbreviation, feature code, coordinate of location, the map sheet number where the place or feature located, local history of the place or feature, record of the date which the feature entered to the data base and the last date-to-change to the field of database record.

## **PUBLISHING WEB GAZETTEER**

This Gazetteer provide government, business and the general public with authoritative on the location and spelling of approved geographical names in a standard and consistent non-proprietary format. The production of Gazetteer involve a wide range of tasks such as the acquisition of data, compilation of jurisdictional datasets, quality control, product development, web design and technical support. All these activities call upon a wide range of skills and human resources.

The web Gazetteer allows users to access Gazetteer data on-line. By providing this facility, it will encourage greater use of the Gazetteer by the public. It will provide a large opportunity for user to send feedback to incorrect data, missing place and the history behind the certain locality names. Searching to this gazetteer can be made by typing in a name or selecting a custodian or feature type through the use of pick-lists.

There are many factors that influence the accuracy of the final Gazetteer product. Of particular note are the difficulties that arise from feature code inconsistencies between jurisdictions. Every agencies have their own features code which is already used in their database, so that they insist to use their existing code. Each jurisdictional representative has different levels of control and understanding of their databases, it is not possible to ensure that all the data supplied is in consistent format.

## **MyGDI CLEARINGHOUSE**

MyGDI Clearinghouse has the main goal to provide access to metadata directory and the metadata with links to view the geospatial data. Using distributed system of servers that are connected to the Internet, metadata is used to facilitate queries and discovery of data that are provided by the participating agencies. The Clearinghouse also provides access to geospatial data from which the information about the metadata can be examined.

Through searchable online system accommodated by the Clearinghouse, user can determine what data exist and evaluate the usefulness against their needs. Thus, the Clearinghouse facilitates the management of data collection and research activities.

Apart from the applications, the Clearinghouse also provides the necessary connection between data producers, managers and users. Through the Clearinghouse, agencies can publish and update the metadata as well as the geospatial data.

The operational of MyGDI is based on the following principles:

- Cooperation between Federal, State and Local Authorities to support the use of geospatial data in such areas as transportation, community development, agriculture, industry, environmental management and information technology; and
- Avoid wasteful duplication and promote effective economic management of resources by Federal, State and Local Authorities

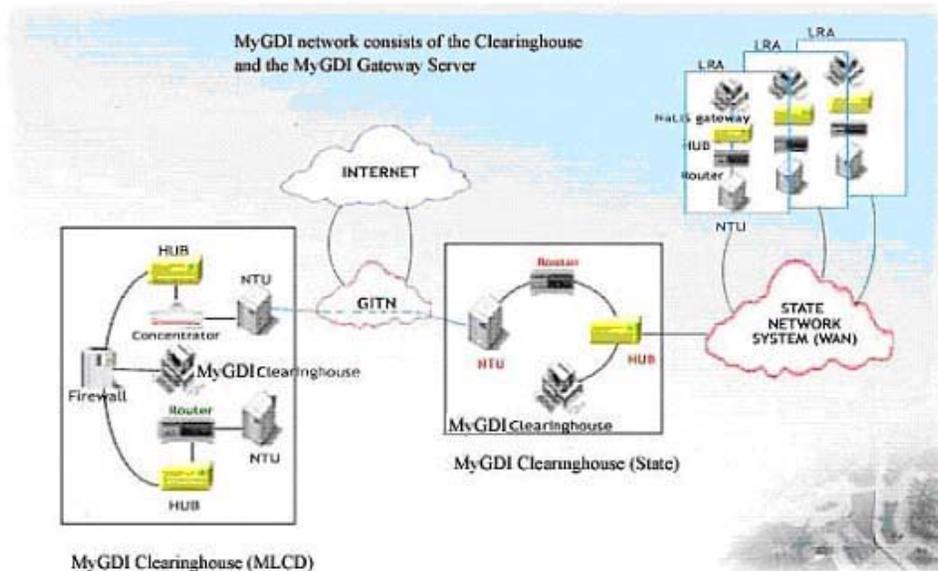


Figure 2: MyGDI Networking

MyGDI is operated via a concept of Clearinghouse Networking System which is also as a distributed networking of data suppliers, data managers and data users. MyGDI Clearinghouse Networking comprising distributed servers connecting the data suppliers using a platform of the latest Internet Web base. MyGDI Clearinghouse Servers was functioned as information reference center which are stationed at MaCGDI as a National

Clearinghouse and at every State Economic Planning Unit office in every state as a State Clearinghouse. MyGDI Gateway Server is an agency 'replicated data server' at every data supplier office ready to be accessed by users. MyGDI Gateway Server containing a sub-set of data imported from the custodian operational system.

## **HUMAN RESOURCE DEVELOPMENT**

Without the resources to undertake the work of developing policies, standards and managing data, the progress in establishing the MyGDI will be slow. Thus, MaCGDI has put a priority to build-up capacity within appropriate agencies related to MyGDI services.

A vital requirement in MyGDI implementations is an adequate education and training provided for operational staff, as well as realistic priorities defined with which to learn and apply the technology. This is where a formal training curriculum is required to ensure that time is dedicated to learning the technology properly. Adding MyGDI activities to a staff member's responsibilities without establishing well defined milestones and providing adequate time and training mechanisms is prone to failure. A well-verse trained staff will result in greatly reduced turnaround times for operations and ensure consistency in quality of product.

Consequently, MaCGDI in collaboration with Institut Tanah Negara (INSTUN) has organized various training and courses pertaining to GIS technology and application are attended by operational personnel from agencies participate in MyGDI. Technical workshop was also organized to create awareness and understanding about the need and standard to be complied in MyGDI, including Metadata Workshop and Data Collection Training.

## **GEOINFORMATION FOR EXECUTIVE (G4E)**

In February 2004, MaCGDI has launched it new product named Geoinformation for Executive or in short **G4E**. It is an application developed for exclusive use by government Executive Officer as an assistance tool in making decision and policy, planning, implementation, monitoring and enforcement.

G4E was needed due to a rapid development of Malaysia which have also monumented heavy pressures to an Executive Officer to response immediately and precisely in the

process of decision making, planning and monitoring on land and natural resources. Via G4E, an Executive Officer enable to access to the latest geospatial data and making any decision pertaining to the above mentioned task. The G4E application divided into themes covering Land Management, Land Use, Public Facility, Demographic and Electoral Boundary, Natural Disaster and Transportation

## **METADATA AND GEOSPATIAL DATA PUBLISHING**

MyGDI is an application designed to provide a single window to geospatial information regardless of where the data are located. It will assist user to find the data, examine the description, view and obtain the information. Using Internet Explorer, data can be found either through browsing or by submitting queries. The results obtained in browsing or searching of the data is presented in a list showing the data available in the system.

Link to these results is description about the data, which is also known as metadata. Each of the data shown is under the custody of the data providers. Users can view the data and the map but to obtain the data for further use, user need to purchase the data. For registered users, this application will accordingly accommodate ordering and downloading of data. Access to downloading of maps and to view valuable textual data is limited only to registered users that have authorization.

To use MyGDI, a user can log on as a guest, however to use the full functionalities of MyGDI a user needs to be a registered user. Beside the guest and registered user, there are also managers of data in MyGDI which is categories into two groups of manager: **LRA Manager** and **Liaison Officer**.

- **Becoming A Registered User**

To register as a registered user, users need to sign up by applying through a Liaison Officer. Include in this process is authentication of user presence, user position in the organization and other details. There is an online registration form for user to register by them selves. In the application form, users have to specify the agency that they need to get authorization from to access the data needed. Therefore, it is useful to log on to MyGDI as a guest and verify these agencies.

- **Logging On To MyGDI**

Accessing to MyGDI is provided through an interface where the user has to log in the ID and password. A user who is not registered with MyGDI can gain restricted access to the system as a guest. From this page, the application will bring the user to the Main Menu.



Figure 3 : User Verification log in area

- **Accessing Data In MyGDI**

From the main menu, there are six choices available for users in the interface. These are:

- Data Explorer** - contains three sub modules namely Search Map, Map Catalogue and Cadastral. In general this module provide access to the data that are available in MyGDI through the sub modules
- Data Dictionary Terminology** - provide further reference for data structure  
- provide further reference of terminology in the application
- Documentation** - provide option to allow the registered users changing the password
- Log Out** - securely close the user's access to the application.

After logging into the system, a welcome page will appear on the screen with a brief documentation about the system and introduction about all modules related to end-user part. After the user enter the ID and password, the screen will be channeled to Data

Explorer page which will display the full name of the user that logged in and clearinghouse name that user registered from.

From the **duration status** sub-menu, user can view date approved and expired as well as Level of access. This mean, each data from the agencies is either free or charge to be viewed.

**MyGDI** *serving your geospatial information needs*

Infrastruktur Data Geospasial Negara  
Malaysian Geospatial Data Infrastructure

\* duration status \*  
[Mohd Noor Abu]

National Clearinghouse Home | Logout

**M  
A  
I  
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U**

# Data Explorer

This module contains three submodules; namely Search Maps, Data Catalogue, and Cadastral. In general, this module provides access to the Data that are available in MyGDI through the submodules.

### Search Maps

Search Map is an interface available for users to explore the data in MyGDI. Using this method, data exploring will be made accessible through Search Maps engine, which provide an interface where the user can submit search queries. Particularly Search Map engine searches only mapping products.

### Data Catalogue

Data catalogue provides an interface for users to explore data by browsing through the information related to the data being sought. This process can access both mapping and cadastral-related products.

### Cadastral

This submodule provides an interface for users to browse cadastral-related products that are available in MyGDI. Using this application users can access the list of available data by state from which the user will be led further to the metadata and link to the cadastral search engine and cadastral map viewer.

Figure 4 : MyGDI Data Explorer page

- **Exploring Data**

Exploring data can be done using a Data Explorer module. Data Explorer contains three sub module comprising Search Map, Data Catalogue and Cadastral. These modules provide access to the data that are available in MyGDI through the sub module. There are two ways to get access to these modules, first by **clicking the Data Explorer image** or clicking the **Main Menu**.

## ➤ Search Map

The process of data search starts with the user specifying the area where the user needs to search the data for. This is done by dragging the mouse over the map to mark a box around the desired area. Selection of an area is mandatory in searching of the data.

To submit queries for the system to retrieve the related data, user can specify Clearinghouse, Keyword, Agencies, Date or Theme as the search categories by ticking the box besides the chosen categories. If clearinghouse is not selected, system will search metadata from all listed clearinghouse.

**Data Explorer**

Search Maps | Data Catalogue | Cadastral

**Geographic Area Coverage**

Define the Geographic Area of Interest

N: 10.41 | S: -2.20 | E: 119.83 | W: 99.64

ZoomIn  ZoomOut  Pan  Extent

**Agencies**

Specify name of the agencies which provide the desired spatial data. **Agencies :**

Department of Survey and Mapping, Malaysia

Include this search option

**Temporal Date**

Key in the date

From [ ] to [ ]

[ Valid format : dd/mm/yyyy ]

Include this search option

**Theme**

**Clearinghouse**

Specify data clearinghouse

Kedah  
Perlis  
Melaka  
Labuan  
National  
Kuala Lumpur

Include this search option

**Keyword**

Specify your keyword.

Your search keyword: [ ]

Include this search option

**Spatial Keyword:**

Aeronautical  
Built Environment  
Demarcation  
Geology  
Hydrography  
Hypsography  
Soil  
Transportation

Include this search option

**SEARCH**

Figure 5 : Search Map page

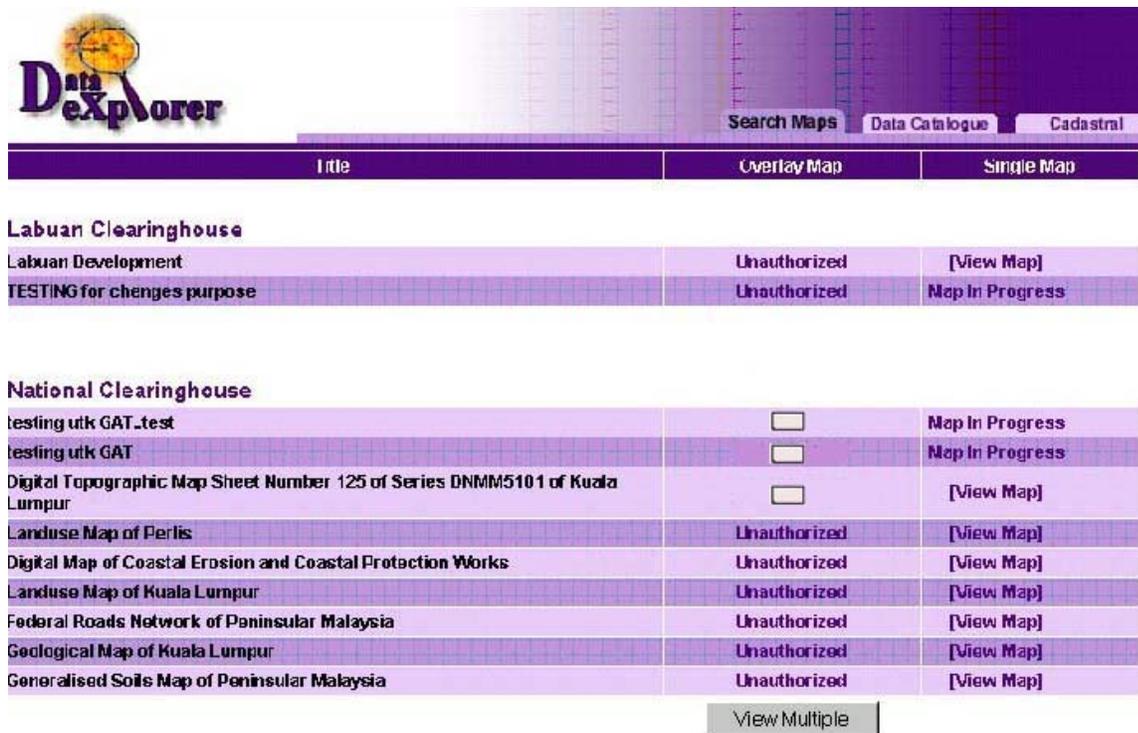
The keyword to be used can be keyed in by the user and for the agency to be chosen, a dropdown menu is given. The dates to be used in the search also

needed to be keyed in. Additionally, choosing of theme to be used is provided in a list from which multiple selections can be done.

Finally, click the **Search** button to submit the query. From this, the result fulfilling the search criteria will be displayed. This result consists of the list of metadata that are available in the system. Linkages for further exploration of the data are also provided.

➤ **Metadata List**

A list of the product available in the system is shown as a result in the process of browsing or searching. The title of the product is given together with a brief description. This title links to a more detailed description of the data.



The screenshot shows the 'Data Explorer' interface. At the top left is the logo. To the right are navigation tabs: 'Search Maps', 'Data Catalogue', and 'Cadastral'. Below these is a table with three columns: 'Title', 'Overlay Map', and 'Single Map'. The table is divided into two sections: 'Labuan Clearinghouse' and 'National Clearinghouse'. The 'Labuan Clearinghouse' section has two rows. The 'National Clearinghouse' section has eight rows. Some rows have checkboxes in the 'Overlay Map' column, while others have 'Unauthorized'. The 'Single Map' column contains links like '[View Map]' or 'Map In Progress'. At the bottom of the table is a 'View Multiple' button.

Title	Overlay Map	Single Map
<b>Labuan Clearinghouse</b>		
Labuan Development	Unauthorized	[View Map]
TESTING for changes purpose	Unauthorized	Map In Progress
<b>National Clearinghouse</b>		
testing utk GAT..test	<input type="checkbox"/>	Map In Progress
testing utk GAT	<input type="checkbox"/>	Map In Progress
Digital Topographic Map Sheet Number 125 of Series DNMM5101 of Kuala Lumpur	<input type="checkbox"/>	[View Map]
Landuse Map of Perlis	Unauthorized	[View Map]
Digital Map of Coastal Erosion and Coastal Protection Works	Unauthorized	[View Map]
Landuse Map of Kuala Lumpur	Unauthorized	[View Map]
Federal Roads Network of Peninsular Malaysia	Unauthorized	[View Map]
Geological Map of Kuala Lumpur	Unauthorized	[View Map]
Generalised Soils Map of Peninsular Malaysia	Unauthorized	[View Map]

View Multiple

Figure 6 : Metadata List page

By clicking the link will show the view of the map showing the data. To view multiple products in a viewer, user can check the boxes for all the relevant products. There could be some product do not have a box beside them, otherwise "unauthorized" is shown. This indicates that user does not have an

authorization from the custodian of those products to access the view to the product.

➤ **Metadata Details**

By clicking the product title in Metadata List, detailed description of the product will be displayed. From this page, a view of the map can also be accessed. Upon exploring the data which include viewing and examining the metadata and after deciding that the data is relevant, the user can obtain the data either by placing an order or by downloading it. Downloading however is allowable for authorized registered user only.

The screenshot shows the 'Data Explorer' web application interface. At the top left is the logo. On the right, there are navigation buttons for 'Search Maps', 'Data Catalogue', and 'Cadastral'. The main content area is titled 'Metadata Details' and displays the following information:

<b>MD_Metadata</b>	
Language:	English
Character Set:	ISO 10646-2
Hierarchy Level:	attribute (001)
Hierarchy Level:	attribute (001)
<b>MD_Identification</b>	
Language:	English
Character Set:	ISO 10646-2
Abstract:	This digital fedrela roads network of Peninsular Malaysia map is the vector map of 1:750,000 scale, digitized from the series No. 242-89. The 3MB of data is in Arcview Shapefile format
<b>EX_GeographicBoundingBox</b>	
Extent type:	inclusion
East Bound Longitude:	105.100
West Bound Longitude:	99.270
South Bound Latitude:	.890
North Bound Latitude:	7.190
Spatial Resolution:	1:750,000
<b>MD_Category</b>	
Theme Code:	Transportation - NFD07
<b>CI_Citation</b>	
Title:	Federal Roads Network of Peninsular Malaysia
Date:	09/02/1999
Edition:	3
<b>CI_MandatoryParty</b>	
Responsible party organisation name:	Public Works Department, Malaysia
Responsible party role code:	Owner (003)
<b>CI_Telephone</b>	
Voice telephone:	03 40107070

Figure 7: Metadata Details

➤ **Cadastral**

This sub module provides an interface for user to browse cadastral-related products that are available in MyGDI. By using this application, users can access the list of available data by state from which the user will be led further to the metadata and link to the cadastral search engine and cadastral map viewer.

The screen will display the list of metadata ordered by product from each agency and the user can tick on the check box of metadata title and press **View Multiple** button to get the map. By clicking on the **View Map** option on the left side of the metadata list given, the screen will open the Cadastral window for the selected agency and state.



**Metadata List for Perlis**

Title	Overlay Map	Single Map
Mosque Information in Perlis	<input type="checkbox"/>	[View Map]
Locality of villages in Perlis	<input type="checkbox"/>	[View Map]
Locality of Public Housing Scheme in Perlis	<input type="checkbox"/>	Map In Progress
Land Registration Information	<input type="checkbox"/>	[View Map]
Property Assessment Information	<input type="checkbox"/>	[View Map]
Housing Estate Plan	<input type="checkbox"/>	[View Map]
Local Authority Roads Network	<input type="checkbox"/>	Map In Progress
Digital Cadastral Lot	<input type="checkbox"/>	[View Map]
Landuse Plan Information	<input type="checkbox"/>	[View Map]
Property Sales Transaction for Perlis	<input type="checkbox"/>	[View Map]

Figure 8 : Metadata List For Cadastral

➤ **Identify**

This option will display the attribute information of the feature selected by the user. Click the identify tool on the toolbar, and click on the desired location on the map. By doing so, it will provide the attribute information of the feature.



- Malacca 7 agencies
- Federal Territory of Labuan 3 agencies

By the year 2005, MyGDI implementation will be extended to another eight states covering Penang, Perak, Selangor, Kelantan, Terengganu, Pahang, Johor and Negeri Sembilan.

Complementing the expansion of MyGDI services nationwide, procurement tenders have been offered for the collection and acquisition of geospatial data that includes scanning and digitizing of hardcopy plans, entering attributes, and digital data editing for data acquired from MyGDI data providers. The purpose of these tenders is to produce a digital data from hardcopy plans. This will include various processes consisting of checking, verifying and correcting an existing digital data and also feeding the attributes in a complete digital form needed for data sharing in MyGDI application.

Action plan for MyGDI data preparation in eight states mentioned above took off by organizing workshops. These workshops serve as a platform in collecting and compiling feedback from the participants by handing over questionnaires and Q&A sessions to identify the agencies involved, currently available GIS in the agencies, their products, and data availability and compatibility either in softcopy or hardcopy. This includes the assessment of their technical requirements.

Plan for the expansion of MyGDI services has been a common agenda in the States Technical Meeting attended by representatives from every agency involved in MyGDI implementation in each state. A thorough explanation on data preparation was given to the attendee to give them more understanding on the objective of MyGDI and how they can participate in MyGDI. These meetings also discuss in detail on how to develop data for MyGDI and to identify the data custodian.

The final stage of MyGDI data preparation involved the process of data development consisting of data collection, digitizing and linking the data to the respective agencies via the clearinghouse servers located at each state. The data development for the above mentioned eight states are scheduled to be completed by the middle of year 2005.

- **National Geospatial Data Center (NGDC)**

To enhance the facilities that have been established for MyGDI, the National Geospatial Data Centre (NGDC) further builds on these investments to share geospatial data among the government agencies more efficient as a formal, multi-purpose Geodatabase and content standards to support the business of the government that requires geographic components and tools to handle and manage the geospatial data and facilitates cross-agency decision-making that involves geospatial information. NGDC will represent as a national geographic knowledgebase which was recommended by MAMPU based on their research on “Pentadbiran Daerah dan Tanah Dengan Tumpuan kepada Urusan Tanah”.

The establishment of NGDC will encourage greater collaboration and coordination in the use of geospatial data across all levels of government which will support the business of the government that requires geographic components and tools to handle and manage the geospatial data and also facilitates cross-agency decision-making that involves geospatial information.

The objective of establishing NGDC is to become a coordination center for data collection, management and as a centralized storage of geospatial data. NGDC will make it easy to publish data and dramatically shorten the timeline from data collection to distribution. This will allow data to be accessed more efficient and faster, therefore can expedite user in research process or other relevant process pertaining to the data. Obviously NGDC contribute towards dissemination and distribution of geospatial data swiftly.

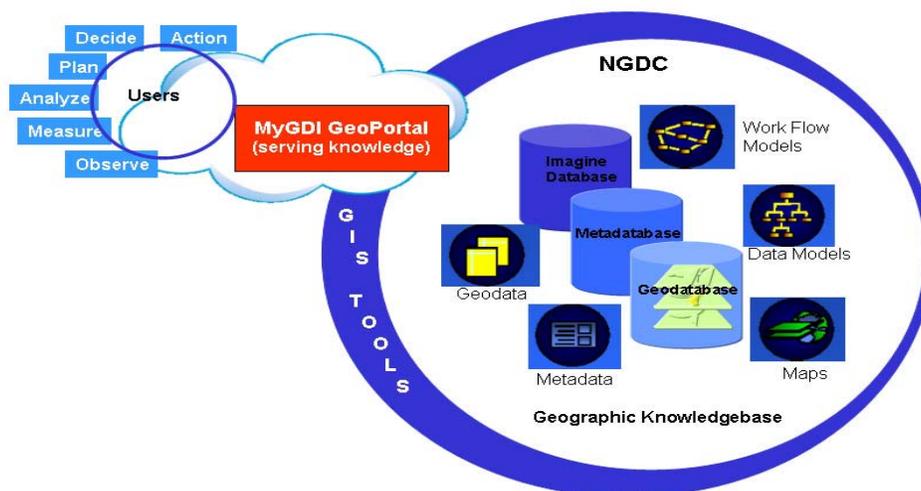


Figure 10 : NGDC - Managing Geographic Knowledgebase

Among the components in NGDC, the central focus is the development of a portal to support access to geospatial information by all levels of government and by the public in general. The *National Geospatial Portal (MyGDI GeoPortal)* will functioned as a logical extension to the MyGDI Clearinghouse Network as a geospatial data exploration, evaluation, and application for users and providers within all levels of government, commercial, and non-profit sectors as well as the academia and the public.

GeoPortal is a web sites that present GIS content as the primary focus in order to leverage a communities GIS investment and disseminates GIS capabilities and content to society. MyGDI Geoportal to be developed as a Functional Portal that provides spatial capabilities online and NSDI Portal as a discovery tool for spatial content.

- **MyGDI e-Commerce**

Implementation of MyGDI involved various government agencies at the Federal, State and Local Authority level. Through the provided infrastructure, the geospatial data that is published through MyGDI can be accessed online, so that associated payments system are needed in accessing and downloading geospatial data.

The current implementation of MyGDI is only permitted user to view the data, whereas the actual function to purchase the data online and downloading, are not yet realized. Hence, a mechanism for online data transaction needed to be developed via e-Commerce to cater the user needs.

MaCGDI, as a coordinating agency on the data sharing has been instructed by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) of the Prime Minister's Department to provide facility through MyGDI e-Commerce module as a method for online data transaction through MyGDI.

Since there are many agencies at various levels, acceptable methods of payments needed to be examined. The feasibility study has been made includes identification of the requirements related to remittances involved in online transaction in MyGDI context. The study also formulated the architecture and features for MyGDI e-Commerce payment methods that can be incorporated in the current MyGDI Application. This information is gathered from Federal Government and State Government agencies as well as Local

Authorities. In the process, the Treasury and the Auditor General are also assess acceptability of the recommendations against the procedures and guidelines as set.

A prototype has been developed to demonstrate the major functionalities to be included in MyGDI e-Commerce payment methods in interagency data transactions. This prototype has the purpose to convey the understanding about the major functionalities that are needed in MyGDI data transaction, in terms of the payment process including the reports to be generated and the means of payment.

A specific type of account for a particular group of users are proposed to suit the need of various level of agencies or user. Three type of payments account have been proposed to complement the implementation of Data Sharing Policy which require collaboration among levels of government and user.

- Prepaid Account – This account has been proposed for online transaction from Government Agencies to a business community (Government to Business – G2B). Payment to the data provider will be made via e-SPKB, which will be processed by Accountant General.
- Credit Card – This account has been proposed to fulfill the need from public user to buy a data from Government Agencies (Government to Consumers – G2C)
- Postpaid Account – Involving a Government Agencies at Federal and State Level (Government to Government – G2G). Payment will be made via e-SPKB or SPEKS.

Based on the study, a solution related to the flow and mechanism of payment involved in online data transaction has been formulated including the report to be generated and identification of the means of payment. The overview of the proposed e-Commerce Online Transaction process are as shown in the Figure 11.

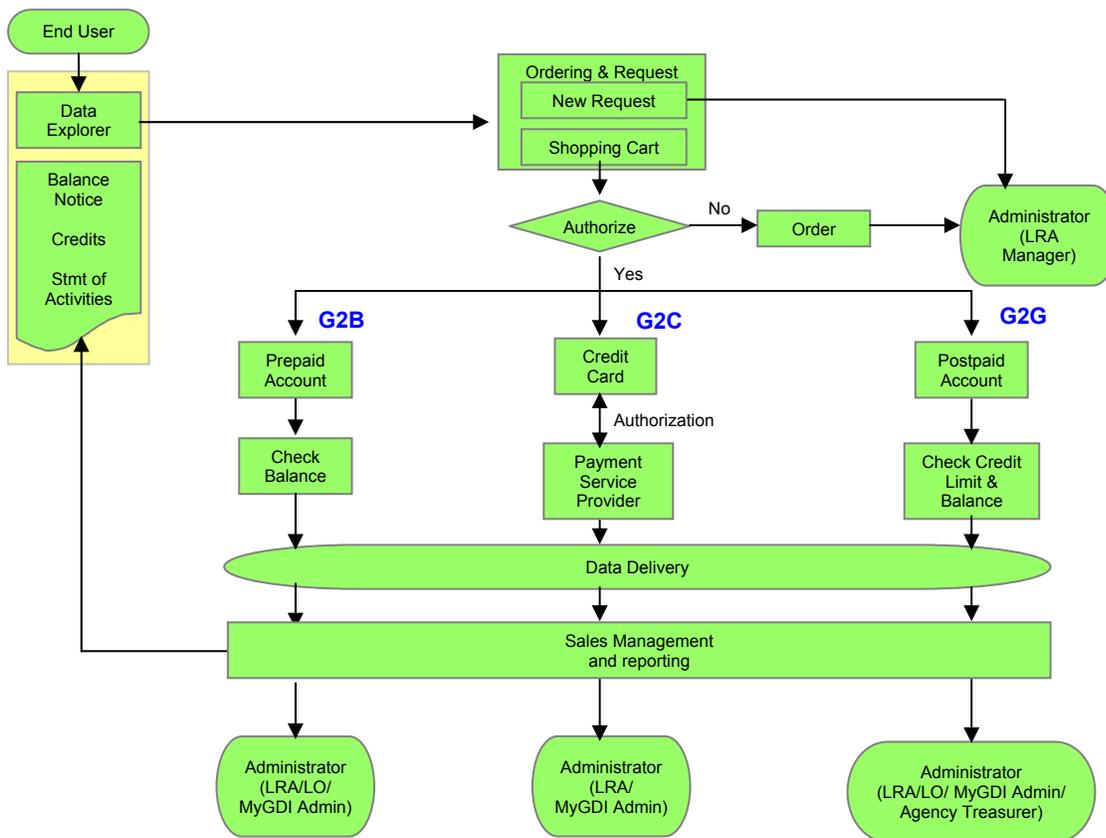


Figure 11: High Level of Online e-Commerce Transaction flow

The architecture and feature for MyGDI prepaid and e-Commerce payment method are also have been formulated that needed to be incorporated in the current MyGDI Application. It involves addition of new module or new function and enhancement of features to an existing MyGDI application to accomplish the need of online data transaction.

Modules	Enhancement of Features	Description
Data Explorer	Data Request	New Function - Customer can request data that are not currently available through a requisition form
	Shopping Cart	Enhancement of the current shopping cart – to include intelligent agent, the shopping cart will categorize all the data in the different transaction methods (ordering, credit card etc.) with enhanced security and functionality
	Promotion	New Function - Allows publishing of map (data) by LRA to promote awareness and update of current pricing to users
Help Desk		A New Module - Provides interface for client to report and ask for advice from administrator or support team regarding related issues
Personalization	Loyalty Programme	New Function - An incentive to encourage clients who are actively buying the products. Loyal clients with have bonus point which are can be redeemed with data at certain amount

MyGDI Admin	Traffic Report	An enhancement – provides comprehensive traffic report to help administrator to manage and upgrade hardware and network infrastructure
	Sales Management and Reporting	An enhancement – provide reporting about sales and purchase items that is secured and can be used as an official communication with all the related agencies. Enhancement will also include useful statistic of business data
	Customer Tracking	New Function - Tracks customer’s buying behavior to understand the customers for the purpose of personalizing the user interface/ pages based of the profile as well as for target marketing.
LRA Manager	Product and Metadata Update	Enhancement to include alert to manage and validate data that has not been updated by the relevant agencies for a specific duration of time
	Sales Management and Reporting	An enhancement – provide reporting about sold items from the agency that is secured and can be used as an official communication with all the related agencies
Liaison Officer	Sales Management and Reporting	An enhancement – provides reporting about purchased items from all agencies that is secured and can be used as an official communication with all the related agencies.

Figure 12: MyGDI e-Commerce Modules – Additional Module and enhancement Features

The other most important issue pertaining to the implementation of MyGDI e-Commerce is relating to security and secure environment for MyGDI e-Commerce. Integrated security provides a comprehensive, holistic security system which combines multiple security technologies with policy compliance, management, consumer service and support and advance research for complete protection. Key security technologies include in this application are User Management and Access Level Control, Secure Socket Layer and Email Digital Certificate. By combining multiple security functions, integrated security can more efficiently protect against a variety of threats at each tier to minimize the effect of attack.

- **MyGDI The Way Forward**

In 2004 and 2005 MaCGDI has set a target to ensure the planning of MyGDI development nationwide can be realized. It involves Policy, Standard, Data Framework, MyGDI Clearinghouse, R&D and Outreach Programme.

MaCGDI will ensure by the year of 2005, MyGDI will be fully implemented nationwide for the sake of State Government in handling the economic growth, environmental quality control and social development of the country. Then they will be encouraged to utilize the MyGDI in their development planning, monitoring and enforcement at the state level.

MaCGDI will also constantly monitor the performance of MyGDI services meet the need of user. The development of G4E will also be extended based on various sectors for the use of executive level.

To face a challenge towards year 2005, MaCGDI will more proactive to ensure the preparation of data for all states in Malaysia will be completed as planned by focusing and giving a priority to the current needs and data coverage, especially pertaining to the land management and development on the district level.

Since there are many important data at the State and Local Authority are still not in GIS ready format, MaCGDI will take a top-down approach to help them convert the hardcopy data into digital format. On the other aspect, MaCGDI also planned to aggressively monitor the quality of data and metadata published in MyGDI to ensure the data supplied by the related agencies complying the standard and procedures. This can be realized by establishing the monitoring procedures imposed to the agencies involving in data supply.

In the aspect of standard development, in 2004 – 2005 MaCGDI will emphasis on the use of consistent standard among the agencies and data provider. Standard have important economic and social repercussions. Standard make a positive difference to a society as a whole.

To promote the use of standard among the data provider agencies, MaCGDI will continuously conduct workshops and seminars to create awareness among users and data providers in using the standards. MaCGDI also will work closely with Department of Standard Malaysia (DSM) and SIRIM, which are responsible for the development and application of standard-related product in Malaysia.

For another coming years, MaCGDI will continuously carry out R&D to develop and upgrade the MyGDI application by making an observation on the IS/MS documents on Geoinformation to adopt and adapt for MyGDI Standards.

To ensure MyGDI is widely used by government agencies, public and private sector a comprehensive outreach programme on MyGDI will be carry out throughout the country along 2004-2005. It will be done by organizing various promotion programme such as

MyGDI User Conference, Workshop and Convention. A proactive move such as Awareness Campaign, Luncheon Talk and Courtesy Call to ensure MyGDI reach the target group.

## **CONCLUSION**

MyGDI was established as an initiative of the Government to facilitate the transit of spatial information from data providers to various group of users based on MyGDI standard. This would be through providing on-line access the spatial data that resides at various agencies, over the Internet via the MyGDI Gateway.

Subsequently MyGDI plays a major role by bridging national data provider agencies onto one platform. This could avoid wasteful duplication of effort in the collection and management of geospatial information, apart from ensuring the accuracy, timeliness, correctness and consistency of the spatial information that are to be utilized in planning for development and management of land resources.

As a whole, MyGDI provides a smart access to geospatial information and support the powerful GIS technology development which provide the ability to automate data analysis and capable in spatial inquiries of geospatial information. This goes hand in hand with the Government's commitment to be abreast of advances made in technologies, and in particular, the ICT to optimise MyGDI products and services.