

## Overview

- GIS  $\rightarrow$  SDI concept
- State-of-Play: Towards Turkey SDI
- Developing a National Geo-data Exchange Model
- Sector oriented SDI applications...







## **Towards Turkey SDI**

• Public institutions increased IT investments in 1990s.

• Digital Maps started to be produced in Turkey after 1990s.

The importance of GIS after these years...

• Many GIS and successful egovernment projects initiated...

• After 2002, into an information society with e- Transformation Turkey Project...



### Towards Turkey SDI- National GIS actions

• Building Turkey National GIS actions, similar to SDI vision.

• Action-47 in 2004, current situation to build SDI was examined...

• Action-36 in 2005, Turkey National SDI strategy as policy encouragement was determined...

• KYM-75 in 2007 aims to build a <u>geo-portal</u> where public institutions can present their geo-information with common standards...???





under responsibility of *LRCD* 

## Towards Turkey SDI- Policy

 There is no centrally management authority among institutions as a mediator to built NSDI in Turkey.

 There is no coordination body working compliant with EUROGI...

• There is no policy encouragement, similar to INSPIRE vision.



Policy ? Data standard

Technical

requirements





SDI education & research interests...





#### Towards Turkey SDI- Data and Standards

• The General Command of Mapping-Standard Topographic Maps (STM) production, especially 1:5000 and smaller.

 Land Registry & Cadastre Directorate (LRCD) and State Provincial produce large scaled maps, 1:5000 and larger...

• I Other public institutions and municipalities have produced maps and GIS projects serving their needs.





 Large Scaled Map Production Regulation (BÖHHBUY) enclosed with feature / attribute catalog + UVDF in 2006.

• II Geo information standards are not designed to solve applicationdriven requirements for various GIS projects and not designed to enable data interoperability....

#### TURKVA:UVDM Developing a Geo-data Exchange Model of Turkey GII

- Geo-Data Sharing Model of Turkey.
- A new approach on GI management in Turkey.
- Compliant with ISO/TC 211, the expectations of INSPIRE data specifications , Turkey National GIS actions.
- Object-relational data model. It enables the users to store objects and their associated attribute data in a single geo-database system.
- a semantic model because harmonized model provides common domain of interaction and the related information.
- Designed with UML class diagrams that are a graphical modeling tool with well defined semantics and underlying computer model in a Model Driven Approach (MDA).





#### TURKVA:UVDM <u>Conceptual Model Components</u> UVDM Application Schema MB Mülkiyet/Yapı Tapu/Kadastro Bina Kamu/Tarım/Endüstri Tes. Ticari Hizmet Tes. Adres UVDM Generic Conceptual Model Scope / Application Area Components \* Standard Hierarchy \* Scale-Resolution&Applications \* Generalization Approach \* Building Province Level SDI in Turkey \* Horizonat/Vertical Relationship Technical Components \* Principles 50 SO Sosyal/Kültür Kentsel ve Kırsal Yerleşim Nüfus Dağılımı /Demografi Turizm Varlıkları Kültür Varlıkları + National GIS policies + INSPIRE standards + ISO/TC 211 standards + OGC standards ldari Birim YA Tarihi-Doğal Özel Çevre Koruma Böl Askeri Yasak Bölg, Kentsel Koruma Bölg, Havza Bölg, IB uma Bölg, idari Birimler Sorumluluk Bölgeleri İstatistiki Bölgeler ağlığı ve G enliži AL Altva Technical Components + Principles \* Reference Model \* Application Schema Rules General Feature Model -Modeling Application Schema -Feature Catalog -Data Dictionary Registers Aull Value Identification - Spatial Schema \* Spatial Object Versioning \* Metadata \* Quality \* Multiple Representation UL Ulaşım Karayolu Havayolu Demiryolu Deniryolu Ulaşım Tesisleri PL Bölge Plans Çevre Düzeni Plans İl Çevre Düzeni Plans İmar Plans TEMATIK VERI VERI TEMEL Hi Hidrografya Göl/Göletler Hehir/Dere... Oşinografik Detaylar Deniz / Bölgeleri HA loiik Hava ve atmo İklim Bölgeleri BI Biyo Bitki Örtöse AR Arazi Yüze Arazi Örtüsü/Kullanım Ortofoto Görüntü Uydu Görüntüsü DO Doğal Ka Bitto Ortusu Biyocografik Bölş Habitat Bölgeleri Türlerin Dağılımı Ekosistem Kaynakları Su Kaynakları Tarımsal/ToprakKaynakları Ornan Kaynakları Balıkçılık Kaynakları Jeolojik Kaynakları Yenil. Enerji Kaynakları D TO Topografya Fizyografya/Hipsografya Swacal Yükseklik Verileri **UVDM Conceptual Model** JF Jeofizik/Cevre Ğ AL foloj specifies the components to lətimetri Tıyı Kenər Çizgisi determine application schemas JD Jeode JD Jeoclezi Coğrafi Referans Sisteml. Coğrafi Grid Sistemleri Temel/Sıklaştırma Ağları Coğrafi Yer İsimleri of data themes and to harmonize spatial data and to produce application schemas of spatial data themes.

Aydinogi	lu (2009)

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# Conclusions...

 Turkey SDI coordination body with encouraging policies should be built. Related laws should be examined to manage geo-data corporately.

• Sector/application oriented geo-data standards should be developed compliant with UVDM, base model.

• a UVDM UML application schemas, GML 3.X based Geo-data Exchange Format (UVDF) -software/hardware independentshould be developed.

• Web services and National Geo-data Portal should be developed, based on accepted standards...

• In this way, "National GIS actions" should enable the effective collection, management, and access to geographic information.



