



Project data and GIS Methodology & Development

GIS Methodology

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GIS Methodology

- The graphical outputs of previous project Donaregionen were the starting point of these project activities
- In previous project a lot of geographical data was produced
- **Now we have to refine and update existing data as basis for Donaregionen+ project, eliminate existing errors and add new contents for the next tasks**
- **New project partners have to create basic GIS data as well as data for each General Scheme and Work Package**

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Donaregionen+ Geodatabase Structure

Preliminary version
(1.6.2010)

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GIS geographic data for project outputs elaboration should be created with following properties:

- Relevant coordinate system
- ESRI – Data format
- xBase file format convention attributes
- Software ArcGIS (recommended) or ArcView GIS from ESRI

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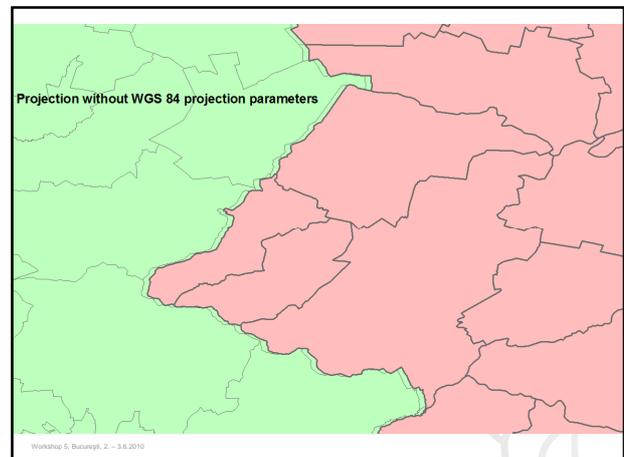
GIS Methodology

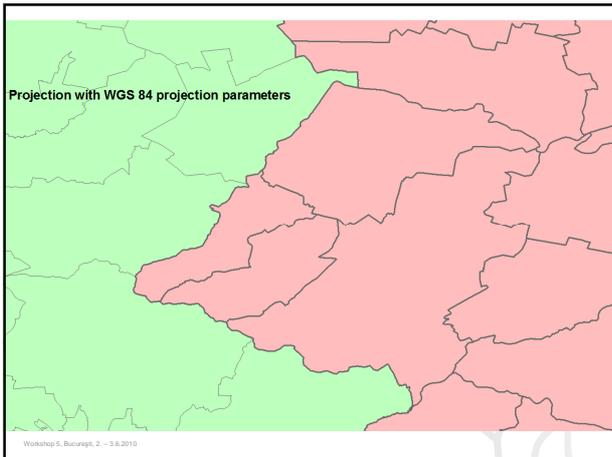
GIS geographic data for project outputs elaboration should be created in the following Coordinate systems:

- **National coordinate system with corresponding PRJ file including National to WGS 84 projection corrections**
- ETRS 1989
- WGS 1984

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GIS geographic data for project outputs elaboration should be created in the following data formats:

- ESRI – Personal Geodatabase
- ESRI – Shapefile (i.e. DBF, SHP, SHX, PRJ, CPG files)
- ESRI – File Geodatabase
- ESRI – ArcInfo coverage
- ESRI – PC ArcInfo coverage

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GIS geographic and/or attribute data should be created in the **xBase file format convention** in English language:

- **Field Name:**
 - Only upper alphanumeric characters (A – Z, 0 – 9 and “_”)
 - Maximum name length 10 characters (i.e. NUTS4_NAME)
 - Does not begin with number (i.e. 2_ND)
- **Data Codepage:**
 - Windows 1250 Central European (HR, HU, MD, RO, RS, SK)
 - Windows 1251 Cyrillic (BG, UA)
 - Cyrillic names should be written also in Latin transcription

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GIS data should be produced (finalized) in ArcGIS or ArcView:

- **Correct topology:**
 - No overlap or gaps for polygon data
 - No useless dangle or pseudo nodes for polyline data
 - No duplicate for point data
 - If possible done by defining ArcGIS topology rules
- **Project formats:**
 - MXD project format for ArcGIS version 9.2 and higher
 - APR project format for ArcView GIS version 3.2 and higher

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Polygon

Must not overlap

Polylines must not overlap within a feature class or subtype. Polygons can be disconnected or touch at a point or touch along an edge.

Polygon errors are created from areas where polygons overlap.

A voting district map cannot have any overlaps in its coverage.

Use this rule to make sure that no polygon overlaps another polygon in the same feature class or subtype.

Point

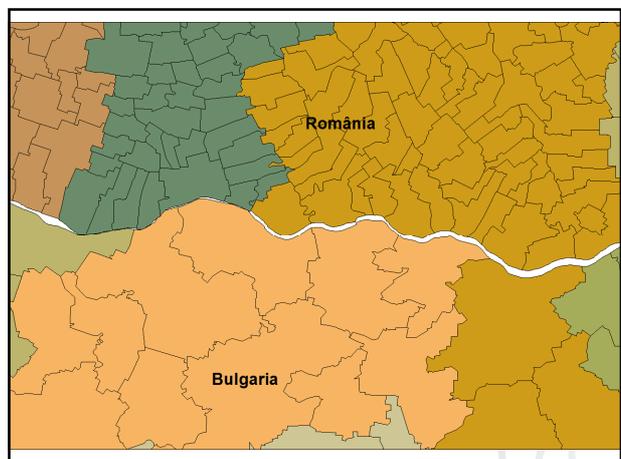
Must be properly inside polygons

Points in one feature class or subtype must be inside polygons of another feature class or subtype.

Point errors are created where the points are outside or touch the boundary of the polygons.

State capitals must be inside each state.

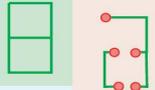
Use this rule when you want points to be completely within the boundaries of polygons.



Line

Must not have dangles

The end of a line must touch any part of one other line or any part of itself within a feature class or subtype.



Point errors are created at the end of a line that does not touch at least one other line or itself.



A street network has line segments that connect. If segments end for dead-end roads or cul-de-sacs, you could choose to set as exceptions during an edit session.

Use this rule when you want lines in a feature class or subtype to connect to one another.

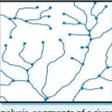
Line

Must not have pseudonodes

The end of a line cannot touch the end of only one other line within a feature class or subtype. The end of a line can touch any part of itself.

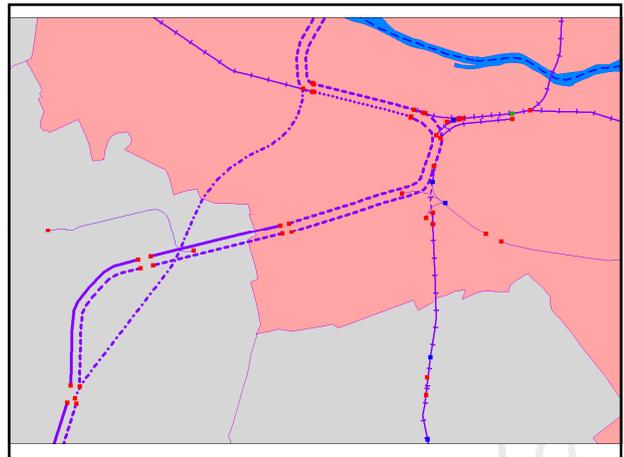


Point errors are created where the end of a line touches the end of only one other line.



For hydrologic analysis, segments of a river system might be constrained to only have nodes at endpoints or junctions.

Use this rule to clean up data with inappropriately subdivided lines.



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<http://dplus.infoprojekt.sk/Methodology/WP3GIS/32GISdevelopment.aspx>

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We are waiting to your recommendations, comments, and questions

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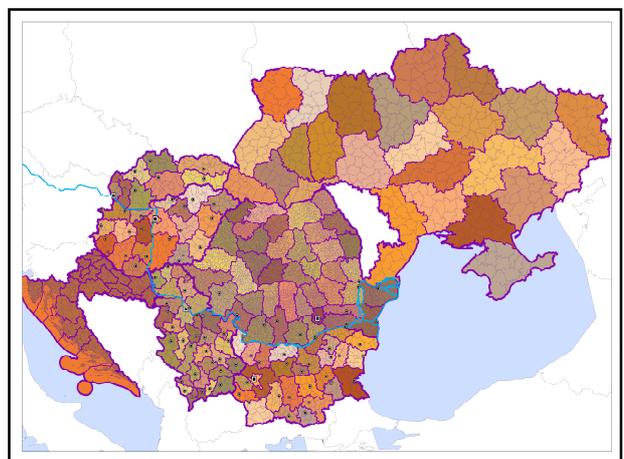

GIS Methodology - Base Map

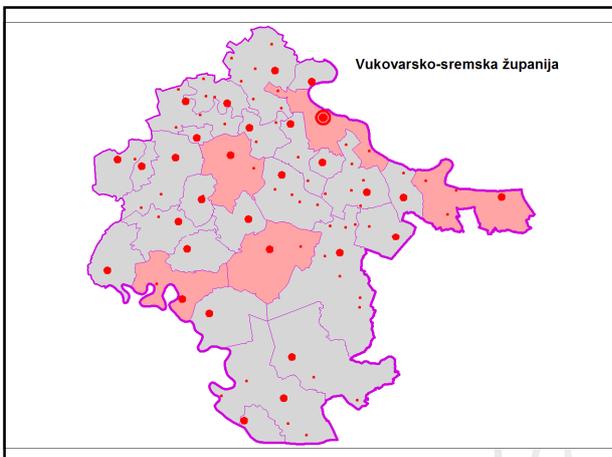
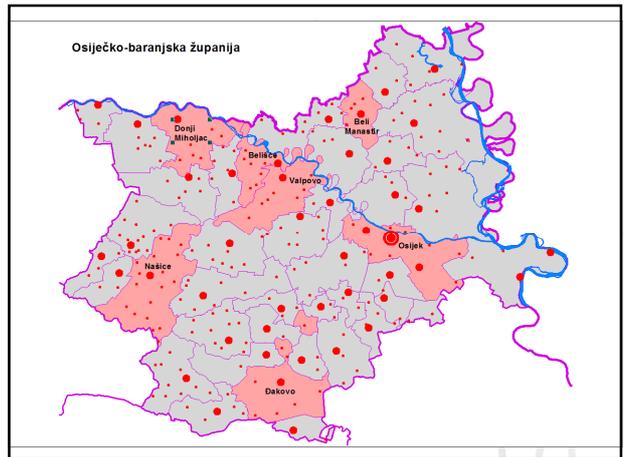
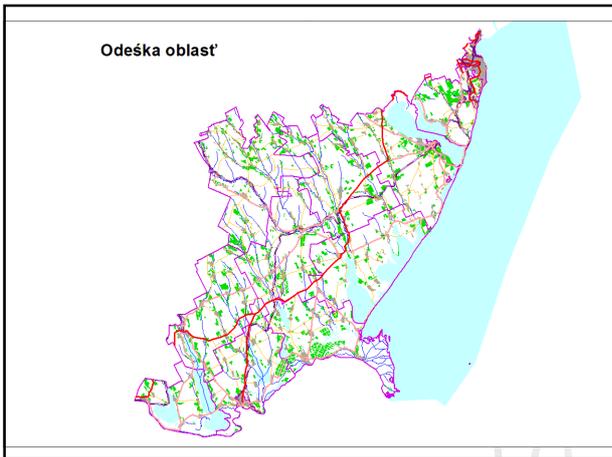
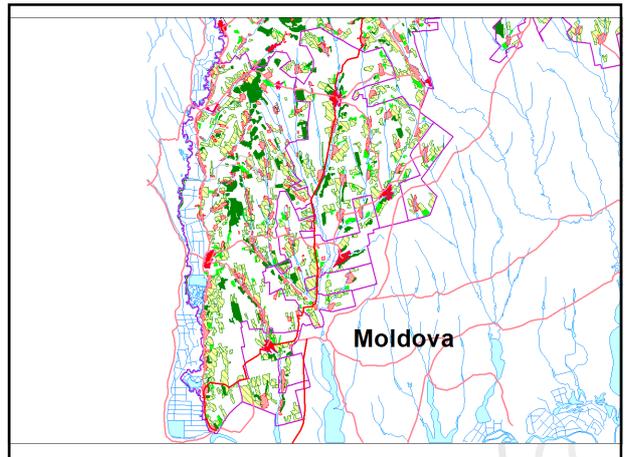
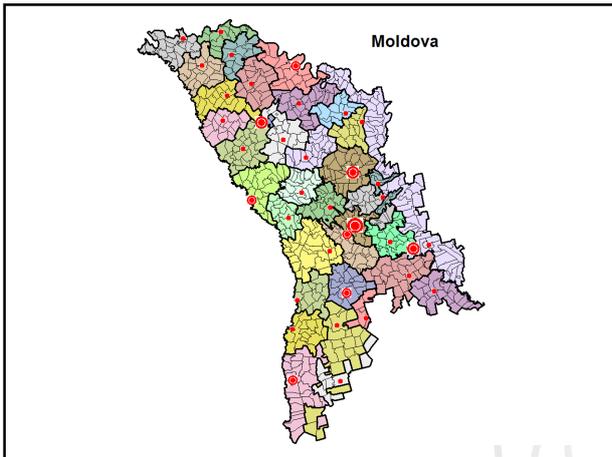
Basic data from each project partner will contain:

- Regional division until LAU1 (former NUTS 4 level)
- Definition points of settlement corresponding to LAU2
- Vegetation & Forest areas
- Water surfaces and rivers (canals)
- Road and railway networks
- Airports and ports

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Regarding GIS development we propose following steps:

- All existing Donauregionen GIS data are transferred into ArcGIS Personal database format
- Updated GIS data was given to respective partners for the further refinement, completion or development
- Revised and new GIS data will be sent to GIS coordinator by respective project partners, who after integration will disseminate them to the project partners for further use

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- Borders of Croatia and Ukraine were obtained from SABE (Seamless Administrative Boundaries of Europe)
- **It is necessary to solve border polygons gaps and overlays between Serbia, Bulgaria, Romania, Moldova and Ukraine**
- Because all these data are 5 years old, it is necessary to check and update data for each country by its responsible partners

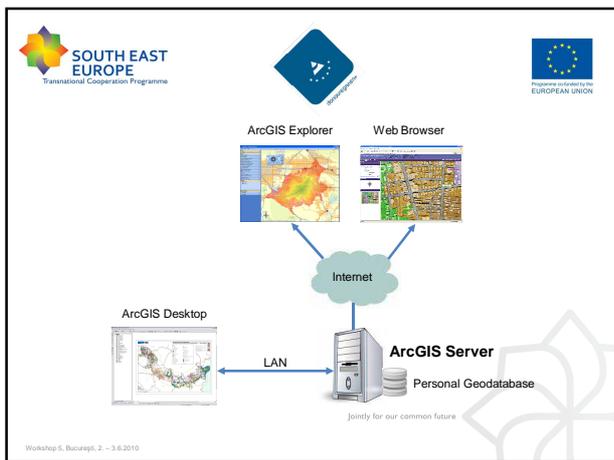
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- **We would like to obtain topologically correct GIS data from old partners up to June 2010**
- GIS data of old partners will be saved in ESRI Personal geodatabase
- **We would like to obtain the base maps GIS data from new partners up to June 2010**
- In next steps, new partners have to fill Base Map with themes of every General scheme and Work Package as well

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Portal & GIS Server

Build on ArcGIS Server 9.3.1 basis

- **Project web:** www.donauregionen.net
- **GIS Server:** gis.donauregionen.net
- **Project portal:** dplus.infoprojekt.sk
- **Up to 1.7.2010** test01.infoprojekt.sk

- Portal & GIS Server are under construction – Work and Test mode
- Maps are available online during working days from 8:00 to 16:00 CET
- Number of maps: currently **15 maps**

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The Spatial Development of Interregional Co-operation in the Danube Space

Project Workpackages Workshops Dictionary Maps Regions Methodology Admin

Online Maps Natural Conditions

Maps are available online during working days from 8:00 to 16:00 CET.

CORINE Protection Water

Populations

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The Spatial Development of Interregional Co-operation in the Danube Space

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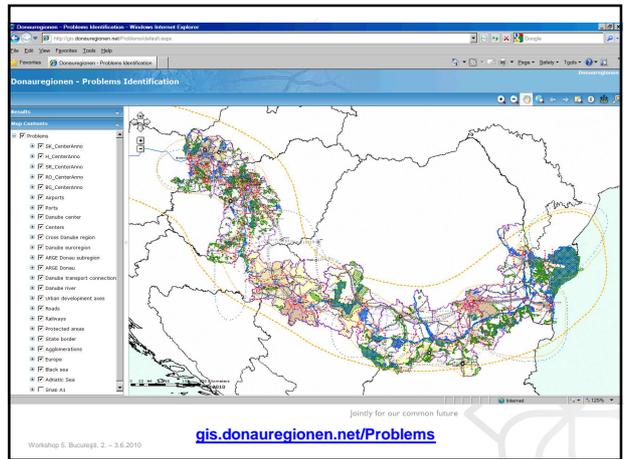
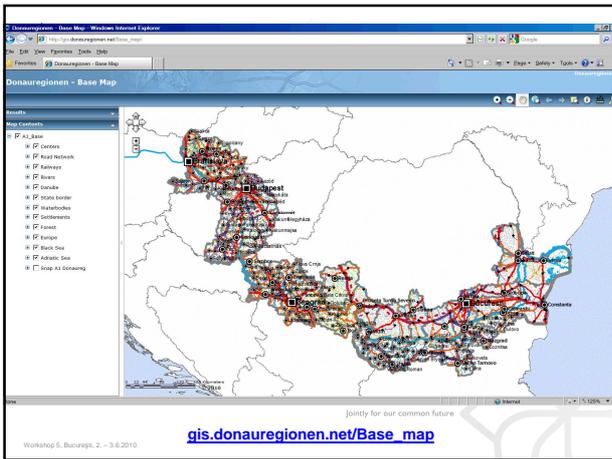
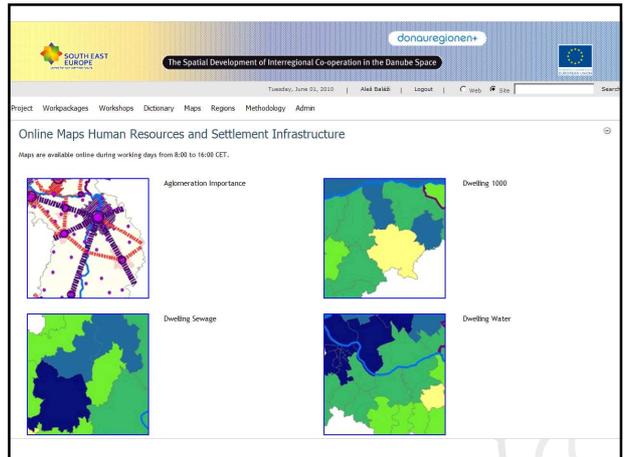
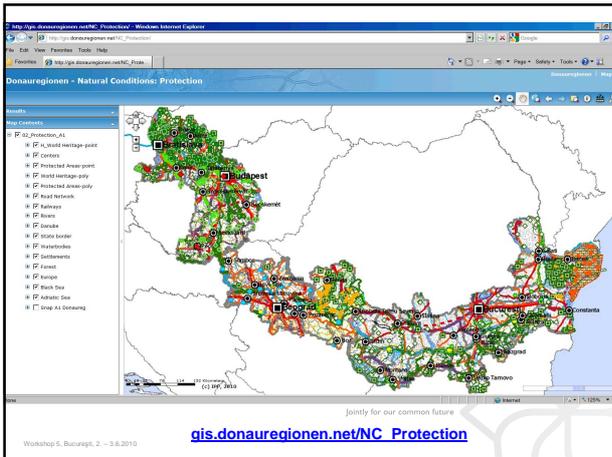
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gis.donauregionen.net/NC_Corine



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Thank you for your attention

Have a nice day...

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