LEVERAGING E-CADASTRE FOR NATIONAL ECONOMIC TRANSFORMATION

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Cadastral Division, JUPEM
Malaysia
Malaysia has progressed from an economy dependant on agriculture and primary commodities to a manufacturing based, export driven economy.

To move the country forward the Government has crafted a framework comprising four (4) pillars to drive the change.
VISION 2020
Aspiring to Achieve Developed and High-income Nation Status
1 NATIONAL TRANSFORMATION PROGRAMME

NATIONAL KEY RESULTS AREAS (NKRA"

- REDUCING CRIME
- FIGHTING CORRUPTION
- ASSURING QUALITY EDUCATION
- RAISING LIVING STANDARDS OF LOW-INCOME HOUSEHOLDS
- IMPROVING URBAN PUBLIC TRANSPORT
- IMPROVING RURAL DEVELOPMENT
- ADDRESSING THE RISING COST OF LIVING

NATIONAL KEY ECONOMIC AREAS (NKEAs)

- OIL, GAS & ENERGY
- PALM OIL & RUBBER
- FINANCIAL SERVICES
- TOURISM
- BUSINESS SERVICES
- ELECTRONICS & ELECTRICAL
- WHOLESALE & RETAIL
- EDUCATION
- HEALTHCARE
- COMMUNICATIONS CONTENT & INFRASTRUCTURE
- AGRICULTURE
- GREATER KUALA LUMPUR / KLANG VALLEY

STRATEGIC REFORM INITIATIVES (SRIs)

- COMPETITION, STANDARDS AND LIBERALISATION
- PUBLIC FINANCE REFORM
- PUBLIC SERVICE DELIVERY
- NARROWING DISPARITIES
- REDUCING GOVERNMENT'S ROLE IN BUSINESS
- HUMAN CAPITAL DEVELOPMENT
The 12 NKEA's

- Oil, Gas and Energy
- Palm Oil & Rubber
- Financial Services
- Tourism
- Business Services
- Electronics & Electrical
- Wholesale & Retail
- Education
- Healthcare
- Communications Content and Infrastructure
- Agriculture
- Greater Kuala Lumpur/ Klang Valley
Digital Malaysia

- Web Based
- Fast Delivery System
- NSDI Marine
- Customers Need
- Spatial data
- MaCGDI
- Data Dissemination
- Mobile Technology
- Utility DB
- Global Trend
TOWARDS A SPATIALLY ENABLED GOVERNMENT

SPATIALLY ENABLED TECHNOLOGY

GPS/GNSS
Total Station
Ground/Airborne
Laser Scanning
Technology
Ocean Mapping
Systems
Satellite Imagery
Airborne Sensors
(Radar/Gravity/
Magnetic)
Space borne Sensors
(Radar /Altimetry/Etc)

SPATIALLY ENABLED PLATFORM

National Geospatial
Data Centre (NGDC)
State Geospatial Data
Centre(SGDC)
Local Geospatial Data
Centre (LGDC)
National Digital
Cadastral Database
(NDCDB)
Multi Purpose
Cadastre
PADU
Marine Geospatial
Data Centre (MGDC)

SPATIALLY ENABLED SYSTEM

Utility Information System
Land Administration
System (eTANAH)
G4NRE, MyLIIS, G4E
Planning Information
System
GIS System For Local
Authorities
Environmental
Management System
Defense GIS System
Coastal And Marine
Geoinformation System

SPATIALLY ENABLED GOVERNMENT

Economic Development
Land Administration
Public Works
Urban & Regional
Planning
Real Estate And
Facilities Management
National Security
Public Safety
Tourism
Integrated Coastal Zone
Management (ICZM)
Sustainable
Development

BASE MAP (NDCDB/Utility/Mapping)
NATIONAL GEOSPATIAL REFERENCE FRAME (MyRTKnet/MyGeoid)
Leveraging eKadaster for boosting the economy of Malaysia via the National Economic Transformation Programme
Federal Department of Survey and Mapping

State

Torrens System

CLRS

Cadastral Survey

eKADASTER

Data Integration

Land & Mines Office

Licensed Surveyors

Land Office
Benefits of Cadastral & Land Survey to the nation

- Guarantees an indefeasible title to those included in the register
- Conclusive proof that the person mentioned in Title is the owner of the land
- Reduces disputes and confirm quality by survey and demarcation
- Lowering the risk of investment
- Facilitate development of new township
- Increase business and investment
The Cadastral Survey Reform
The System Reformation

Conventional

Electronic
(Semi Automated)

Digital
(Fully Digital)
**Objective Reformation: Expediting Cadastral Services**

**Qualified Titles**
- Introduced in 1965
- To cater Cadastral Survey rising demands
- Issuance of title in advance of final survey
- Supports vibrant land market
- Instigating more land ownership units (QT) than surveyed land parcels (FT)

**Pre Comp Plans**
- Under NLC, Pre Comp Plans is prepared to show the intended new boundaries and areas of those lots which are based on computation from existing survey
- Promote Land development planning, land dealings and prevent encroachment

**Digital environments**
- Replacing conventional processing method phase by phase as early as 1985
- The digital environment concept gradually extended from Field to Finish
Modernisation Programmes

Computer Assisted Land Survey System (CALS)
- CALS Johor in 1985
- CALS Pahang in 1990

To create Digital Cadastral Database (DCDB)
- To computerise computation and plan drafting
- To facilitate fast production and updating of cadastral maps.

Three (3) main Components:
- Cadastral Data Management System (SPDK)
- District Survey Offices Automation System (SAPD)
- Total Station Survey System (STS)

A study on Coordinate based technologies such as least square adjustment, GIS and GNSS.
INTEGRATION WITH eTANAH

JUPEM

eKadaster 2007-2009

01 May 2010
Fully Digital Realtime Submission

Land Office

eTanah Pilot Project in Penang 2005-2008

01 Jan 2011
Roll-Out Whole Country

Jan 2012
eTanah Fully Implemented

January 2012
Land Information Malaysia
Impact of eKadaster in boosting Malaysian economic growth by:

- Expedite the Cadastral Survey delivery system
- Increasing FT registration;
- Crown Jewel: National Digital Cadastral Database;
  - Planning tool for land or property development
  - Accurate base maps for asset investment
- Ease of registering property
- Ease of doing business in Malaysia
- Competitiveness in economy performance
- Boost property demand and value
eKadaster

**National Digital Cadastral Database (NDCDB)**

- Expedite the Cadastral Survey delivery system
- **Innovation in Cadastral Survey dealings**
- **Survey Accurate Coordinate**
- **Base maps for GIS system**
- **Increased Issuance of Final Titles**
- **Seamless and homogenous Cadastral Survey information**
- **Survey Accurate Spatial Analysis**
- **Accurate base maps**
- **Proper enforcement**
- **Better management**
- **Assist train alignment**
- **Facilitate the design, actual work and as built work**
- **Accurate spatial planning**
- **New land developments and township planning**

**Facilitates High Impact Projects**

- **Mass Rapid Train (MRT)**
- **Double Track Railway**
- **2\(^{nd}\) bridge Penang**
- **Iskandar development Region**
## Numbers of Surveyed Lots with eKadaster environment

<table>
<thead>
<tr>
<th>STATES</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Lot)</td>
<td>(Lot)</td>
<td>(Lot)</td>
<td>(Lot)</td>
<td>(Lot)</td>
<td>(Lot)</td>
</tr>
<tr>
<td>Johor</td>
<td>5,462</td>
<td>6,406</td>
<td>9,775</td>
<td>8,560</td>
<td>10,000</td>
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<tr>
<td>Kedah</td>
<td>5,778</td>
<td>7,412</td>
<td>5,976</td>
<td>5,939</td>
<td>6,250</td>
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<tr>
<td>Kelantan</td>
<td>1,539</td>
<td>2,838</td>
<td>5,976</td>
<td>6,490</td>
<td>6,580</td>
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<tr>
<td>Melaka</td>
<td>7,557</td>
<td>9,796</td>
<td>1,086</td>
<td>2,107</td>
<td>1,600</td>
</tr>
<tr>
<td>N. Sembilan</td>
<td>4,813</td>
<td>4,814</td>
<td>2,847</td>
<td>3,441</td>
<td>3,104</td>
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<tr>
<td>Pahang</td>
<td>4,175</td>
<td>4,847</td>
<td>5,158</td>
<td>5,757</td>
<td>4,600</td>
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<tr>
<td>Perak</td>
<td>765</td>
<td>1,539</td>
<td>5,942</td>
<td>7,248</td>
<td>7,200</td>
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<tr>
<td>Perlis</td>
<td>451</td>
<td>749</td>
<td>2,298</td>
<td>2,219</td>
<td>2,200</td>
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<tr>
<td>P. Pinang</td>
<td>5,861</td>
<td>5,723</td>
<td>1,807</td>
<td>692</td>
<td>632</td>
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<tr>
<td>Selangor</td>
<td>4,322</td>
<td>7,593</td>
<td>5,673</td>
<td>3,919</td>
<td>4,220</td>
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<tr>
<td>Terengganu</td>
<td>320</td>
<td>155</td>
<td>8,049</td>
<td>8,990</td>
<td>9,200</td>
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<tr>
<td>WP KL/Putrajaya</td>
<td>1,012</td>
<td>2,130</td>
<td>352</td>
<td>253</td>
<td>243</td>
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<tr>
<td>WP Labuan</td>
<td>2,512</td>
<td>728</td>
<td>68</td>
<td>149</td>
<td>140</td>
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<td><strong>TOTAL</strong></td>
<td><strong>44,567</strong></td>
<td><strong>54,730</strong></td>
<td><strong>55,007</strong></td>
<td><strong>55,764</strong></td>
<td><strong>55,969</strong></td>
</tr>
</tbody>
</table>

Source: JUPEM
### DCDB / NDCDB Users (Government Agencies)

<table>
<thead>
<tr>
<th>No</th>
<th>Government Agencies Users</th>
<th>Year</th>
<th>Waived (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Department of Irrigation and Drainage Malaysia</td>
<td>2006</td>
<td>482,032.00</td>
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<tr>
<td>2</td>
<td>Ministry of Health</td>
<td>2007</td>
<td>156,696.80</td>
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<tr>
<td>3</td>
<td>Election Commision of Malaysia</td>
<td>2008</td>
<td>3,112,969.50</td>
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<tr>
<td>4</td>
<td>State Land and District Office</td>
<td>2009</td>
<td>3,060,088.00</td>
</tr>
<tr>
<td>5</td>
<td>National Solid Waste Department</td>
<td>2010</td>
<td>1,912,051.00</td>
</tr>
<tr>
<td>6</td>
<td>Valuation and Property Services Department</td>
<td>2011</td>
<td>1,602,880.00</td>
</tr>
<tr>
<td>7</td>
<td>University Technology MARA</td>
<td>2012</td>
<td>3,165,502.20</td>
</tr>
<tr>
<td>8</td>
<td>University Putra Malaysia</td>
<td>2013</td>
<td>674,859.10</td>
</tr>
<tr>
<td>9</td>
<td>Department of Town and Country Planning Peninsular Malaysia</td>
<td>Total</td>
<td>14,167,079.60</td>
</tr>
<tr>
<td>10</td>
<td>Department of Agriculture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Kuala Lumpur City Hall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Malaysian Remote Sensing Agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Ministry of Federal Territories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Local Authorities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Department of Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Prime Minister’s Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Ministry of Rural and Regional Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Ministry of Home Affairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Malaysia Centre of Geospatial Data Infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Department of Director General of Land and Mines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Department of Mineral and Geoscience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Ministry of the Federal Territories and Urban Well-being</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Public Work Department</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Forestry Department Peninsular Malaysia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>University Technology Malaysia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>And others</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: JUPEM

Waived charges are given to Government Agencies for public-based development.
Significant of NDCDB

GIS Basemap

Empower user’s existing GIS system

Decision Making Tool

Analysis Tool

Spatially Enabler
Samples of application optimising NDCDB

Source: DBKL GIS
Safe City Monitoring System

Safe City Monitoring System: A Malaysia First in Crime Prevention

PUTRAJAYA, 1 APRIL 2011 - Despite seeing street crime and the overall index crime dropped by 35 percent and 15 percent respectively in 2010, efforts are still on-going to ensure that crime prevention initiatives under the Government Transformation Programme (GTP)'s National Key Results Area (NKRA) are on track and sustainable.

To do this, the government through the Federal Department of Town and Country Planning of the Ministry of Housing and Local Government has received an allocation of RM36 million in 2010 from the Ministry of Home Affairs to reactivate and expand the Safe City Programme or SCP (identified as one of the enablers in street crime prevention which was introduced in 2004) in 12 local authorities to reduce street crime.

The twelve local councils have been selected based on the crime rate by area (hotspots) provided by the police (Polis Diraja Malaysia). The councils are: Dewan Bandaraya Kuala Lumpur (DBKL), Majlis Bandaraya Shah Alam (MBSA), Majlis Bandaraya Petaling Jaya (MBPJ), Majlis Perbandaran Subang Jaya (MPSJ), Majlis Perbandaran Ampang Jaya (MPAJ), Majlis Perbandaran Selayang (MPS), Majlis Perbandaran Klang (MPK), Majlis Bandaraya Johor Bahru (MBJB), Majlis Perbandaran Johor Bahru Tengah (MPJBT), Majlis Perbandaran Pasir Gudang (MPPG), Majlis Perbandaran Pulau Pinang (MPPP) and Majlis Perbandaran Seberang Perai (MPSP).
Geospatial Data: Reducing Crime
Samples of application optimising NDCDB
## Increased property demand

### Existing Space and Occupancy Rate for Commercial Buildings as at Q3 2013

<table>
<thead>
<tr>
<th>State</th>
<th>Total Space (s.m)</th>
<th>Occupancy Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shopping Complex</td>
<td>Purpose-Built Office (Private Building)</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>2,409,996</td>
<td>7,114,689</td>
</tr>
<tr>
<td>W.P. Putrajaya</td>
<td>68,503</td>
<td>202,756</td>
</tr>
<tr>
<td>W.P. Labuan</td>
<td>26,063</td>
<td>49,120</td>
</tr>
<tr>
<td>Selangor</td>
<td>2,969,057</td>
<td>2,761,078</td>
</tr>
<tr>
<td>Johor</td>
<td>1,685,457</td>
<td>659,908</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>1,479,114</td>
<td>842,196</td>
</tr>
<tr>
<td>Perak</td>
<td>723,294</td>
<td>236,241</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>382,551</td>
<td>124,790</td>
</tr>
<tr>
<td>Melaka</td>
<td>363,797</td>
<td>208,461</td>
</tr>
<tr>
<td>Kedah</td>
<td>425,242</td>
<td>153,787</td>
</tr>
<tr>
<td>Pahang</td>
<td>259,315</td>
<td>179,339</td>
</tr>
<tr>
<td>Terengganu</td>
<td>106,984</td>
<td>108,315</td>
</tr>
<tr>
<td>Kelantan</td>
<td>222,854</td>
<td>170,821</td>
</tr>
<tr>
<td>Perlis</td>
<td>69,605</td>
<td>40,501</td>
</tr>
<tr>
<td>Sabah</td>
<td>532,782</td>
<td>497,895</td>
</tr>
<tr>
<td>Sarawak</td>
<td>612,029</td>
<td>414,268</td>
</tr>
<tr>
<td><strong>Malaysia</strong></td>
<td><strong>12,336,643</strong></td>
<td><strong>13,764,165</strong></td>
</tr>
</tbody>
</table>
Mass Rapid Transit System

Electrification of Double Track Project (EDTP)
Malaysia’s RM50bil Klang Valley public transport plan

- **RM7bil**: Light rail transit extensions
- **RM36bil**: Proposed mass rapid transit (MRT) system construction and design
- **RM2bil**: Proposed MRT land acquisition
- **RM3bil**: Proposed MRT rolling stock
- **RM2bil**: Proposed MRT underground commercial space development
eKADASTER supports NKRA achievements

**21% A.M. peak public transport modal share**

**EXPANDING URBAN PUBLIC TRANSPORT**
Greater convenience and accessibility in the public transport system

**ASSURING QUALITY EDUCATION**
Towards a brighter future for all

- Expanded reach to Special Needs students
- 292 Special Needs students enrolled in vocational courses via the SEN Vocational Programme
- 11 schools involved with the Employment Transition Programme

**FIGHTING CORRUPTION**
Steady improvement in Transparency International’s Corruption Perceptions Index (CPI)

**RAISING LIVING STANDARDS OF LOW-INCOME HOUSEHOLDS**
Moved more Malaysians out of poverty

- eKasih status 2013: 462,571
- Reasons for "Moved out from Poverty" status: 188,781
- “Moved out from Poverty” reasons:
  - 47 Remarried
  - 438 Welfare Assistance
  - 5,082 Death
  - 9,331 Focus Group Identification
  - 4,937 Others
- Increased income levels: 89%

**REDUCING CRIME**
Clamped down on violent crime

- OPS CANTAS KHAS as of 10th December 2013
  - Property Crime: 38,610
  - Violent Crime: 13,710
  - Property Crime: 36,974
  - Violent Crime: 12,085
  - Property Crime: -6.23%
  - Violent Crime: -4.24%
  - Property Crime: -11.85%
Thank You!
Department of Survey & Mapping
Malaysia
http://www.jupem.gov.my