

Managing Geo-Data to Support Urban Planning Development Process in Turkey

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Presenter

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INTRODUCTION

- Rapid urbanization has occurred in most major cities in the developing world.
- Urban areas confront with land use problems.
- There is a lack of available land in these cities.
- Local government must design and apply some efficient land-use planning strategies ...

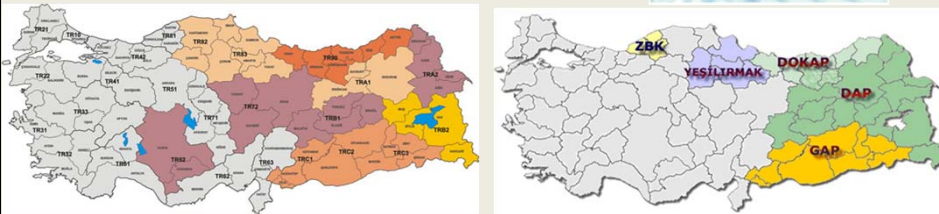
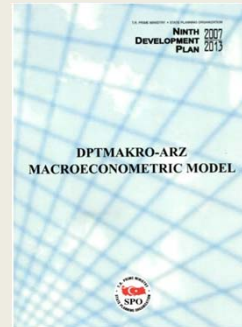


TURKEY
71 million population
%75 ... in cities

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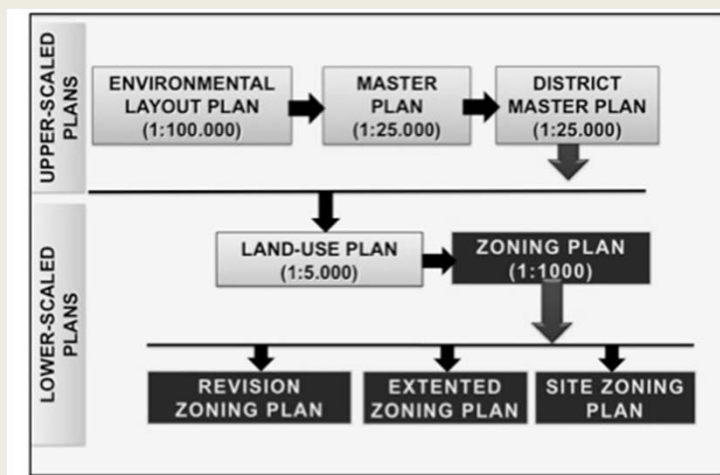
Plan Types in Turkey

- Planning process begins at the national scale with five-year development plans in regional bases.
- State Planning Organization takes account
 - socio-economic development trends,
 - the growth potential of the settlement, and
 - sector objectives to determine the distribution of sub-structures....



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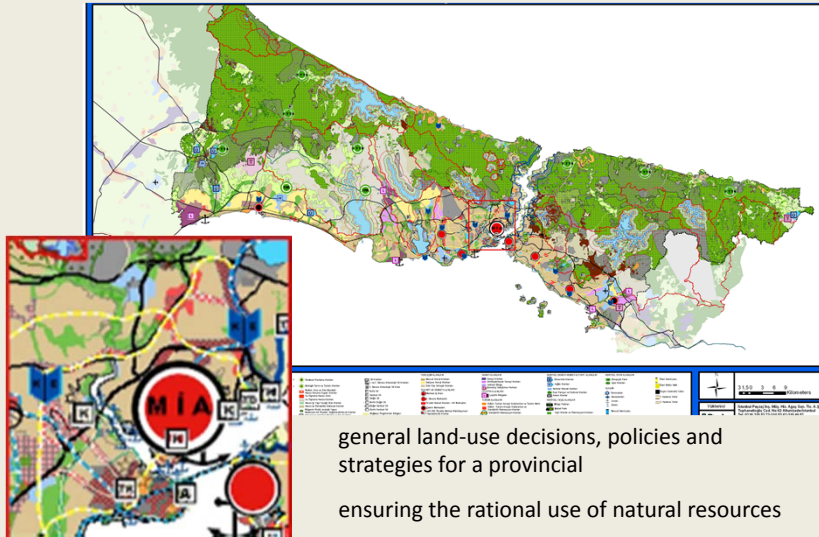
Plan Types in Turkey



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Plan Types in Turkey

Environmental Layout Plan of Istanbul, 1 to 100.000



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Plan Types in Turkey

Land Use Plan of Tekirdag, 1 to 5.000

Zoning Plan of Tekirdag, 1 to 1000



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Plan Types in Turkey

- CAD solutions were generally produced to manage plan data.
- There is no approach to produce and manage plan data in a GIS environment.
- Act No. 3194 Zoning Law was insufficient in view of the plan legend to meet today's needs.
- Differences between municipalities using the same legend have occurred to develop zoning plans.



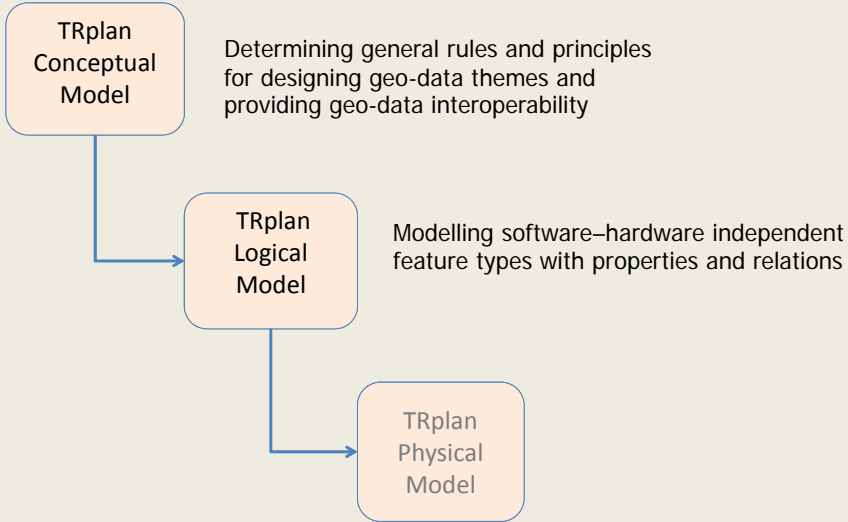
TRplan.gml

- managing plan data with GIS effectively.
- Combining legend for 1/1000, 1/5000 and 1/25000 plans in view of user-needs.
- Independent from technologic requirements and software
- Compliant with ISO15926 and OGC standards, ...
- Following INSPIRE, CORINE, Plan4all, ISIC system, .. for managing planning data.
- Object –relational geo-data exchange model
- Preparing with model-driven approach using UML, and then converting GML 3.1.1 geo-data exchange



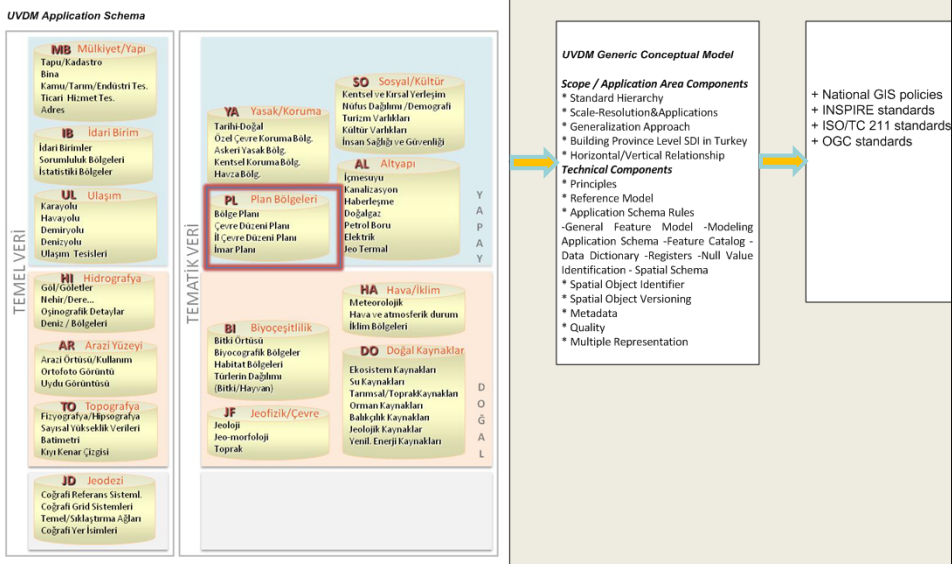
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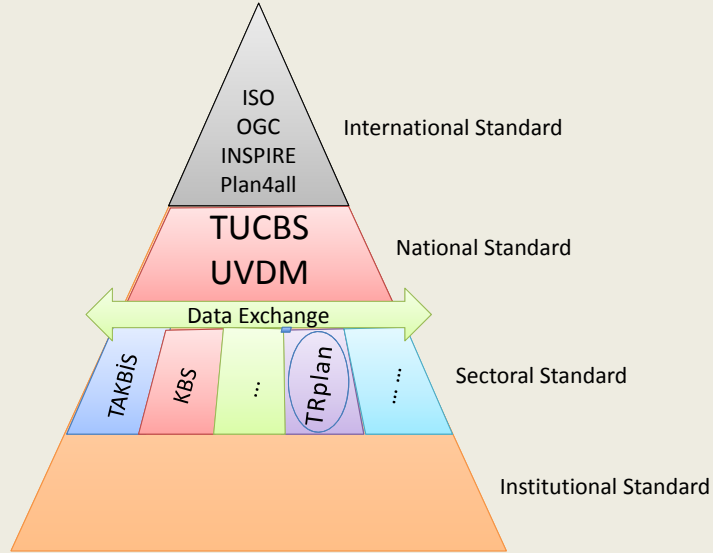
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TRplan Conceptual Model Components



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TRplan Standard Hierarchy



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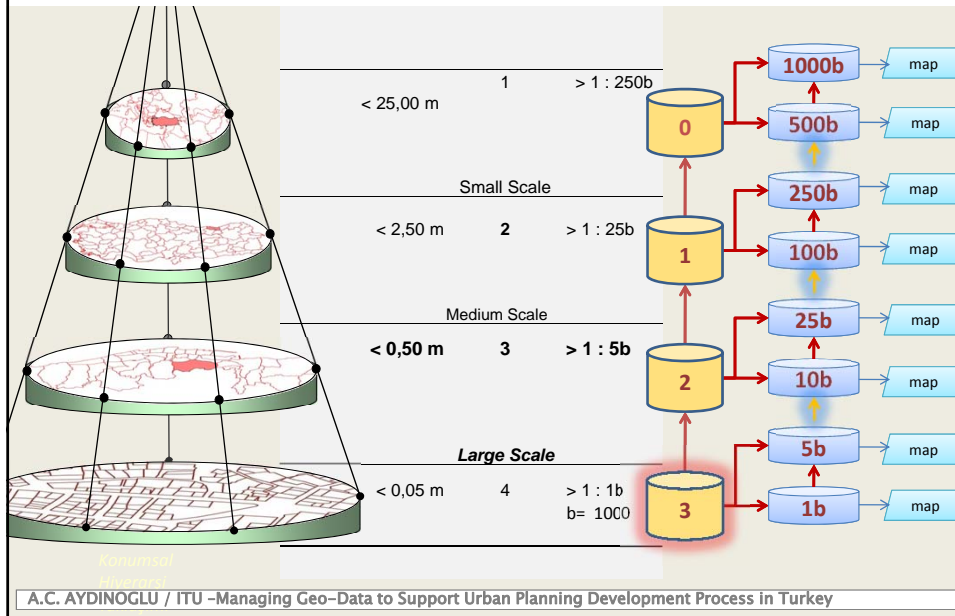
TRplan Legend

A	B	C
1/25.000	1/5.000	1/1000
SINIRLAR	SINIRLAR	1.SINIRLAR
1.1.YONETİMSEL SINIRLAR	1.1.YONETİMSEL SINIRLAR	1.1.YONETİMSEL SINIRLAR
ÜLKE SINIRI	ÜLKE SINIRI	ÜLKE SINIRI
İL SINIRI	İL SINIRI	İL SINIRI
İLÇE SINIRI	İLÇE SINIRI	İLÇE SINIRI
BÜYÜKŞEHİR BELEDİYESİ SINIRI	BÜYÜKŞEHİR BELEDİYESİ SINIRI	BÜYÜKŞEHİR BELEDİYESİ SINIRI
İLÇE BELEDİYESİ SINIRI	İLÇE BELEDİYESİ SINIRI	İLÇE BELEDİYESİ SINIRI
İLK KADEME BELEDİYE SINIRI	İLK KADEME BELEDİYE SINIRI	İLK KADEME BELEDİYE SINIRI
BELEDİYE SINIRI	BELEDİYE SINIRI	BELEDİYE SINIRI
MÜCAVİR SAHA SINIRI	MÜCAVİR SAHA SINIRI	MÜCAVİR SAHA SINIRI
MAHALLE SINIRI	MAHALLE SINIRI	MAHALLE SINIRI
KÖY SINIRI	KÖY SINIRI	KÖY SINIRI
KÖY YERLEŞİK ALAN SINIRI	KÖY YERLEŞİK ALAN SINIRI	KÖY YERLEŞİK ALAN SINIRI
KÖY YERLEŞİK ALANI ÇIVARI SINIRI	KÖY YERLEŞİK ALANI ÇIVARI SINIRI	KÖY YERLEŞİK ALANI ÇIVARI SINIRI
1.2.OZEL KANUNLARA TABI ALAN VE	1.2.OZEL KANUNLARA TABI ALAN VE	1.2.OZEL KANUNLARA TABI ALAN VE
TURİZM MERKEZİ+KÜLTÜR VE TURİZM KORUMA VE GELİŞİM ALT BÖLGE SINIRI	TURİZM MERKEZİ+KÜLTÜR VE TURİZM KORUMA VE GELİŞİM ALT BÖLGE SINIRI	TURİZM MERKEZİ+KÜLTÜR VE TURİZM KORUMA VE GELİŞİM ALT BÖLGE SINIRI
ÖZEL ÇEVRE KORUMA ALANI SINIRI	ÖZEL ÇEVRE KORUMA ALANI SINIRI	ÖZEL ÇEVRE KORUMA ALANI SINIRI
TURİZM MERKEZİ+KÜLTÜR VE TURİZM KORUMA VE GELİŞİM BÖLGESİ SINIRI	TURİZM MERKEZİ+KÜLTÜR VE TURİZM KORUMA VE GELİŞİM BÖLGESİ SINIRI	TURİZM MERKEZİ+KÜLTÜR VE TURİZM KORUMA VE GELİŞİM BÖLGESİ SINIRI
MİLLİ PARK SINIRI	MİLLİ PARK SINIRI	MİLLİ PARK SINIRI

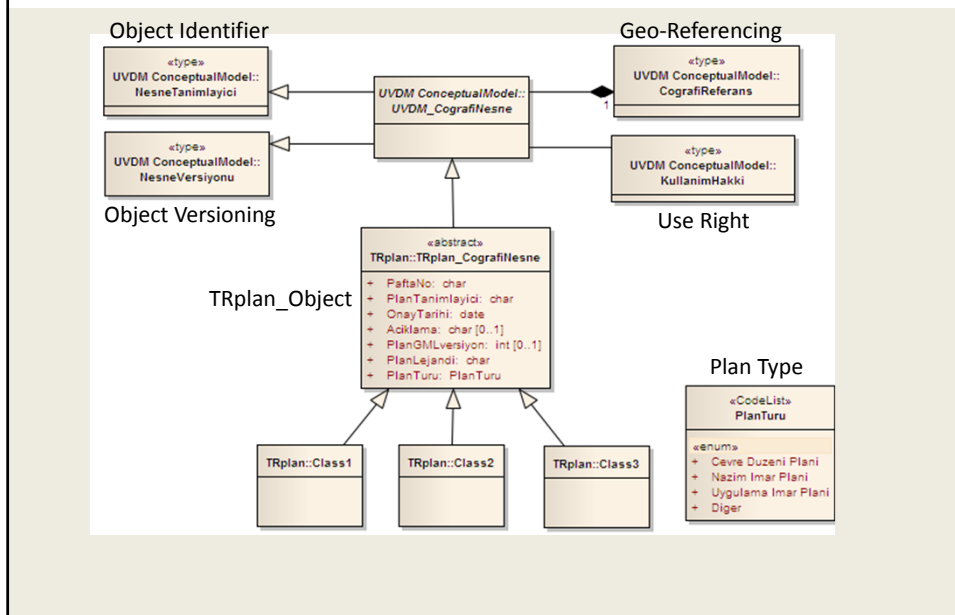
11 categories and 330 sub-categories with name, code, definition, and symbology

New regulation is initiated to provide uniform use of legends by planners all over the country.

TRplan Scale-Resolution-Generalization

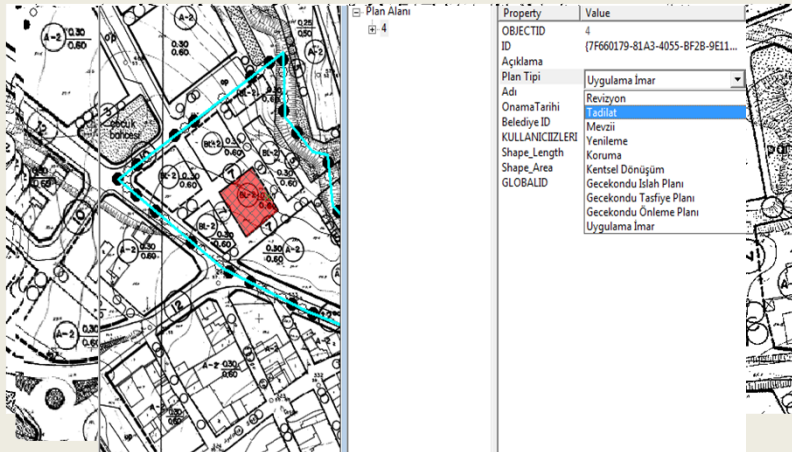


TRplan Base Application Schema



TRplan General Feature Model ISO 19109

PlanSite + Attributes + Relationship



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TRplan General Feature Model

Topologic Relation between RoadArea and PlanSite



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CONCLUSION

New plan legends provide common use of plan data among all stakeholders.

TRplan Conceptual Model components support the interoperability of geo-datasets.

These rules enable to design a harmonized geo-data model for planning and to manage geo-data corporately in planning applications

TRplan geo-data model for planning purpose is shaped for arrangement of data using with master, land use, and zoning plan projects.

TRplan.gml support exchange geo-data on networked environment as a part of National SDI initiative.

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