



A GENERIC APPROACH TO BUILDING TYPIFICATION

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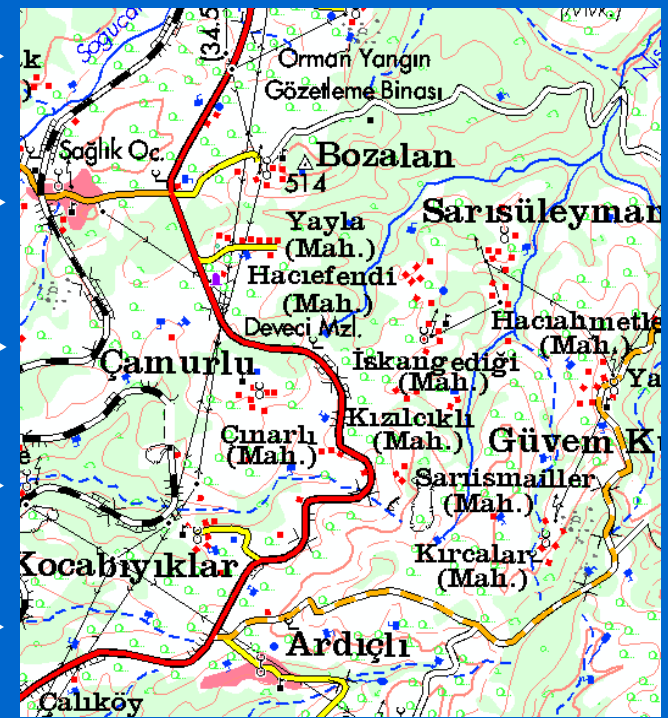
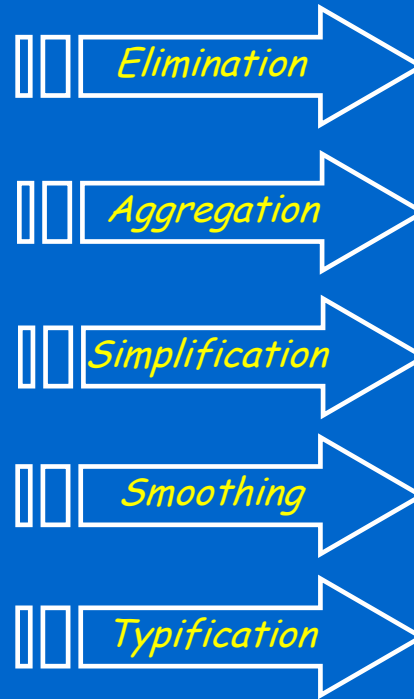
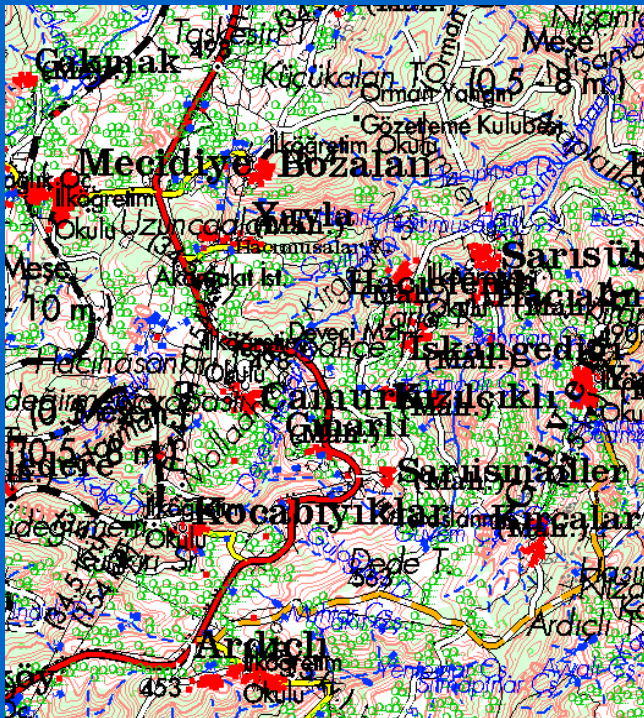
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Introduction

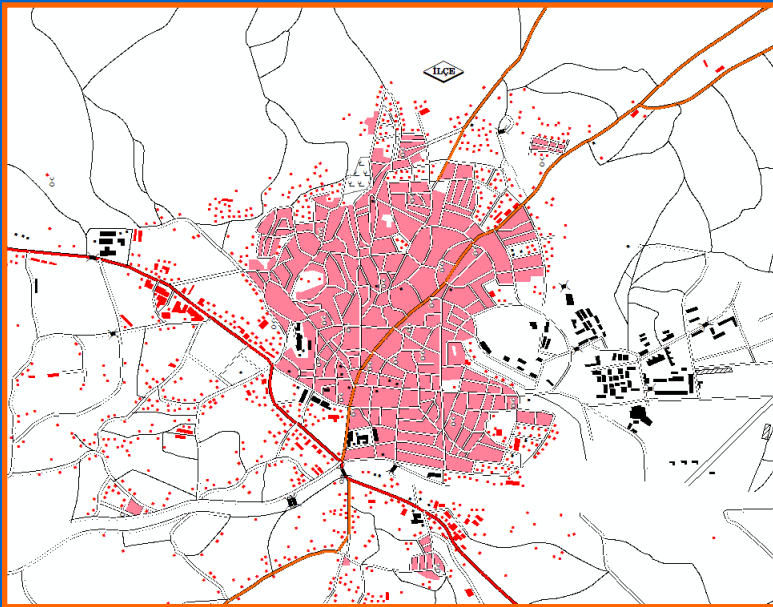




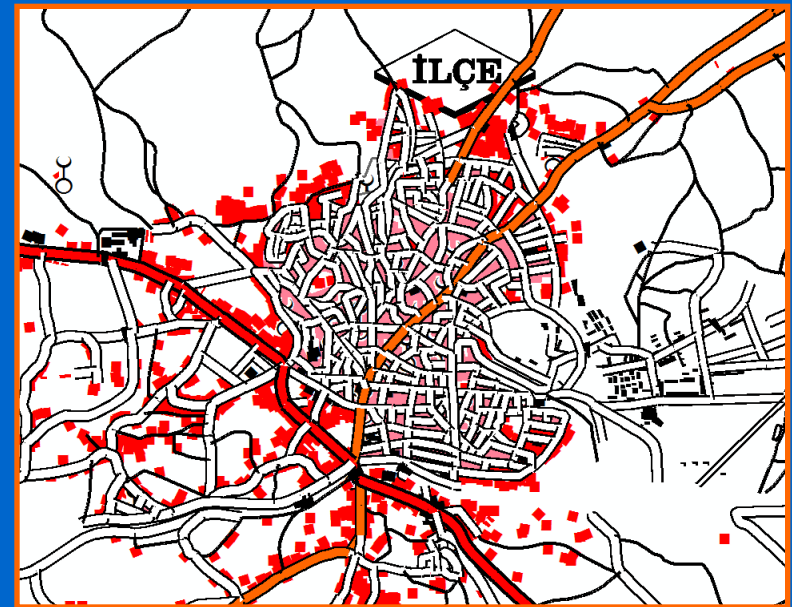
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Introduction

1:25 000



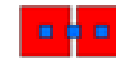
1:100 000



(a) Original Scale



(b) Derived Scale

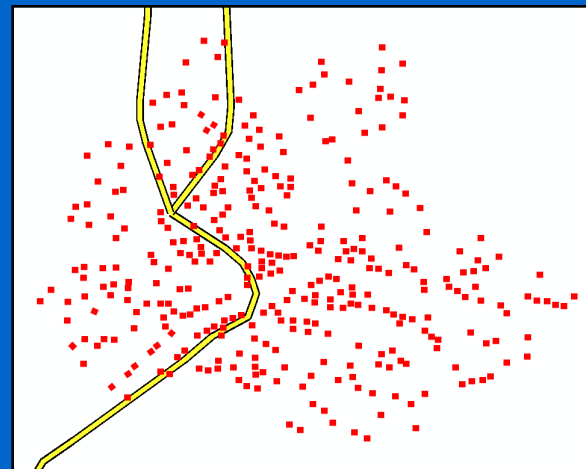
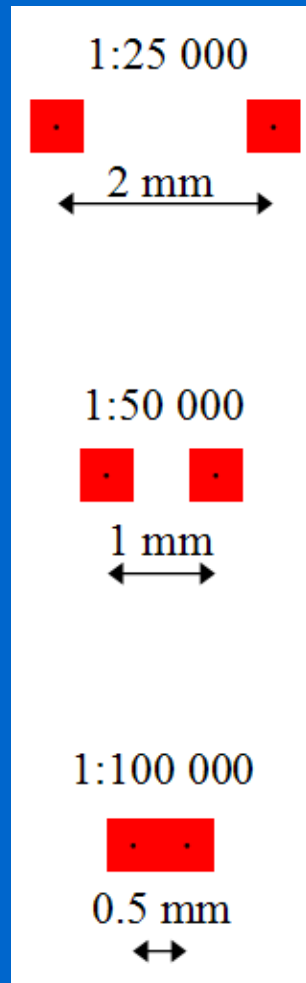


(c) Building typification

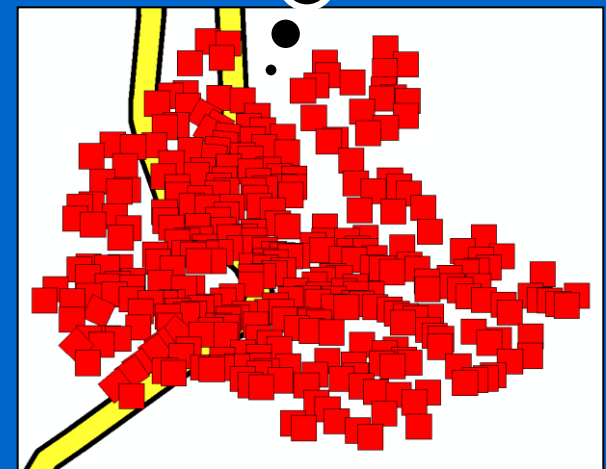


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Introduction



1:25 000



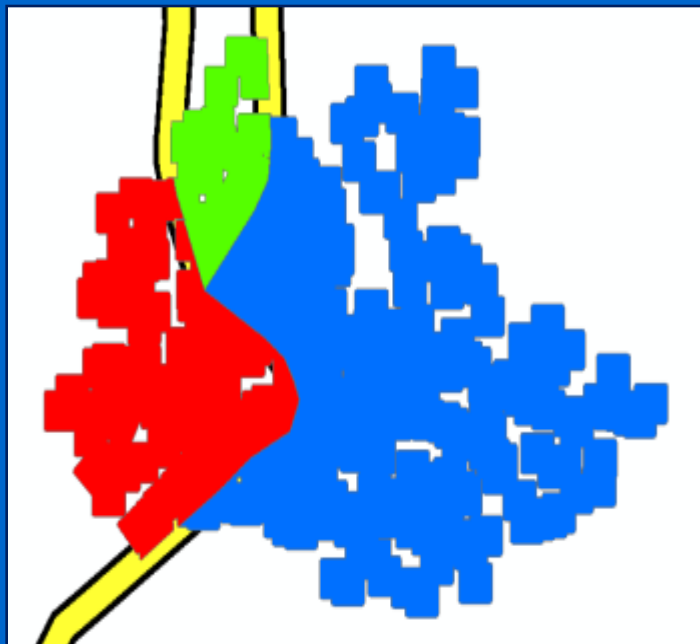
Aggregation
Simplification
Elimination
Typification



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Building typification

1st Step: GROUPING



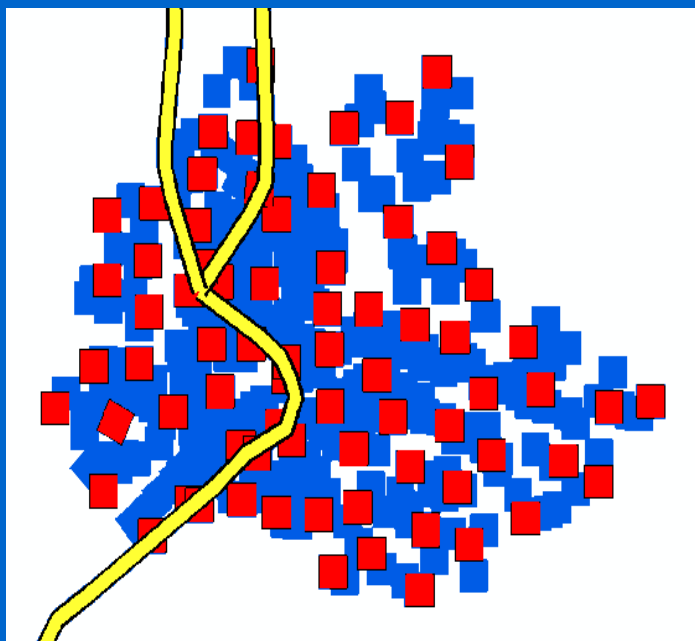
Clustering with buffer polygon and transportation network



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Building typification

2nd Step: TYPIFICATION



Conserving the typical spatial structure of the object arrangement



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L&A Methods at Building Typification

Typification is carried out by means of two novel methods;

1. Length Method
2. Angle Method

*Topfer Rule
(1966)*

$$m_H < 100\,000 \quad \Rightarrow \quad n_H = n_K \sqrt{\frac{m_K}{m_H}}$$

$$m_H > 100\,000 \quad \Rightarrow \quad n_H = n_K \frac{m_K}{m_H}$$

m_H : Derived scale factor

m_K : Original scale factor

n_H : Number of features at derived scale

n_K : Number of features at original scale



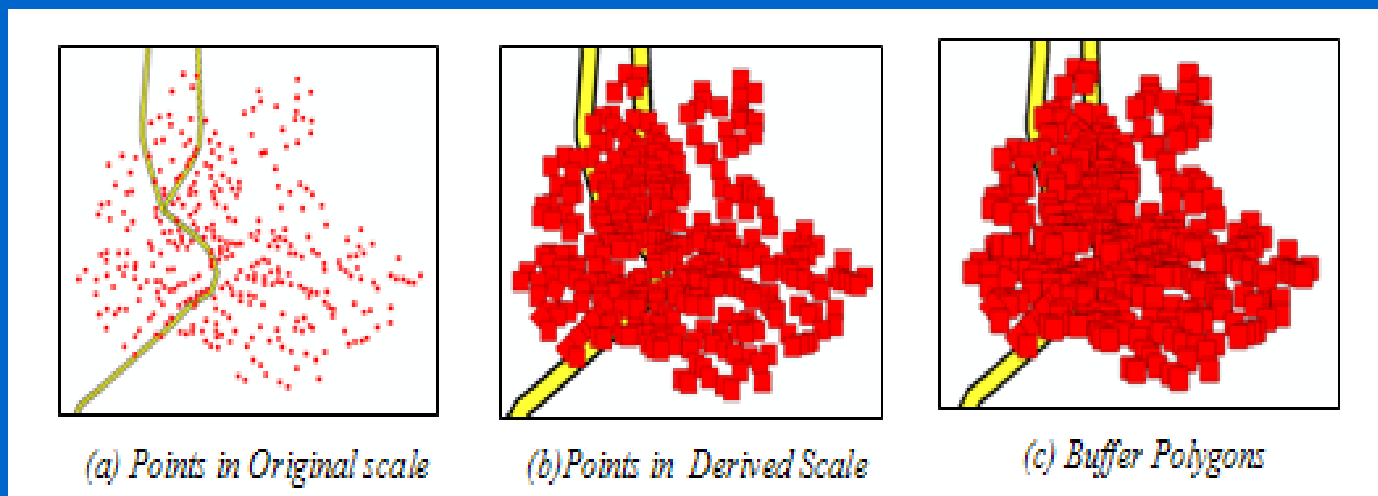
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L&A Methods

L&A methods;

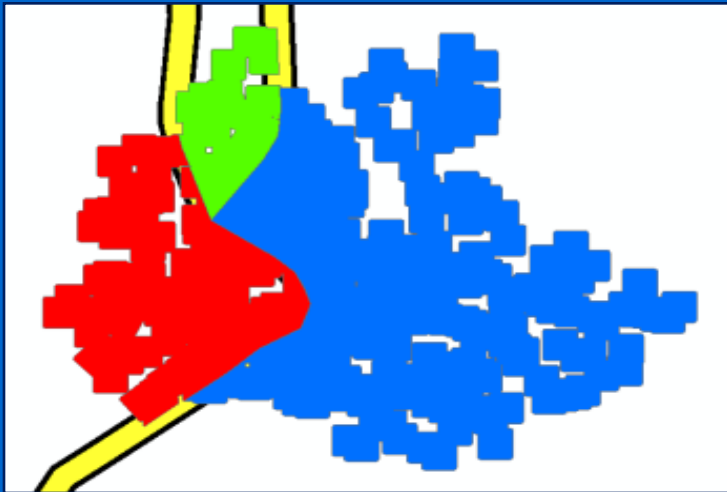
- Detect the building groups
- Typify them in order to generalize the buildings having point geometries
- Take care about the symbol sizes

Detecting building groups

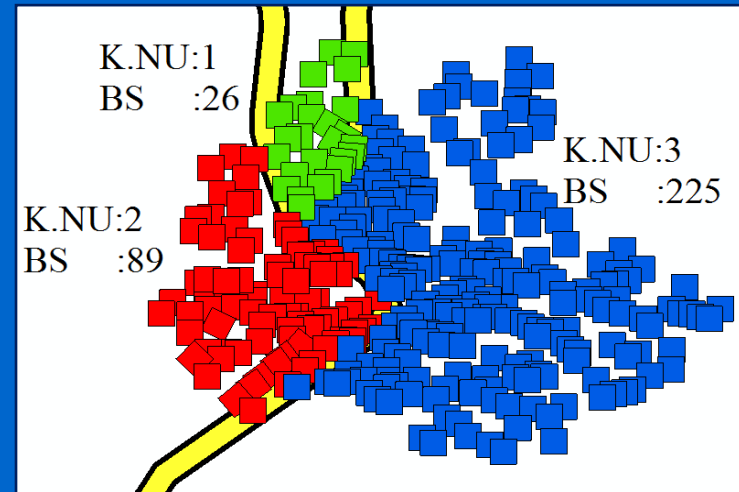


Half of the minimum distinction distance (ie. 10m. for 1/100K) is used as criterion to build the buffer polygons of these points

Detecting building groups



New clusters



Number of clusters
Number of buildings

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Length Method



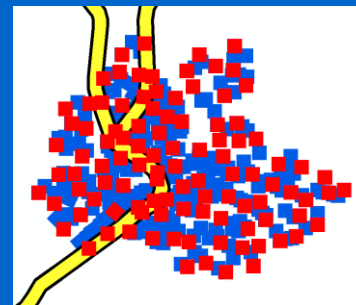
Computing the cluster's center of the buffer polygons.

Calculating the distances between buildings and the center.



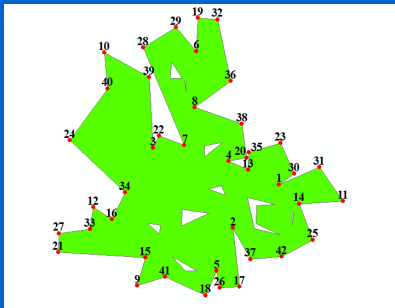
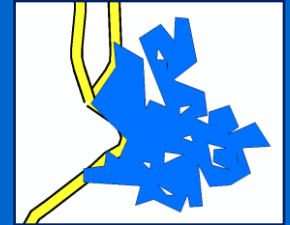
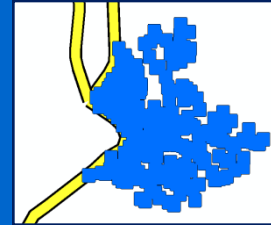
Selecting the building successively from farthest to nearest and eliminating the overlapping buildings.

End of typification.



Angle Method

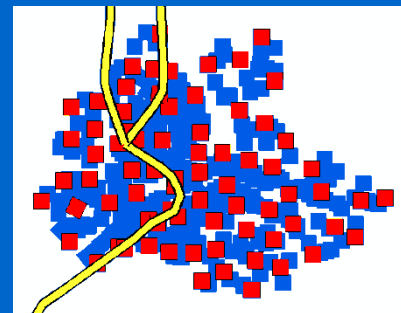
Merging the buffer polygons and simplify.



Computing the corner angles of merged polygon.

Selecting the building successively from smallest to biggest and eliminating the overlapping buildings.

End of typification





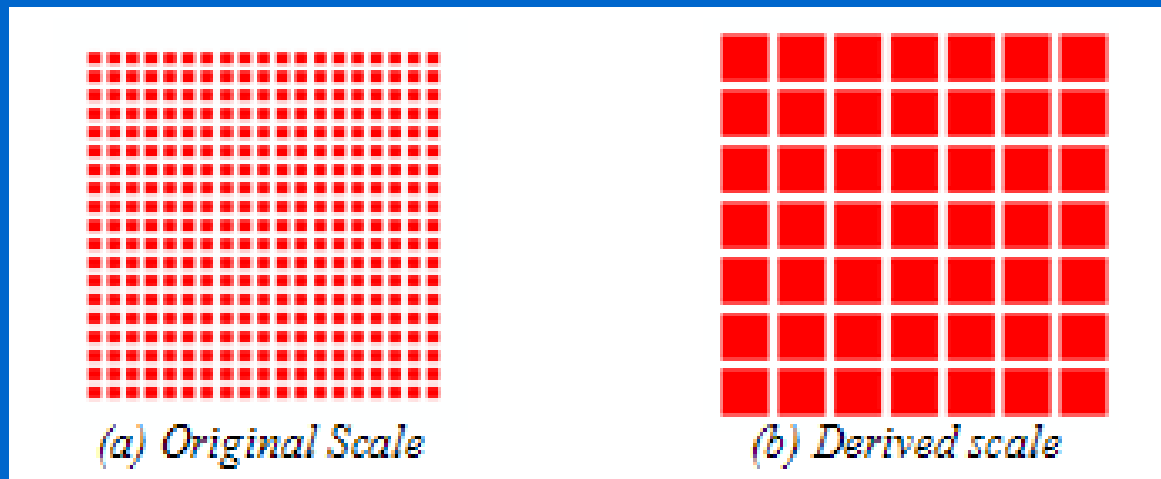
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Conclusion

Difference from the existing studies about typification:

- Few of them are related with point geometries
- Few of them are concerned with the symbol sizes and scale factor

Conclusion



The spatial pattern of building distributions of building groups having regular geometric shapes are also preserved.

The results of these methods are evaluated as quite encouraging and satisfactory for our derived map production line.

But the methods are applied only for the buildings having the same attributes and geometries.



THANK YOU...

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