

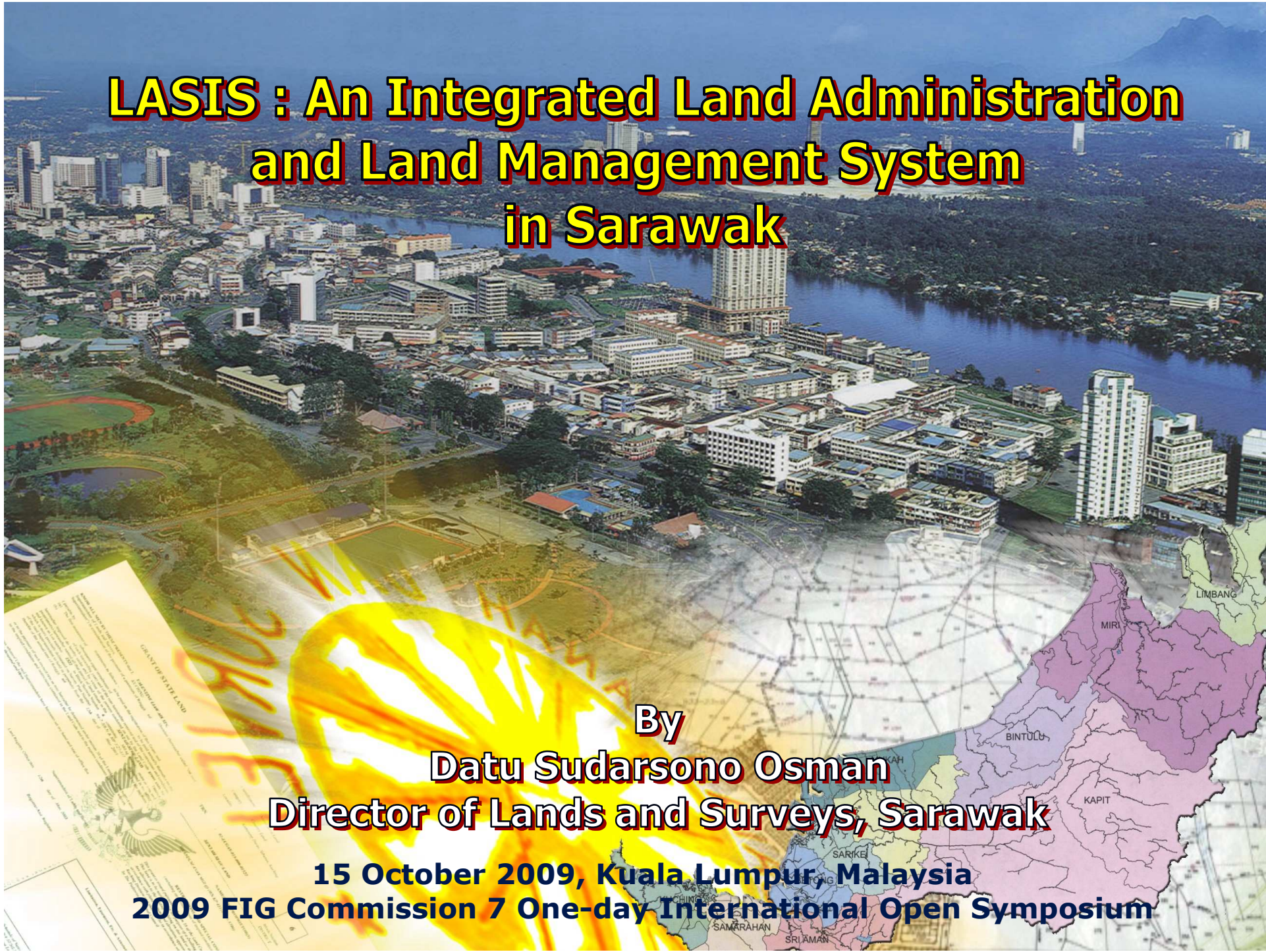
LASIS : An Integrated Land Administration and Land Management System in Sarawak

By

**Datu Sudarsono Osman
Director of Lands and Surveys, Sarawak**

15 October 2009, Kuala Lumpur, Malaysia

2009 FIG Commission 7 One-day International Open Symposium



Presentation Outline

- About Us
- LASIS Implementation
- Work Through
- Achievements
- Lessons Learned
- What's Next

Sarawak Land Size: 124,450 sq km



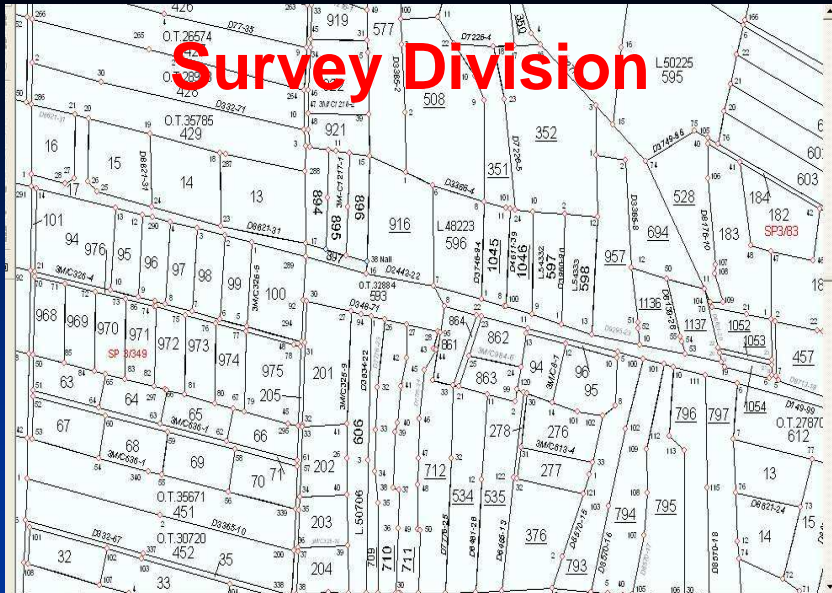
VISION

To be an excellent land administration and land management organization.

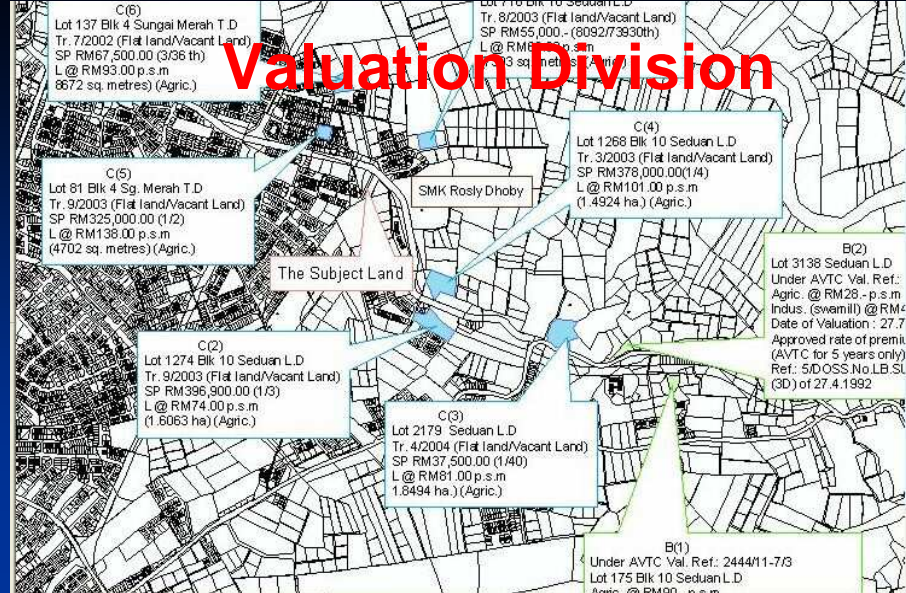
MISSION

To administer and manage land to the best advantage to the State and people with professionalism and integrity in tandem with the aspiration of the State.

Survey Division



Valuation Division

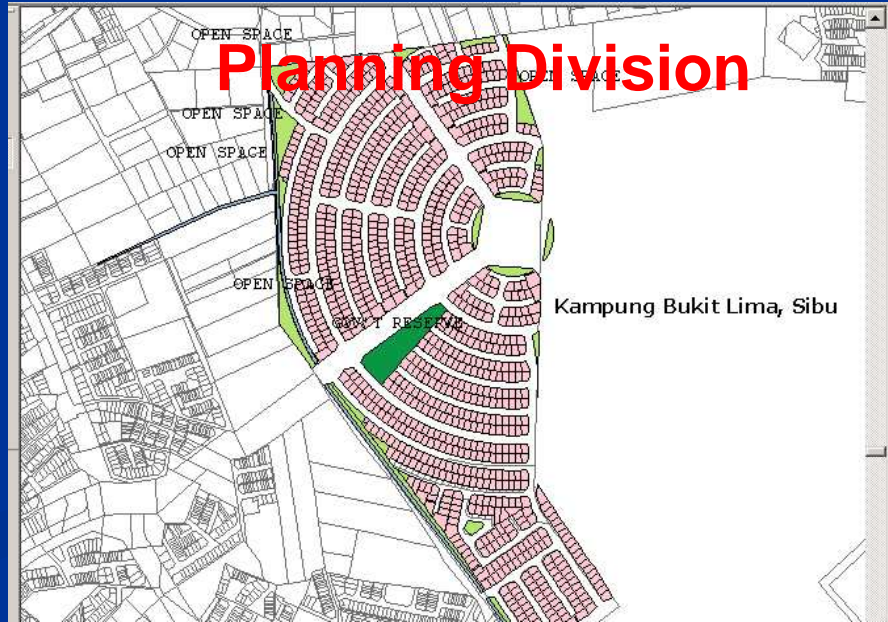


Core Businesses

Land Division



Planning Division



PLANNING DIVISION

- ❑ **Urban Design and Regional Study**
- ❑ **Development Control & Subdivision of Land**
- ❑ **Site Selection For Projects**
- ❑ **Planning & Coordination of 5 Years Malaysia Plan Under Land & Survey Expenditure Head**



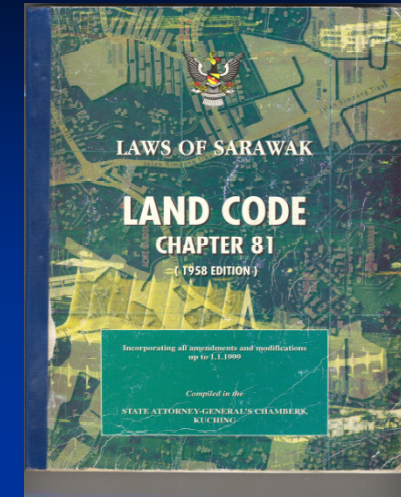
SURVEY DIVISION

- ❑ Geodetic Survey
- ❑ Topographical Survey
- ❑ Cadastral Survey
- ❑ Mapping and Aerial Photography

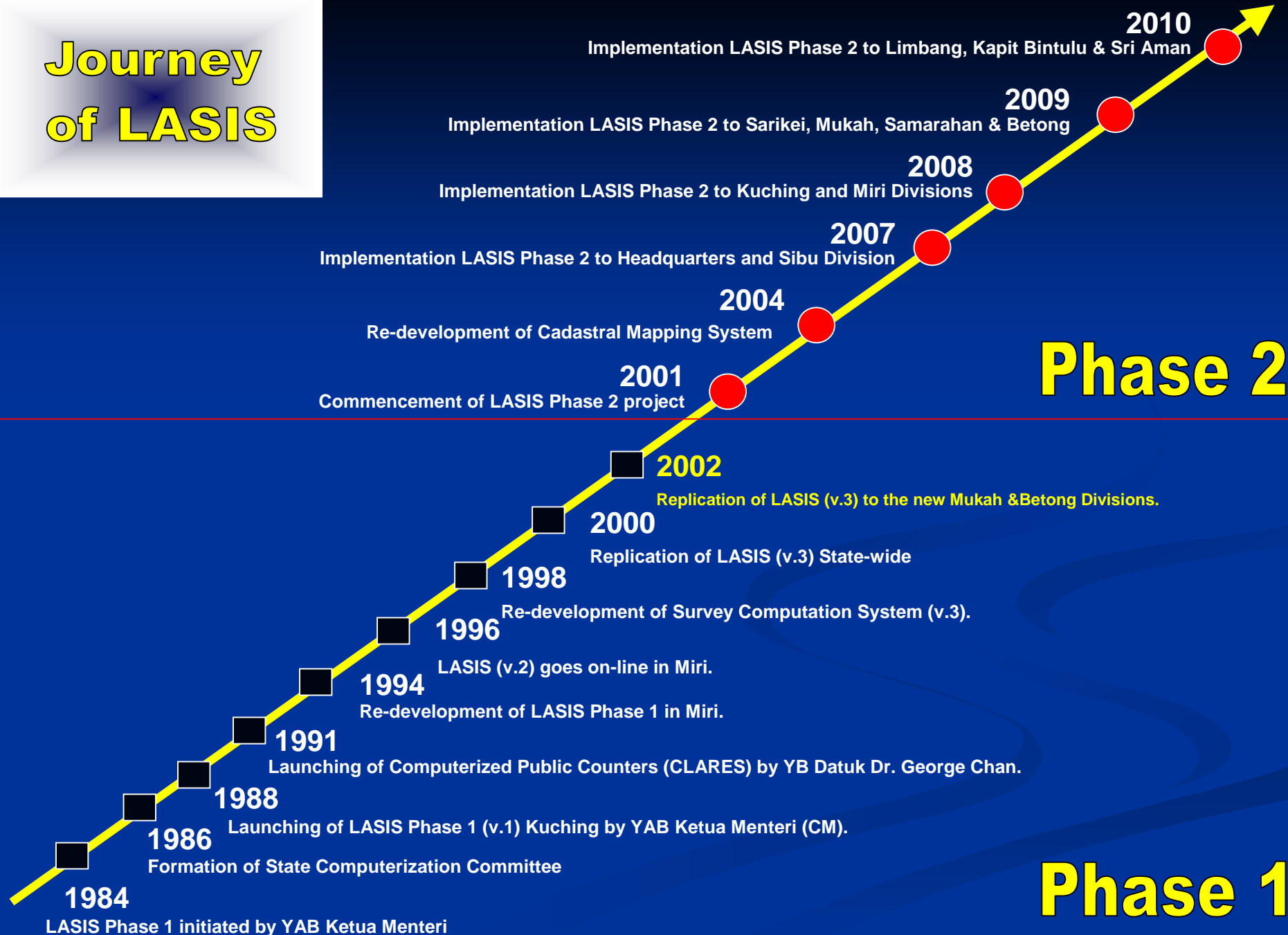


LAND DIVISION

- ❑ **Land Administration**
 - **Enforcement**
 - **Application and Alienation of Land**
- ❑ **Land Registry**
- ❑ **Adjudication of Native Customary Rights**
- ❑ **Mining and Rock Materials Licenses**
- ❑ **Collection of Land Revenue**



Journey of LASIS



Phase 2

Phase 1

LASIS Phase 1

Core Information for Land Administration

- Survey & Cadastral Map
 - Location, boundary, area, accessibility
- Title Information
 - Ownership, encumbrances, approved usage and conditions
- Land Revenue
 - Land rent and premium payable, due date

Survey Computation System

- ❑ eBook Office System
- ❑ Digital Survey Job submission
- ❑ Automated Survey Job screening
- ❑ Detail survey computation checking
- ❑ Posting SPO (Survey Plan Outline) to Cadastral Mapping
- ❑ Provide Lease Diagram for Title Preparation

Cadastral Mapping

- ❑ Maintain a register for all land parcels in the State
- ❑ Updating of cadastral map through SPO merging
- ❑ Providing cadastral information for land management and development planning
- ❑ Geo-spatial layers as a base map for Sarawak

Lot Register

Lot Register Maintenance

Find by Job Number or UPI

Job Type: SJ Job Year: 1982 Seq. No: 0168 No. of lot allocated:

Division: 03-SIBU District:

Job Number	Type	Division	District	Block Sec	Lot No	Legal Area	Area Unit	Field Book	Sheet Ref No	Index Map	Plan
19820168	01	03	001	015	00221	3.818	H	3M/C157-2	K102204	6.2	
19820168	01	03	001	015	00222	1.386	H	3M/C157-2	K102204	6.2	
19820168	01	03	001	015	00223	9.307	H	3M/C157-3	K102204	6.2	
19820168	01	03	001	015	00224	1.665	H	3M/C157-3	K102204	6.2	
19820168	01	03	001	015	00225	3800	M	3M/C157-5	K102204	6.2	
19820168	01	03	001	015	00227	80	M	3M/C157-5	K102204	6.2	
19820168	01	03	001	015	00228	8390	M	3M/C157-5	K102204	6.2	
19820168	01	03	001	015	00230	2020	M	3M/C157-5	K102204	6.2	
19820168	01	03	001	015	00231	320	M	3M/C157-5	K102204	6.2	

UPI Details:

Type: SJ Sheet Ref: K102204 6.2

Job Number: 19820168 D/F Book No: 3M/C157-2 Date: 10/27/1982

Division: 03 Plan No: **Parent Lot** Remarks: Mut. into Lots 306-308. Subd. of Pre-Blk Lot 2838.

District: 001-SEDUAN LAND DISTRICT Land Admin Code: 01-SIBU

Block/Sec: 015 Land Category: Code: 03-COUNTRY LAND Land Classification: Code: 01-MIXED ZONE LAND

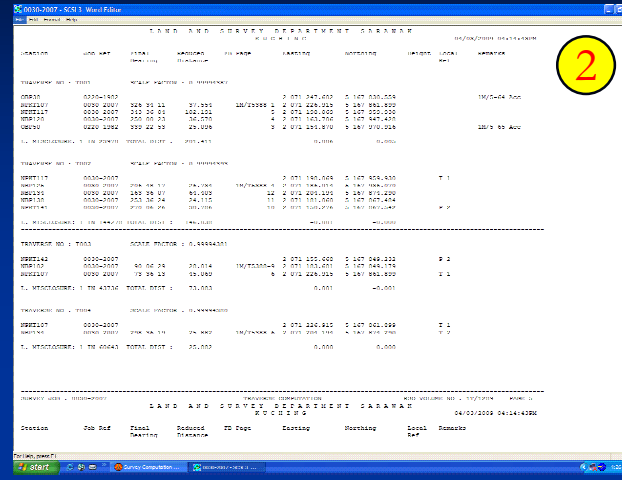
Lot No: 00221 Legal Area: 3.818 H Gazette No:



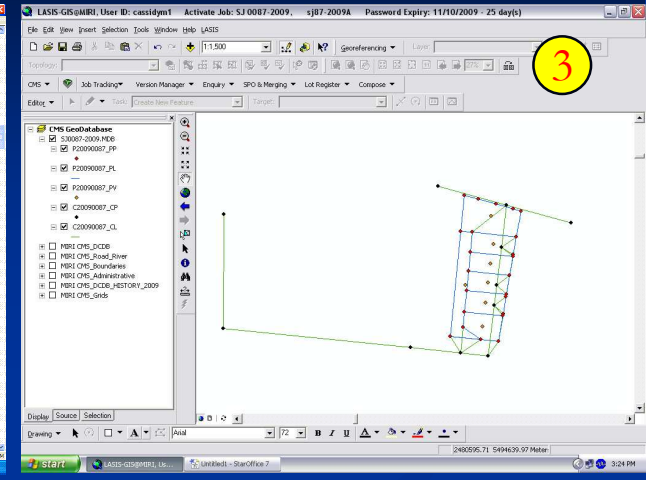
Creating Accurate Parcel Data



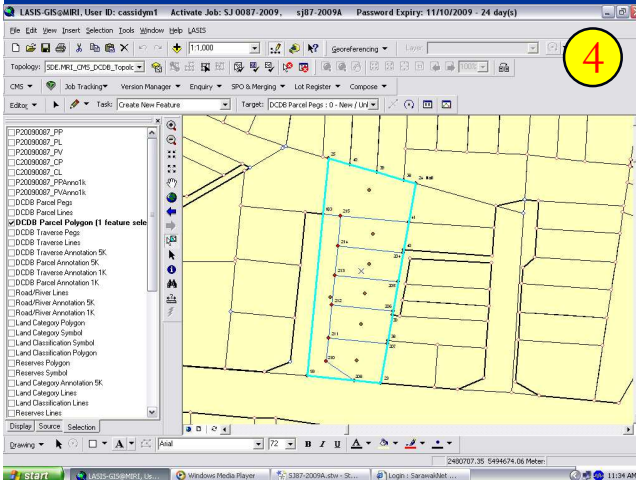
Field Survey



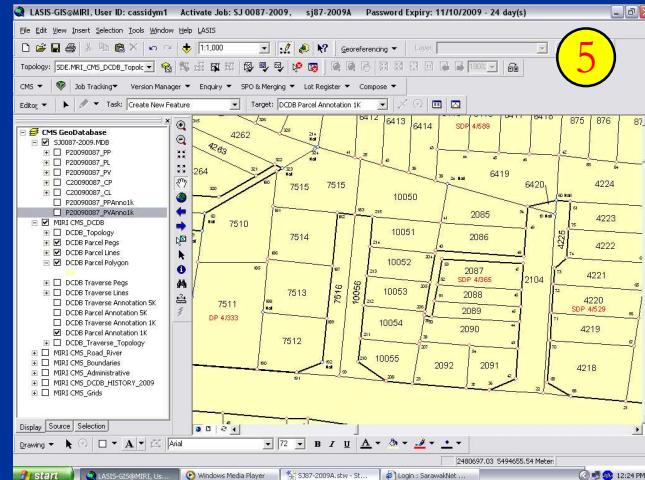
Survey Computation



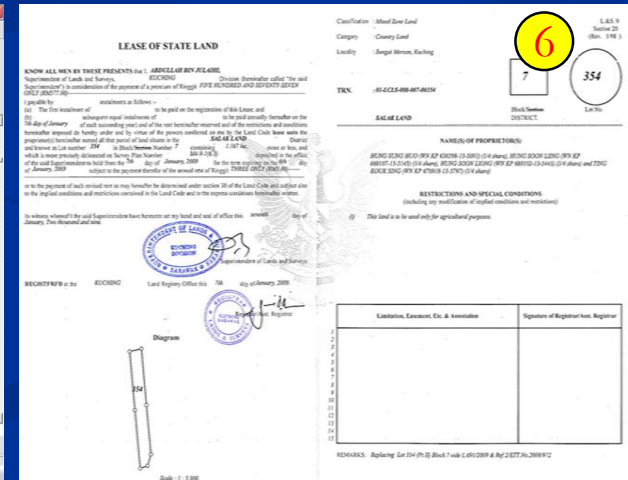
Generate SPO



Merging Process



Update Cadastral Map

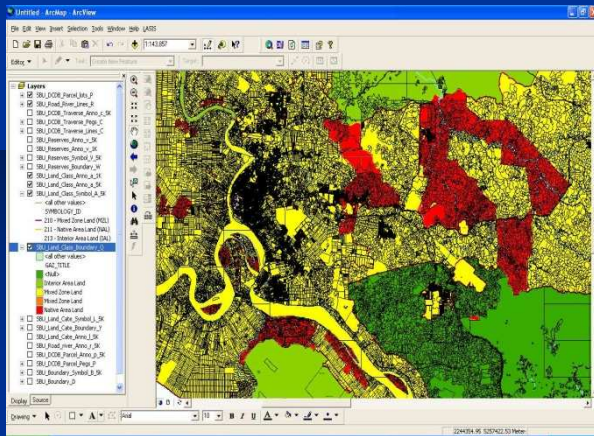


Print Title with Lease Diagram

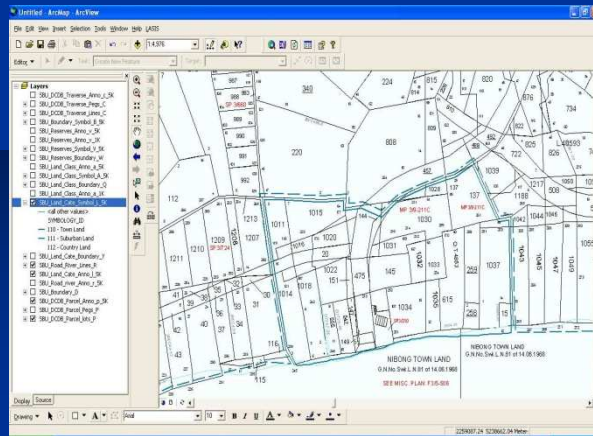
Cadastral Core Components of SDI

- ❑ Coordinates Reference System
- ❑ Administrative Boundaries
- ❑ Cadastral Parcels
- ❑ Reserves
- ❑ Land Classifications
- ❑ Land Categories
- ❑ Areas
- ❑ Survey Controls
- ❑ Gazette Notifications

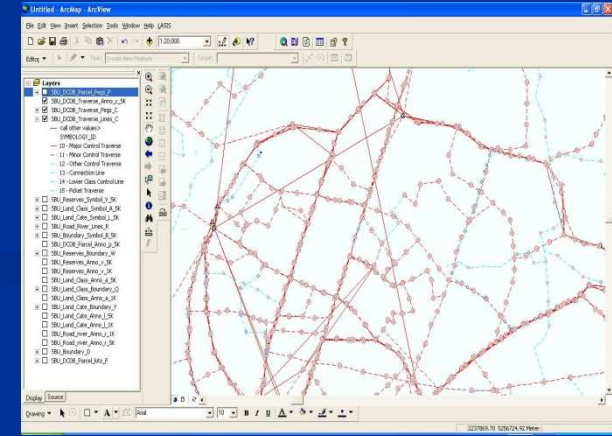
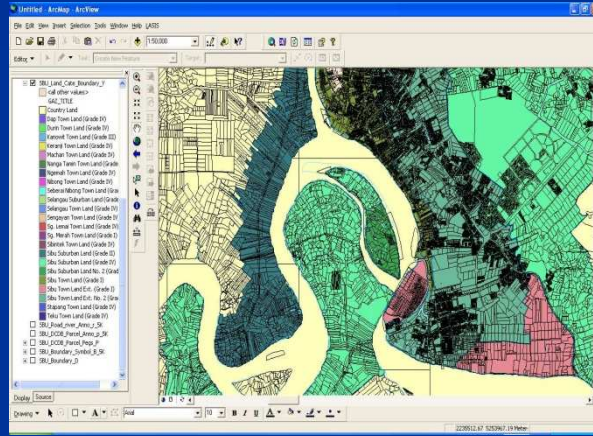
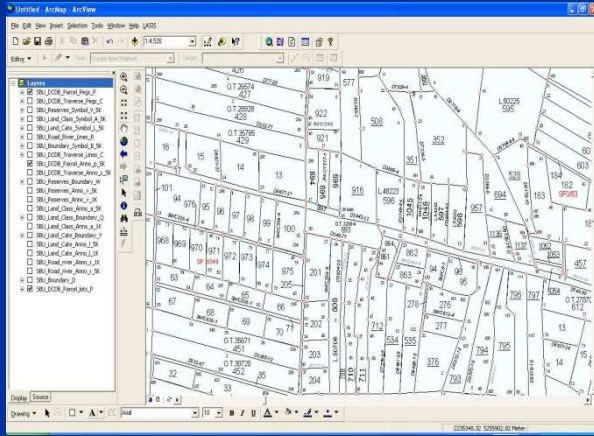
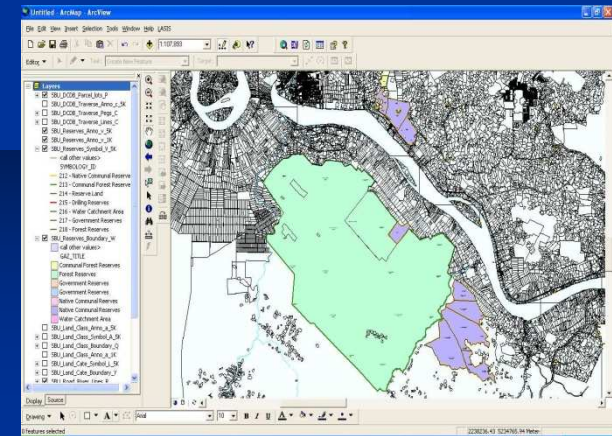
Land Classification



Land Category



Reserves



Parcels

Administrative Boundaries

Survey Controls

68 feature classes

SIBU T.D.
MIXED ZONE LAND
G.N. No. 27/11 of 3.1.49

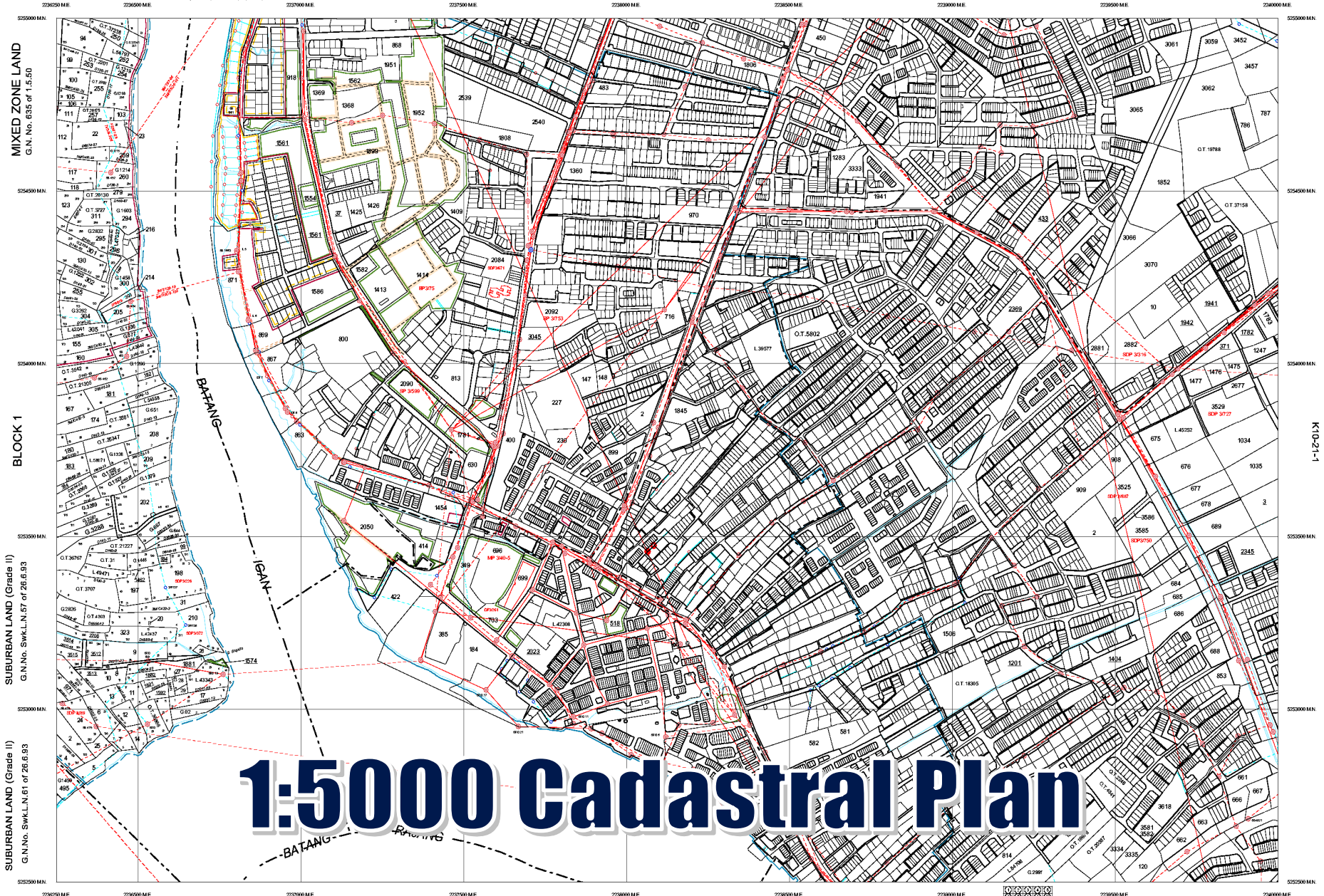
TOWN LAND
G.N. No. 1207 of 8.10.54
Schedule 5

BLOCK 4

K9-24-2

SIBU TOWN LAND EXT. (No.2) (Grade 1)
G.N.No. Swk.L.N.59 of 26.6.93

BLOCK 3



1:5000 Cadastral Plan

BLK. 8



Title Registration System

- ❑ Provide facility to process registration of titles and land instruments.
- ❑ Permit immediate enquiries on Land Titles.
- ❑ Provide facility to create and maintain rent records.
- ❑ Generate statistics for monitoring.
- ❑ Maintenance of data on titles and land instruments.

Total Value of Land Instruments in 2008

No. of Instruments	Value (RM)
98,019	14,011,971,525.40

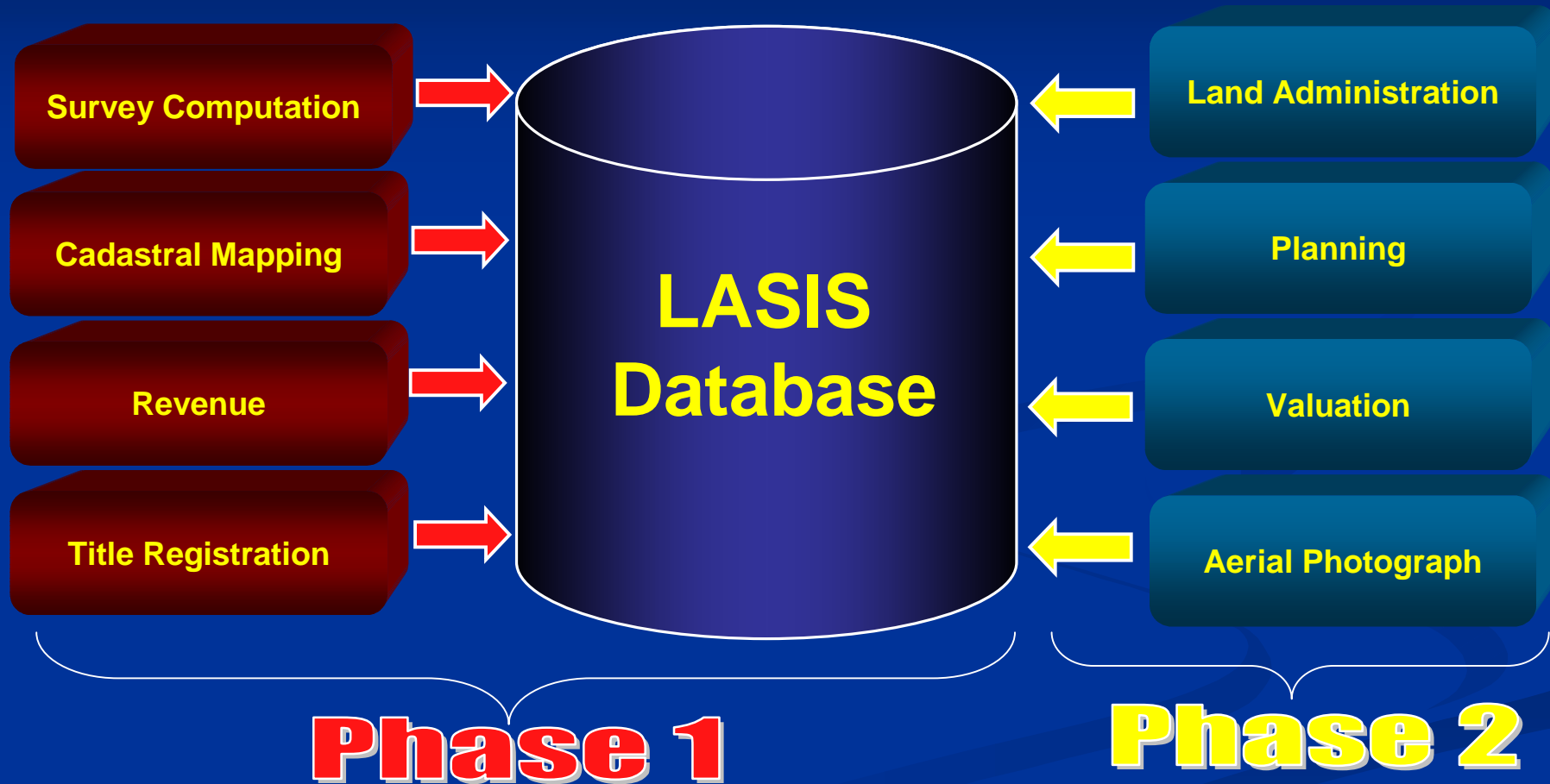
Revenue System

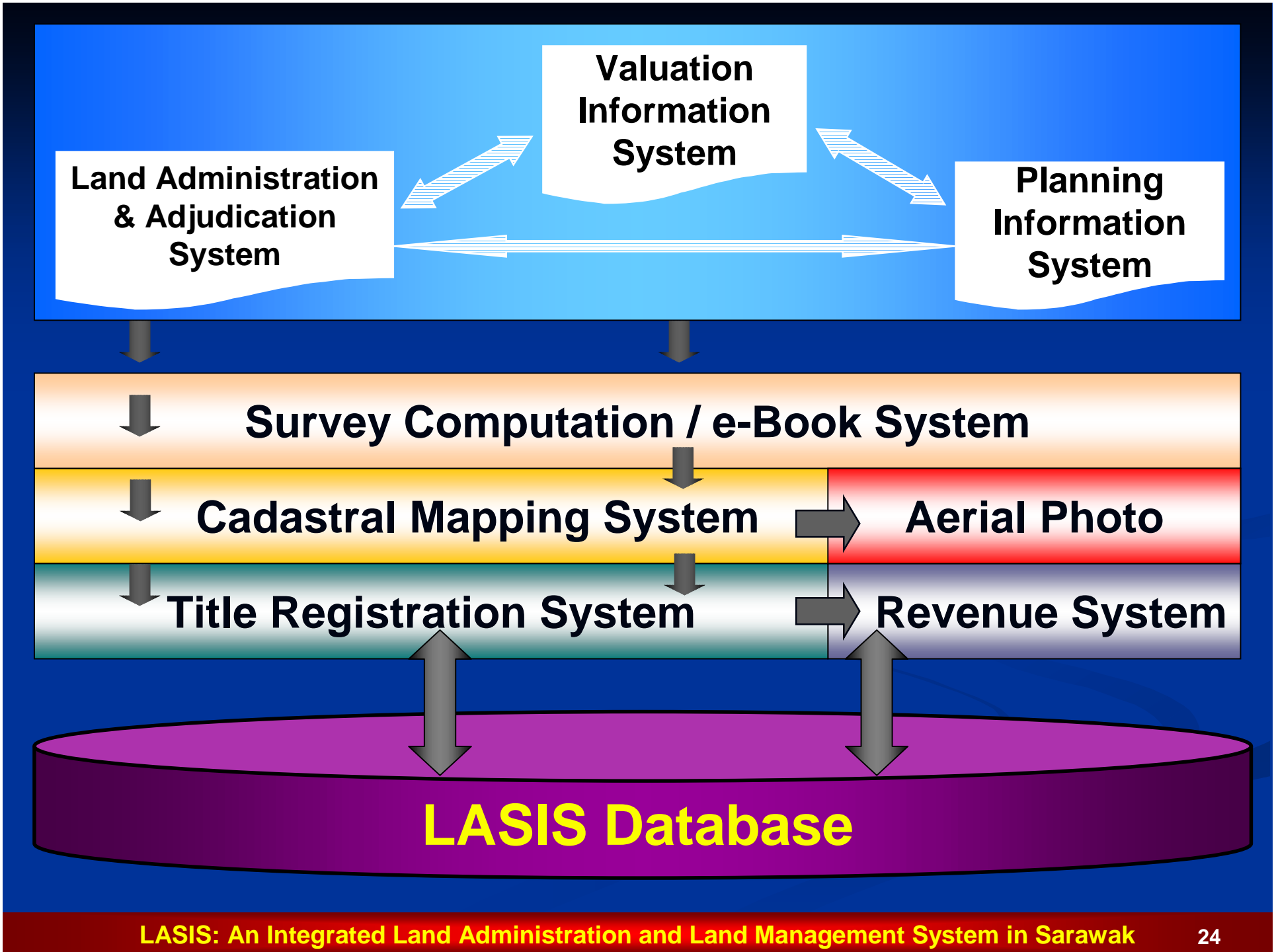
- ❑ Fully automated system except payment collection at the counters
- ❑ Provide on-line payment of land rent & premium.

Rationale

- LASIS Phase 1 – process automation and production of core data
 - Coordinated cadastral system
 - UPI, UPN, TRN
- LASIS Phase 2 – application system optimising core data of LASIS Phase 1

IT Vision - One Department One System





LASIS Phase 2

Integrated System to enhance service delivery in Land Administration

- ❑ Valuation Information System (VIS)
- ❑ Planning Information System (PLIS)
- ❑ Land Administration & Adjudication System (LAAS)
- ❑ Aerial Photograph Information System (APIS)

Land Administration & Adjudication System

- ❑ Facility for processing and monitoring of land applications
- ❑ On-line submission and approval of land application cases between Headquarters and Divisions.
- ❑ Provide data for title preparation.
- ❑ Land Status Checking.

LASIS-GIS@KUCHING, User ID: bebib Activate Job: SJ 0172-2004, LASIS-CMS2004.mxd

File Edit View Insert Selection Tools Window Help

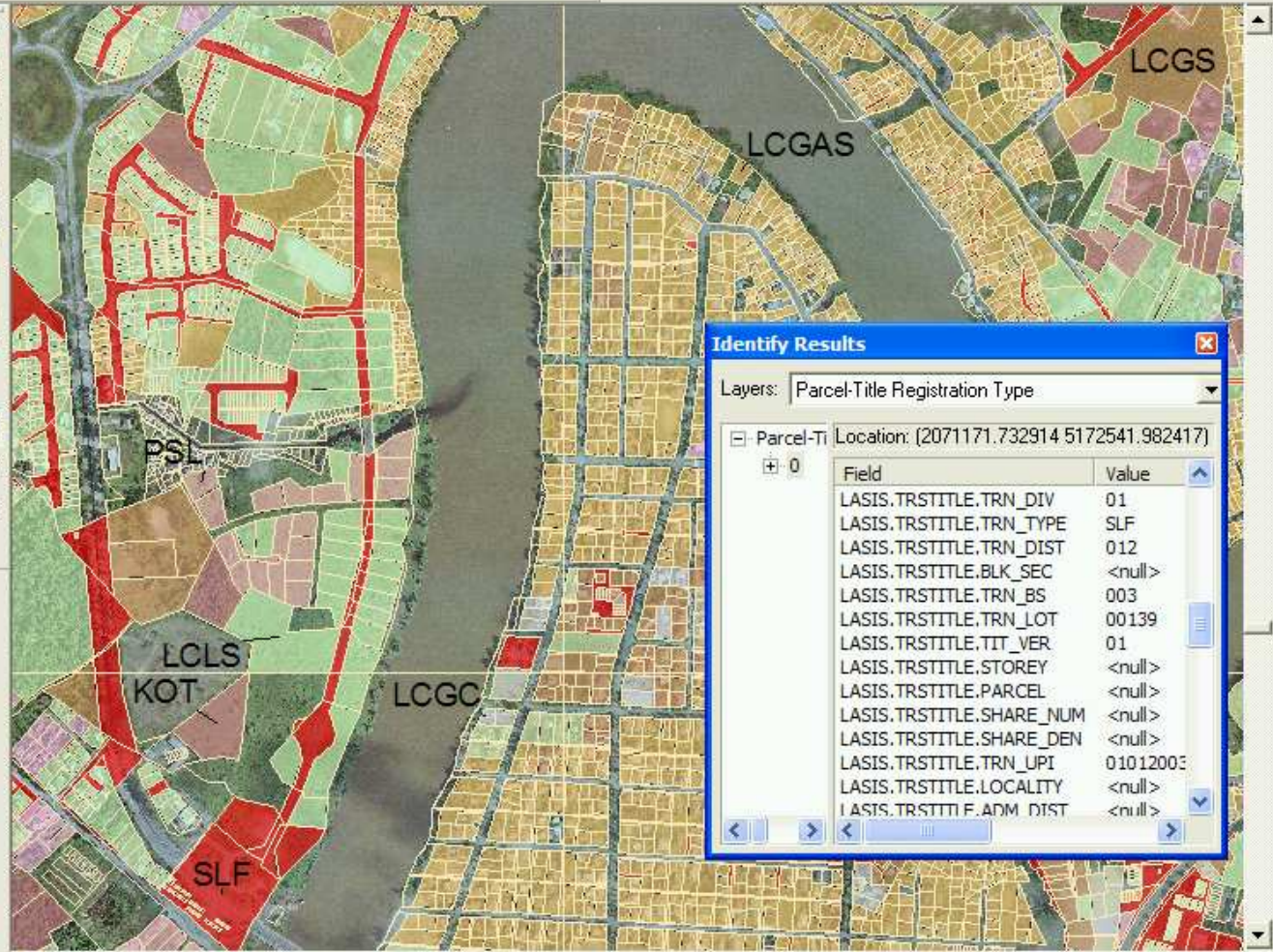
1:10,000

Land Status Selection Lot Information Application Status Development/Gazette

CMS Job Tracking Version Manager Enquiry SPO & Merging Lot Register Compose

CMS GeoDatabase

- SJ0008-2003.MDB
- KUCHING PLIS
- KUCHING CMS_DCDB
- TITLE REGISTRATION
 - Parcel-Title Registration Type
 - <all other values>
 - LASIS.TRSTITLE.TRN_TYPE
 - SLF
 - PSL
 - LSLS
 - LSLC
 - LOT
 - LCPLS
 - LCLS
 - LCLC
 - LCGS
 - LCGC
 - LCGAS
 - KOT
 - CDT
 - BOT
 - <Null>
 - AERIAL PHOTOGRAPH
 - Town Aerial Photo Mosaic Catalog
 - SGDC Administrative



Identify Results

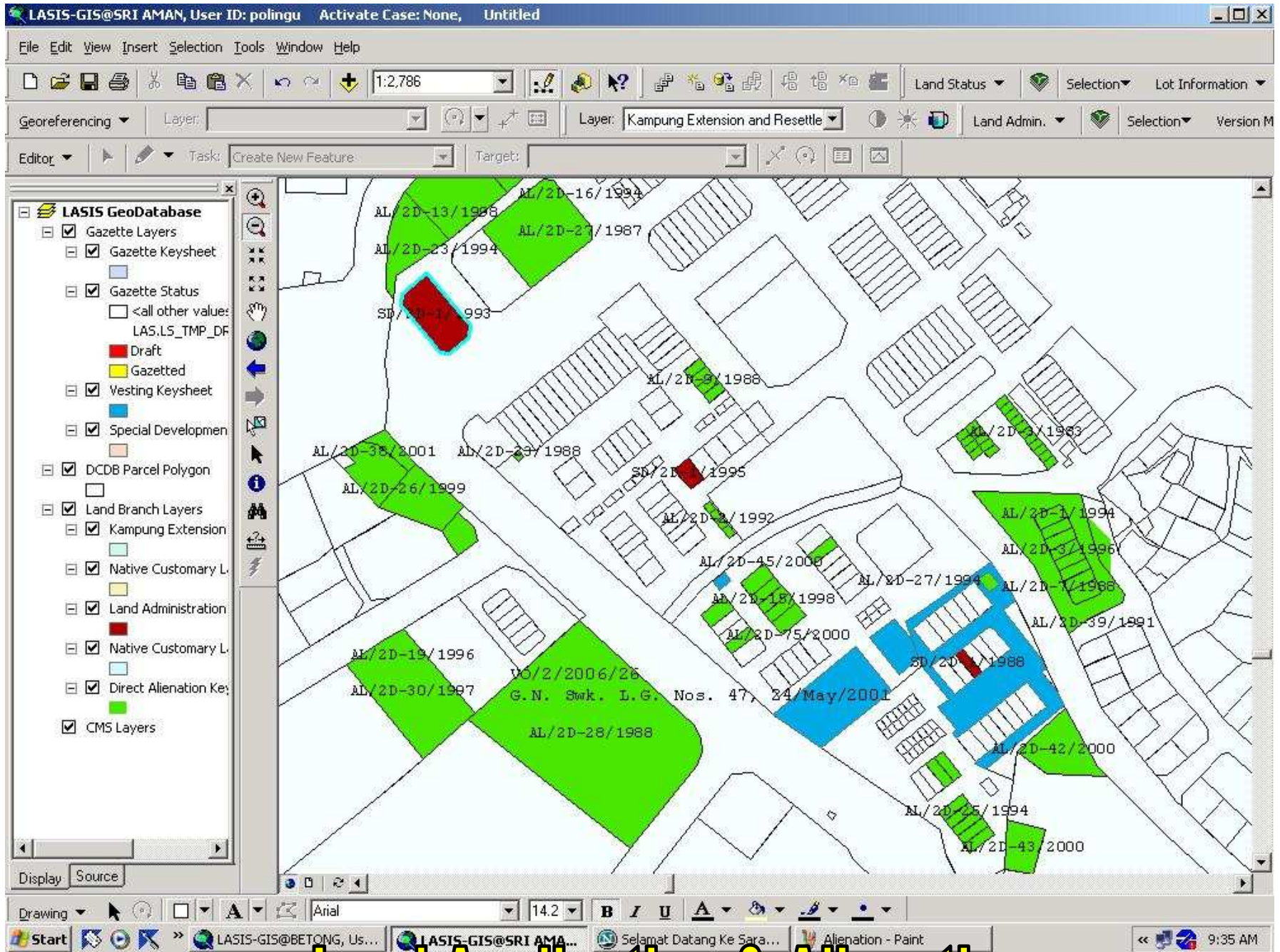
Layers: Parcel-Title Registration Type

Parcel-Ti Location: (2071171.732914 5172541.982417)

Field	Value
LASIS.TRSTITLE.TRN_DIV	01
LASIS.TRSTITLE.TRN_TYPE	SLF
LASIS.TRSTITLE.TRN_DIST	012
LASIS.TRSTITLE.BLK_SEC	<null>
LASIS.TRSTITLE.TRN_BS	003
LASIS.TRSTITLE.TRN_LOT	00139
LASIS.TRSTITLE.TIT_VER	01
LASIS.TRSTITLE.STOREY	<null>
LASIS.TRSTITLE.PARCEL	<null>
LASIS.TRSTITLE.SHARE_NUM	<null>
LASIS.TRSTITLE.SHARE_DEN	<null>
LASIS.TRSTITLE.TRN_LUPI	01012003
LASIS.TRSTITLE.LOCALITY	<null>
LASIS.TRSTITLE.F.ADM_DIST	<null>

Types of Titles

2072460.10 5173689.58 Meter



Land Application & Alienation

Land Status Selection Lot Information Application Status Development/Gazette

Land Admin. Selection Version Manager Application Gazette

Direct.
 Adjudic
 Kampu
 DCDB
 Land C
 Land C
 Land A
 Sibur R
 Sibur R
 Unsurv
 1:5000

TRN:11 - SLF - 030 - 000 - 00067
 Title Type: STATE LAND FOLIO
 (Non-Perpetuity Title - PART IV ENCUMBERED STATE LAND)
 District: SPAOH TOWN DISTRICT
 Section/Block: 000
 Parcel/Lot No: 00067
 Map Sheet No: M8-31-4-16 (6.3)
 Area: 520 m²
 Classification of Land: MIXED ZONE LAND
 Category of Land: TOWN LAND
 Registered Proprietor(s): 1. Name: THE STATE Gender: O
 ICNO: XG -1 Share: 1/1

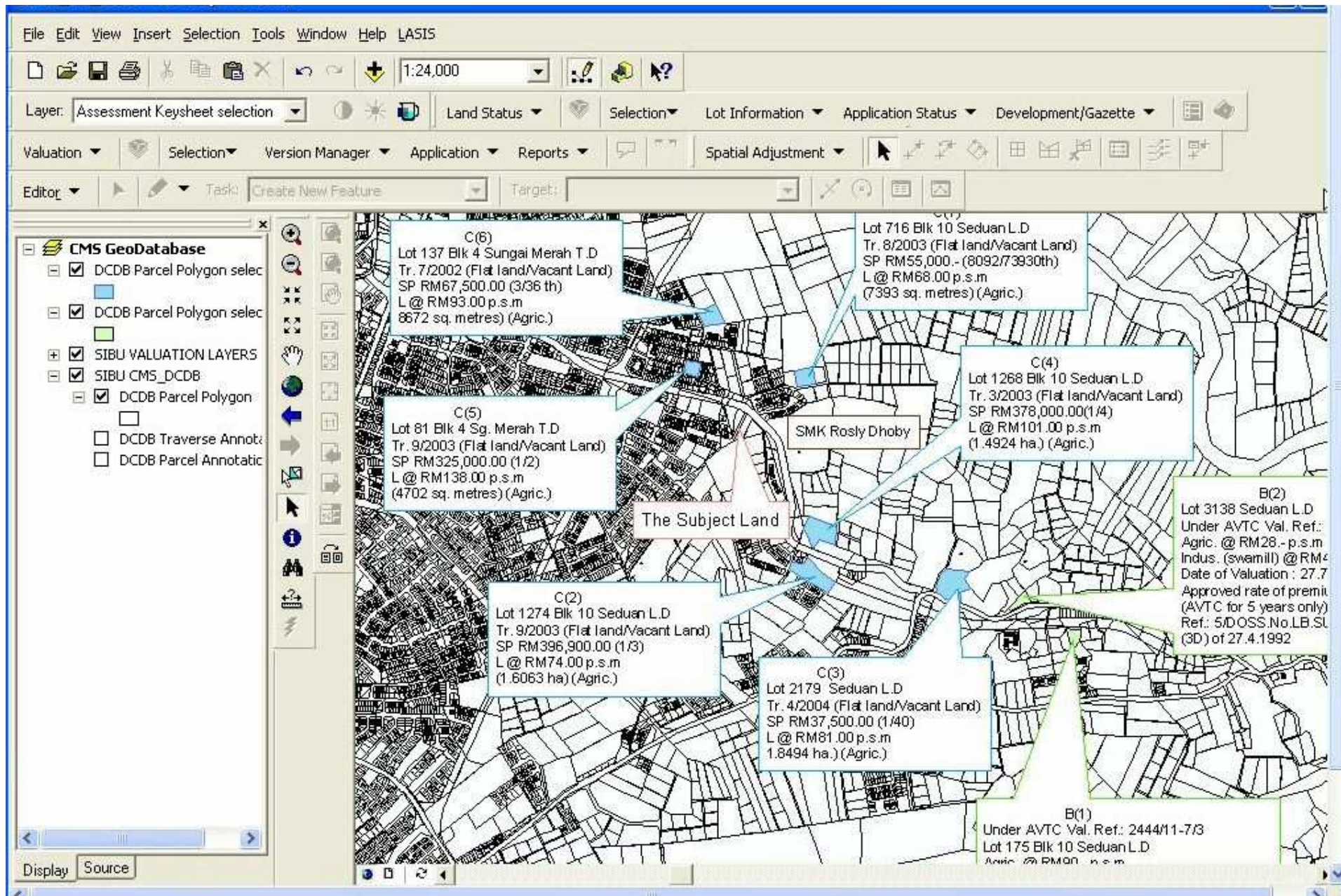
TRN:11 - SLF - 030 - 000 - 00083
 Title Type: STATE LAND FOLIO
 (Non-Perpetuity Title - PART IV UNENCUMBERED STATE LAND)
 District: SPAOH TOWN DISTRICT
 Section/Block: 000
 Parcel/Lot No: 00083
 Map Sheet No: M8-31-4-16 (7.5)
 Area: 9186 m²
 Term:
 Commencement Date: 12/16/1977
 Expiry Date:
 Classification of Land: MIXED ZONE LAND
 Category of Land: TOWN LAND
 Date of Registration: 12/16/1977
 Locality of Land: SPAOH BAZAAR, SPAOH.
 Permitted Use: STATE LAND - NOT SPECIFIED - STATE LAND - NOT SPECIFIED
 Remarks: Carried from part of Lot 44 Spaoth T.D. vide Svy. Job No.265/77.
 Registered Proprietor(s): 1. Name: THE STATE Gender: O
 ICNO: XG -1 Share: 1/1

2199844.28 5160461.72 Meter:

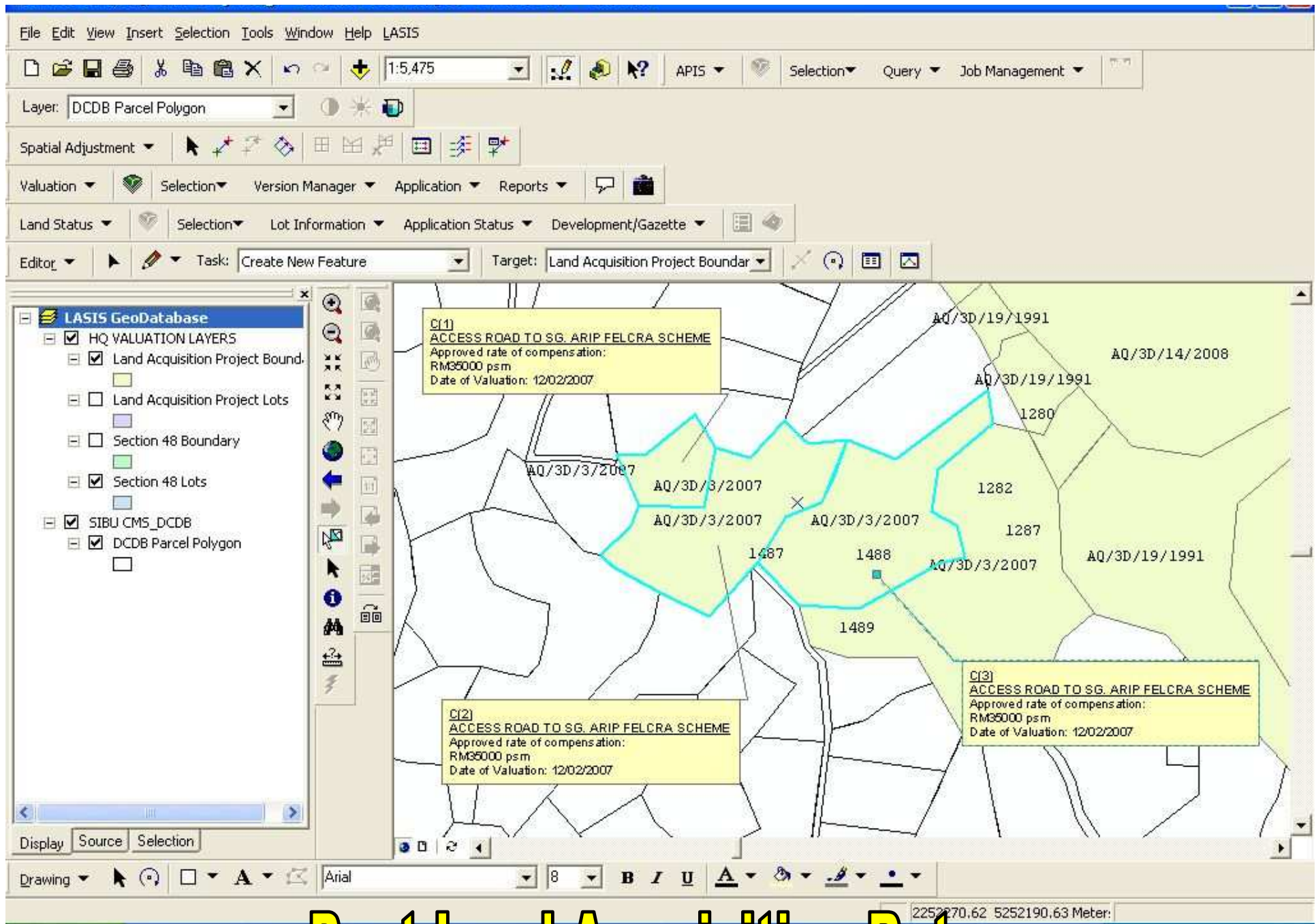
Land Status Checking

Valuation Information System

- ❑ Facility to process land acquisition.
- ❑ Database of land acquired for public purposes.
- ❑ Database pertaining to record of property market transactions.
- ❑ Facility to value landed properties.



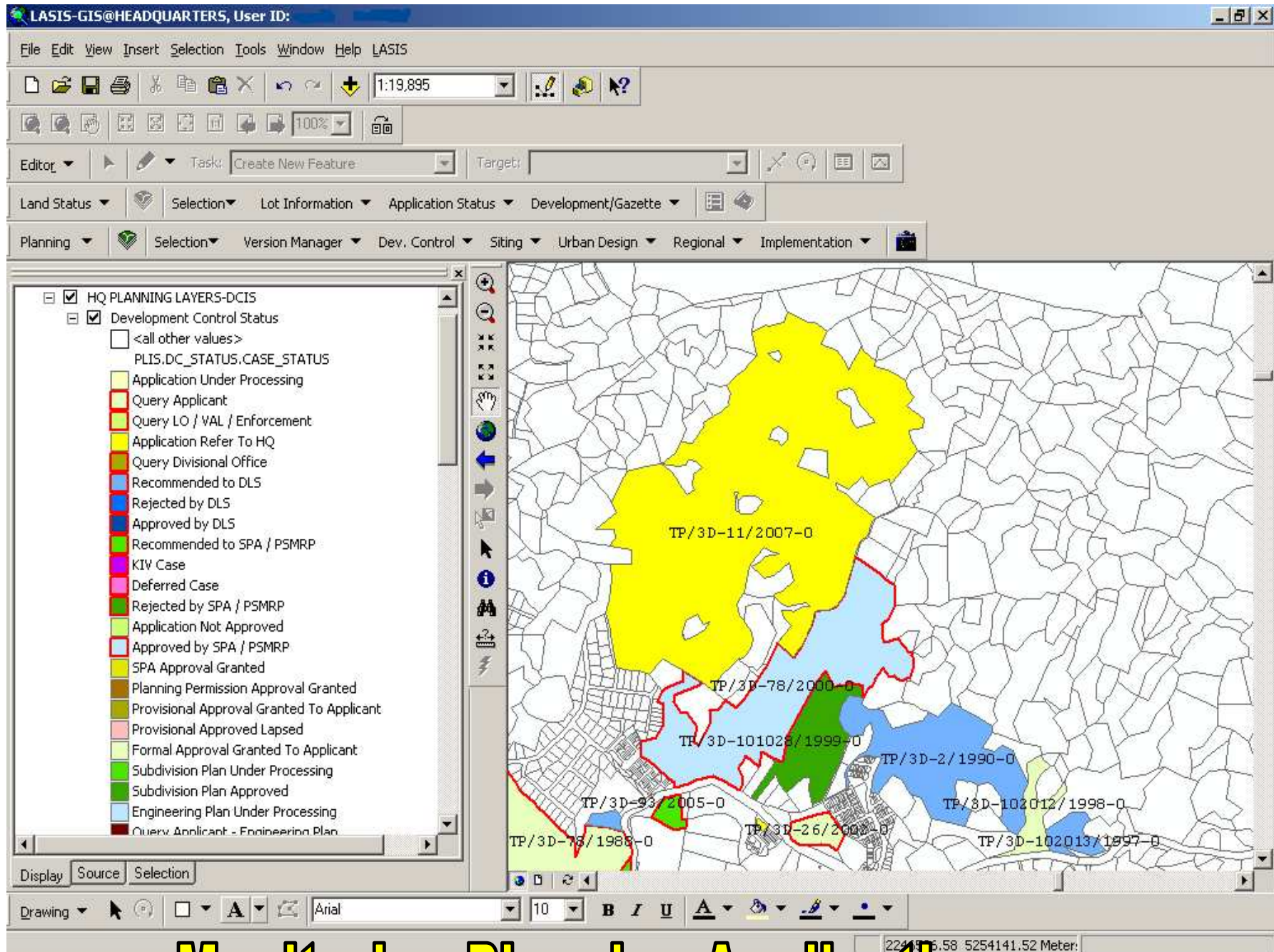
Land Sales Data



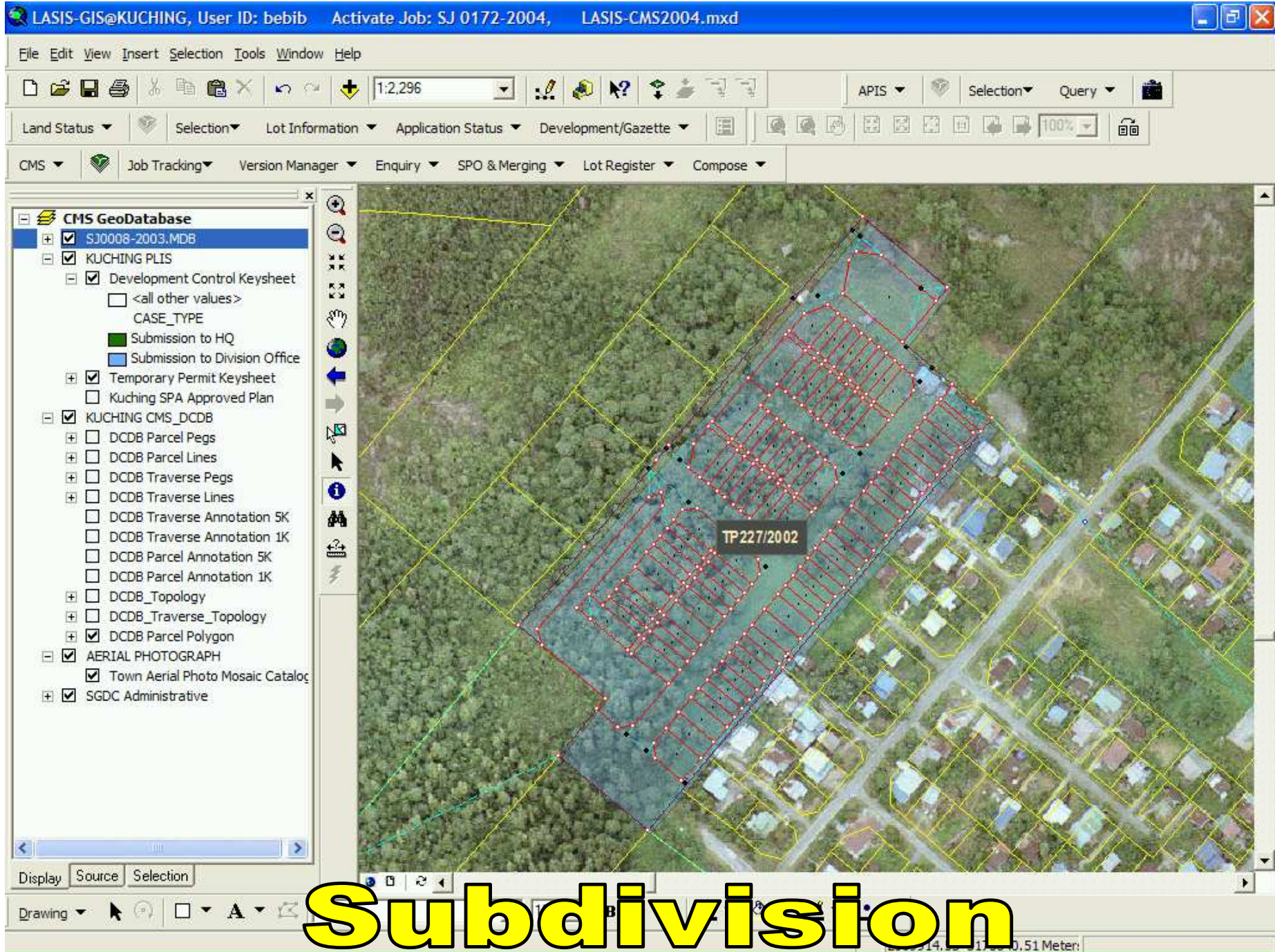
Past Land Acquisition Rates

Planning Information System

- ❑ Process application for development / redevelopment of land
- ❑ Siting of projects
- ❑ Planning and implementation of development projects.
- ❑ Formulate & design Structure Plan, Local Plan, etc.
- ❑ Records of regional, sub-regional, feasibility and EIA studies.



Monitoring Planning Applications



Aerial Photograph Information System

- Setup and maintain a database for Aerial Photographs & Orthophotos.

Superimposition Of Aerial Photograph & Cadastral Lots



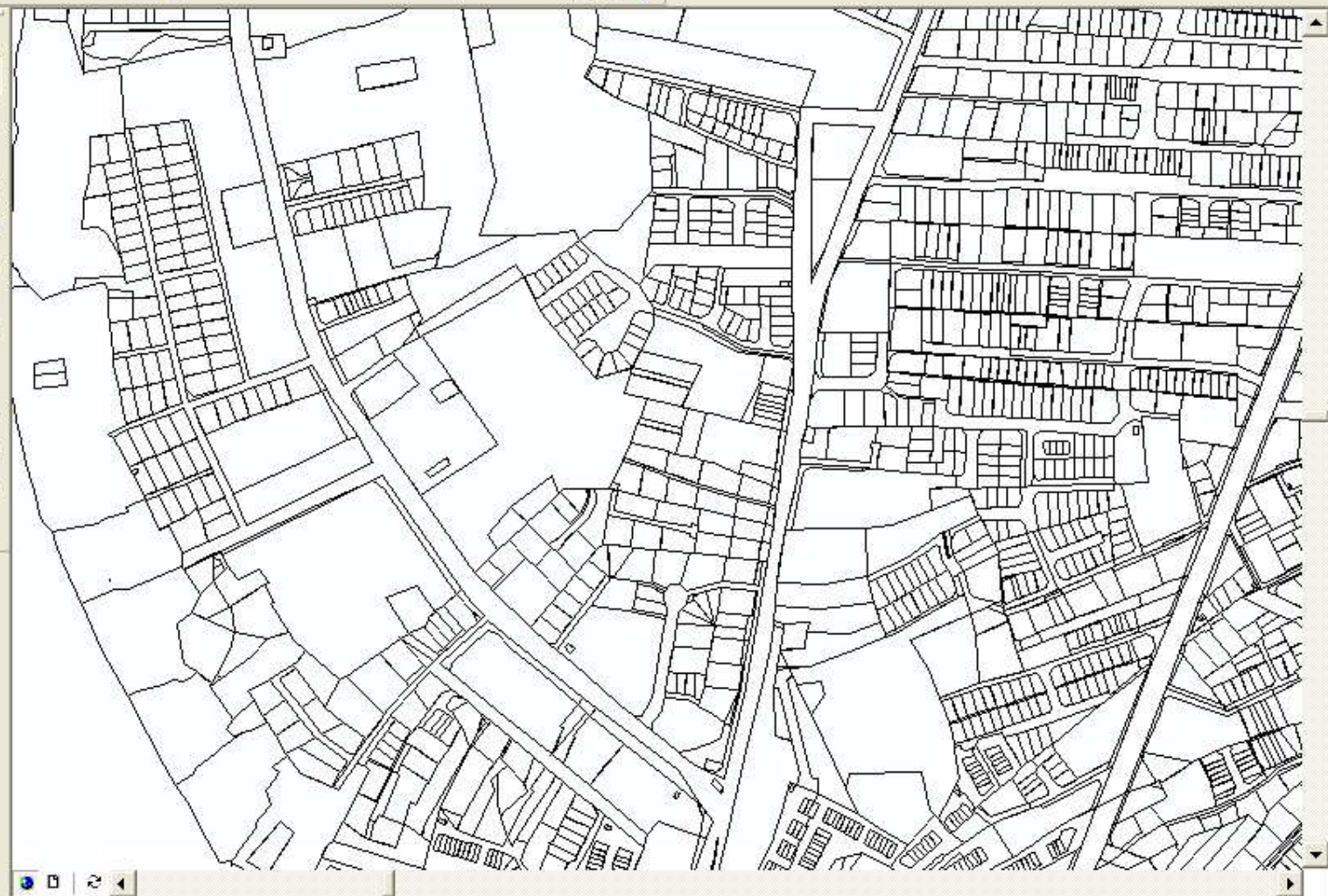
Walk through on System Integration

Cadastral Map

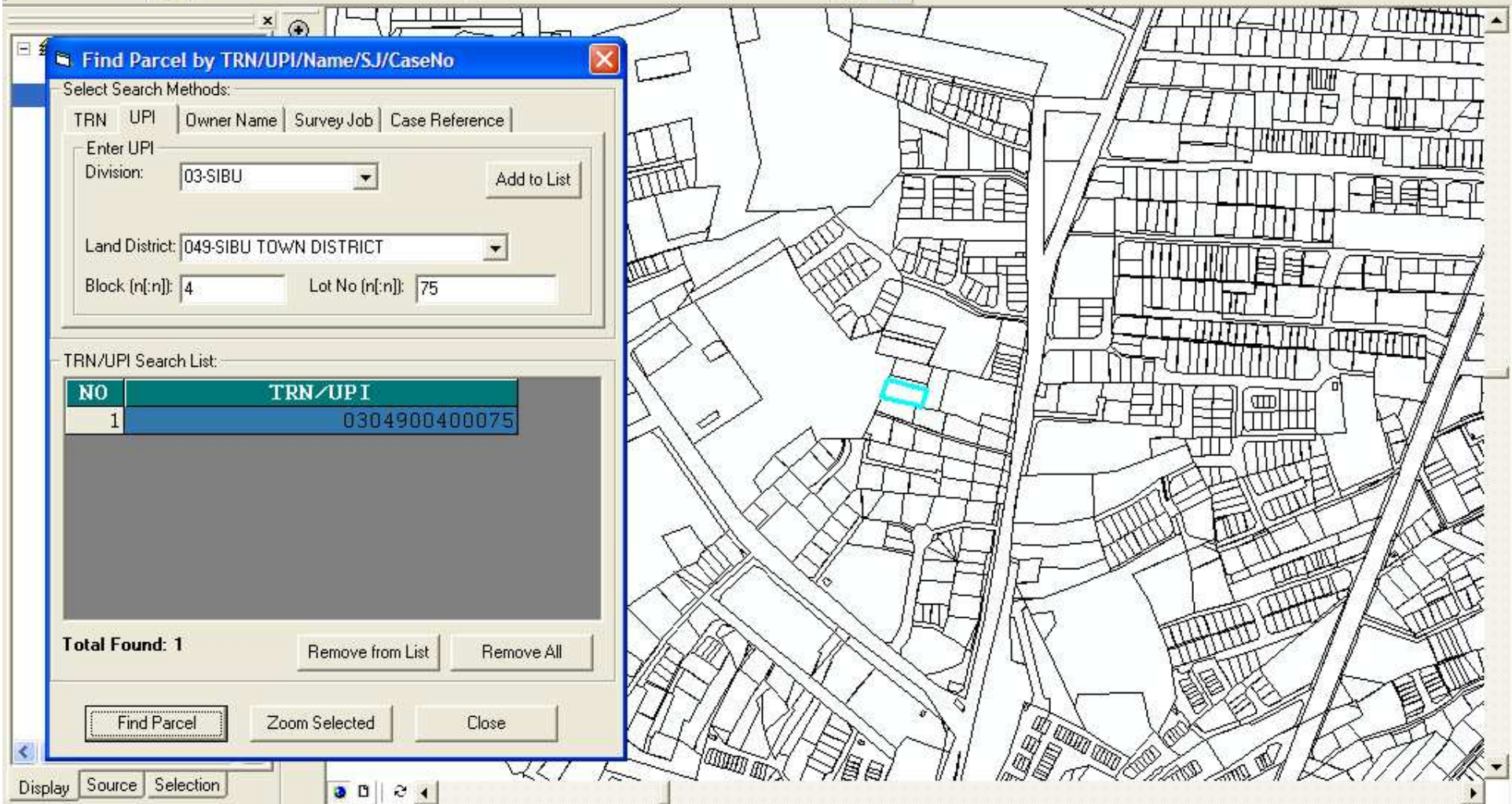
LASIS GeoDatabase

- [-] SIBU CMS_DCDB
 - [-] DCDB Parcel Polygo

Display Source Selection



Search by UPI

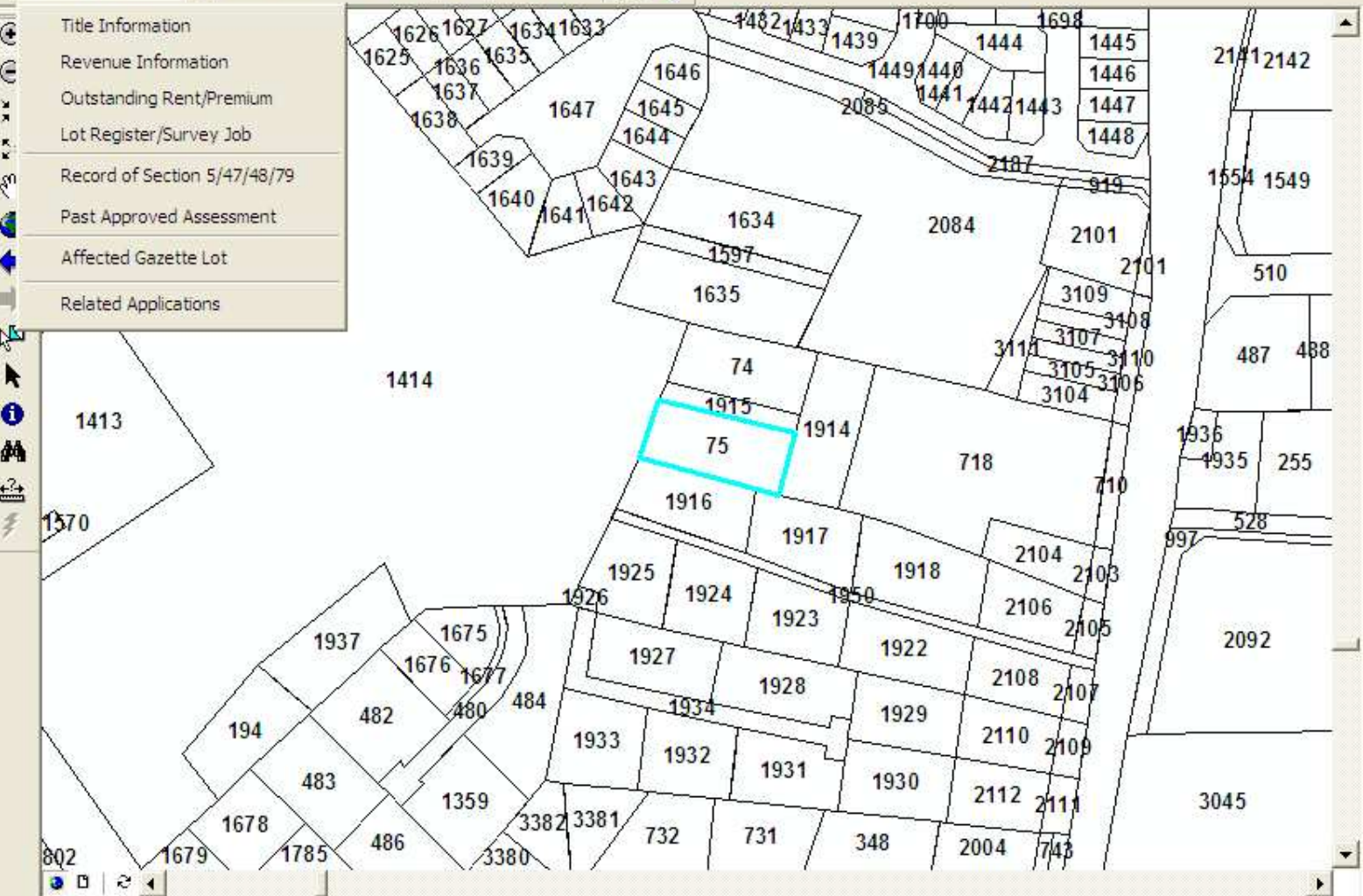


Retrieve Title Data

LASIS GeoDatabase

- DCDB Parcel Polygon
- HQ PLANNING LAYERS-SF
- SIBU CMS_DCDB
- HQ PLANNING LAYERS-D
- Development Control

- Title Information
- Revenue Information
- Outstanding Rent/Premium
- Lot Register/Survey Job
- Record of Section 5/47/48/79
- Past Approved Assessment
- Affected Gazette Lot
- Related Applications



Title Information

TRN : 03-LCGS -049-004-00075
Title Type : GRANT OF STATE LAND
Title Number :
District : SibU Town District
Section/Block Number : 004
Parcel/Lot Number : 00075
Map Sheet Number : K9-24-2-7(6.3) -15562D-
Area : 1,323.00000 Sq. Metres, more or less
Annual Rent : RM 119.00
Term : 942 years
Commencement & Expiry Date : From 24/07/1971 To 31/12/2913
Classification Of Land : Mixed Zone Land
Category Of Land : Town Land
Date Of Registration : 24/07/1971
Locality Of Land : QUEENSWAY, SIBU.

Special Conditions :

- (i) This land is to be used only for the purpose of a dwelling house and necessary appurtenances thereto; and
- (ii) Any alteration to the existing building on this land or any new building to be erected thereon shall be in accordance with plans sections and elevations approved by the Superintendent of Lands and Surveys, Third Division and shall also be in accordance with detailed drawings and specifications approved by the SibU Urban District Council and shall be completed within one (1) year from the date of such approval by the Council.

Registered Proprietor(s):

Name : SHARIKAT MARSING (JOHORE BAHRU) SENDIRIAN BERHAD
Share : 1/1

Transfer, Power of Attorney, Sublease, Charge, Caveat, Etc. :

Nil

Limitation, Easement, Etc & Annotation :

Application for issue of new document of title No. 60/82. Gazette Notification No. 2253 dated 15.07.1982. New issue document of title issued on 16.08.1982.

L-006181/2003 Registered on 13/06/2003 09:15:00

This land is needed for public purpose under Section 48 of the Land Code vide L.6181/2003 of 13.06.2003.

Siting & Land Acquisition

Preview

0304900

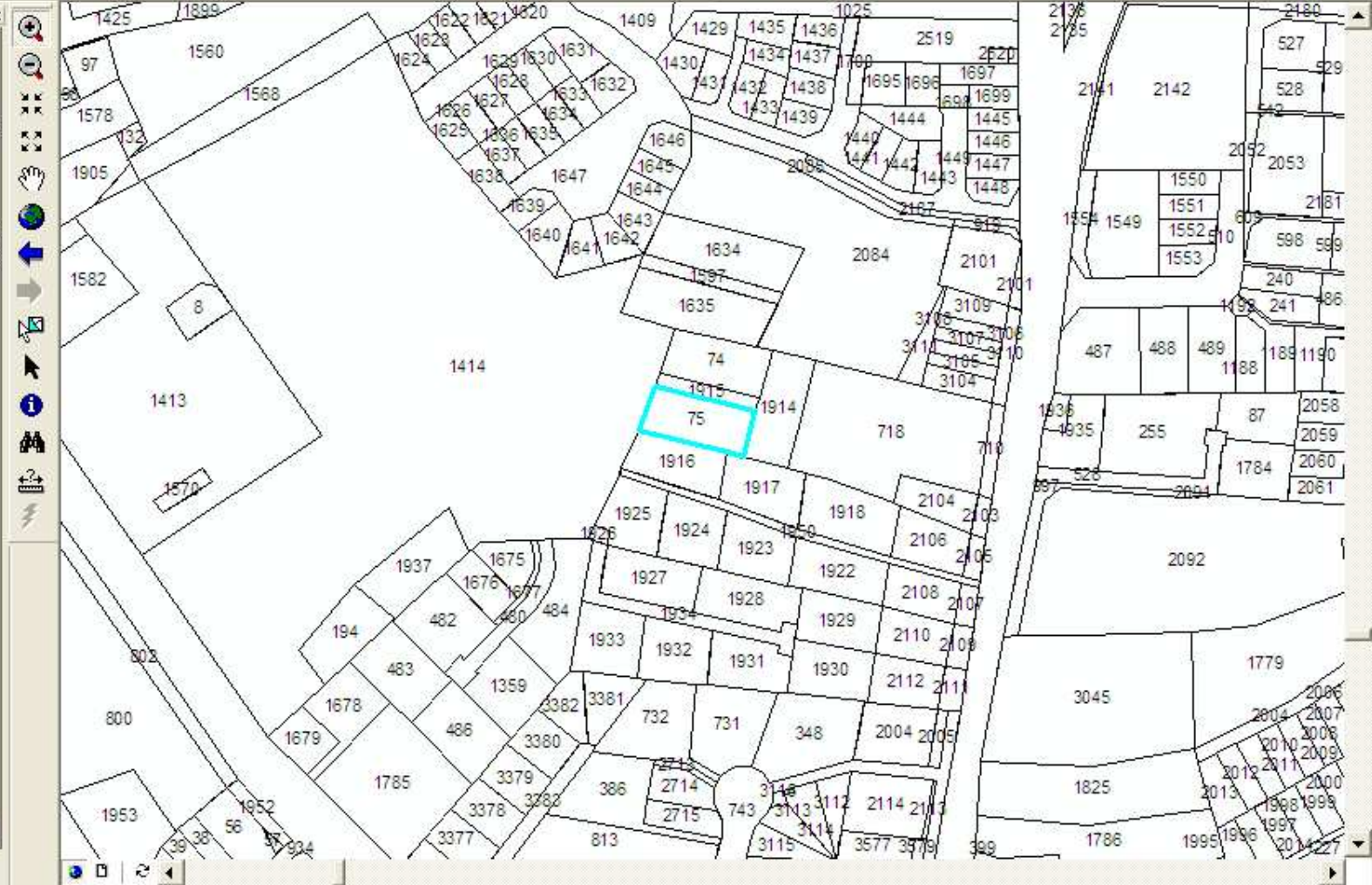
Title No. : Lot 75 Block 4
Case Reference : AQ/3D-1/2003/0
Project Name : POLIKLINIK LAU KING HOWE DAN MAKMAL UBAT DAN STOR BAHAGIAN SIBU
Client Department : JABATAN KESIHATAN MALAYSIA
LAPI : FEDERAL PROJECTS EXCLUDING THE ROADS AND DID DRAINS
Notice Type : SECTION 48 NOTICE
Gazette No. : 989
Approval Date : 17/01/2003
Date Gazetted : 20/03/2003
Land Area : 1,323.00 sq.m

Title No. : Lot 75 Block 4 SIBU TOWN DISTRICT
Case Reference : AQ/3D-1/2003/0
Project Name : POLIKLINIK LAU KING HOWE DAN MAKMAL UBAT DAN STOR BAHAGIAN SIBU
Client Department : JABATAN KESIHATAN MALAYSIA
LAPI : FEDERAL PROJECTS EXCLUDING JKR ROADS AND DID DRAINS
Notice Type : SECTION 48 NOTICE
Gazette No. : 989
Approval Date : 17/01/2003
Date Gazetted : 20/03/2003
Land Area : 1,323.00 sq.m
Area Affected : 1,323.00 sq.m
Registered Proprietor : SHARIKAT MARSING (JOHORE BAHRU) SENDIRIAN BERHAD

Subject Land

LASIS GeoDatabase

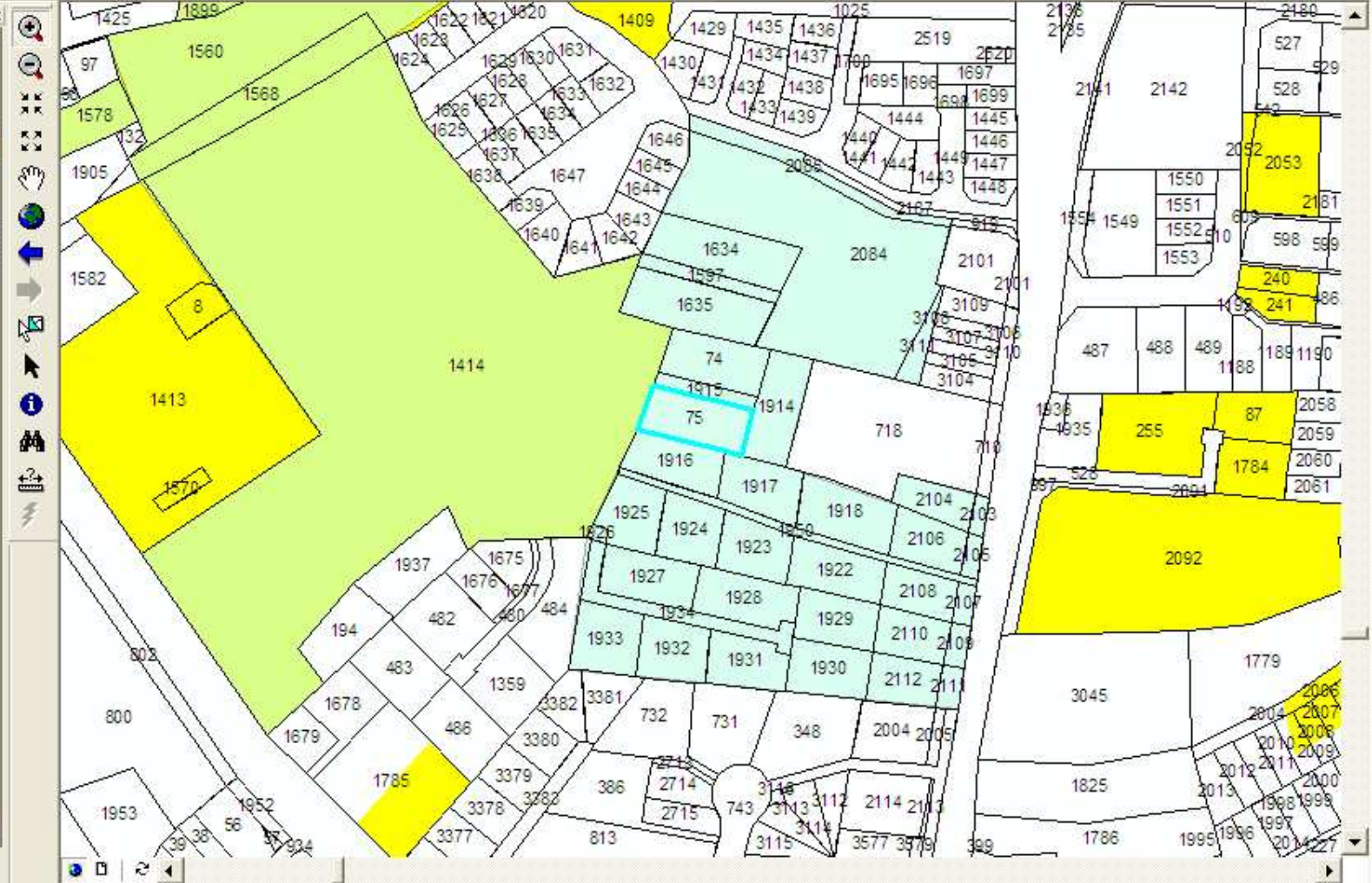
- DCDB Parcel Polygon
- HQ PLANNING LAYERS-1
 - Siting Keysheet
- SIBU CMS_DCDB
- HQ PLANNING LAYERS-2
 - Development Contr
- sibu02.ers
 - RGB Composite
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3



Development Layer Overlay Siting Layer

LASIS GeoDatabase

- DCDB Parcel Polygon
- HQ PLANNING LAYERS-
 - Siting Keysheet
- SIBU CMS_DCDB
- HQ PLANNING LAYERS-
 - Development Contr



Orthophoto Layer

LASIS GeoDatabase

- DCDB Parcel Polygon
 - HQ PLANNING LAYERS-SF
 - Siting Keysheet
 - SIBU CMS_DCDB
 - HQ PLANNING LAYERS-DC
 - Development Control
 - sibu02.ers
 - RGB Composite
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3



Orthophoto Layer

LASIS GeoDatabase

- DCDB Parcel Polygon
 - HQ PLANNING LAYERS-SF
 - Siting Keysheet
 - SIBU CMS_DCDB
 - HQ PLANNING LAYERS-DC
 - Development Control
 - sibu02.ers
 - RGB Composite
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3



Orthophoto Layer

LASIS GeoDatabase

- DCDB Parcel Polygon
 - HQ PLANNING LAYERS-SF
 - Siting Keysheet
 - SIBU CMS_DCDB
 - HQ PLANNING LAYERS-DC
 - Development Control
 - sibu02.ers
 - RGB Composite
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3



Achievements

- Integrated System
- Inspired People
- Innovated Processes
- Improved Service Delivery
 - 1 day registration
 - Resource utilization

Lessons Learned

- ❑ Management commitment and participation
- ❑ Standards and policies - data integrity
- ❑ BPR to optimize IT
- ❑ Standardization for process automation
- ❑ Establish Base Data Infrastructure
- ❑ Data modeling
- ❑ Clear user requirements
- ❑ Ability to embed business intelligence and analytics

What's Next ?

□ Web Services

- Survey Services
- Sale of Plans
- Lodgment of Land Instruments
- Land Title Search



**LASIS : An Integrated Land Administration
and Land Management System
in Sarawak**

Terima Kasih

“Experience shows that successful land administration systems have all the land administration functions within *one government organization*. There should be one government department responsible for the land administration infrastructure in a country. This means that at the very least the administration of cadastral surveying and mapping, land registration and valuation, are all in the one organization. However global trends indicate the most successful systems also include all topographic mapping in the same organization.”

- *Extracted from Ian P. Williamson, Best Practices for Land Administration Systems for Developing Countries.*