



# GIS platform for EO data processing and visualisation in GeoSym project

## Progress report

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# Motivation

- ▶ **Objective O3:** Integration of symmetry detection into the methodology of semantic segmentation and object recognition in EO data in order to improve accuracy and enlarge the set of recognized classes, validated in a dedicated set of applications.
- ▶ The presented GIS platform has been developed to provide visualisation of results of different symmetry detection algorithms operating on EO data, and to run pilot applications.

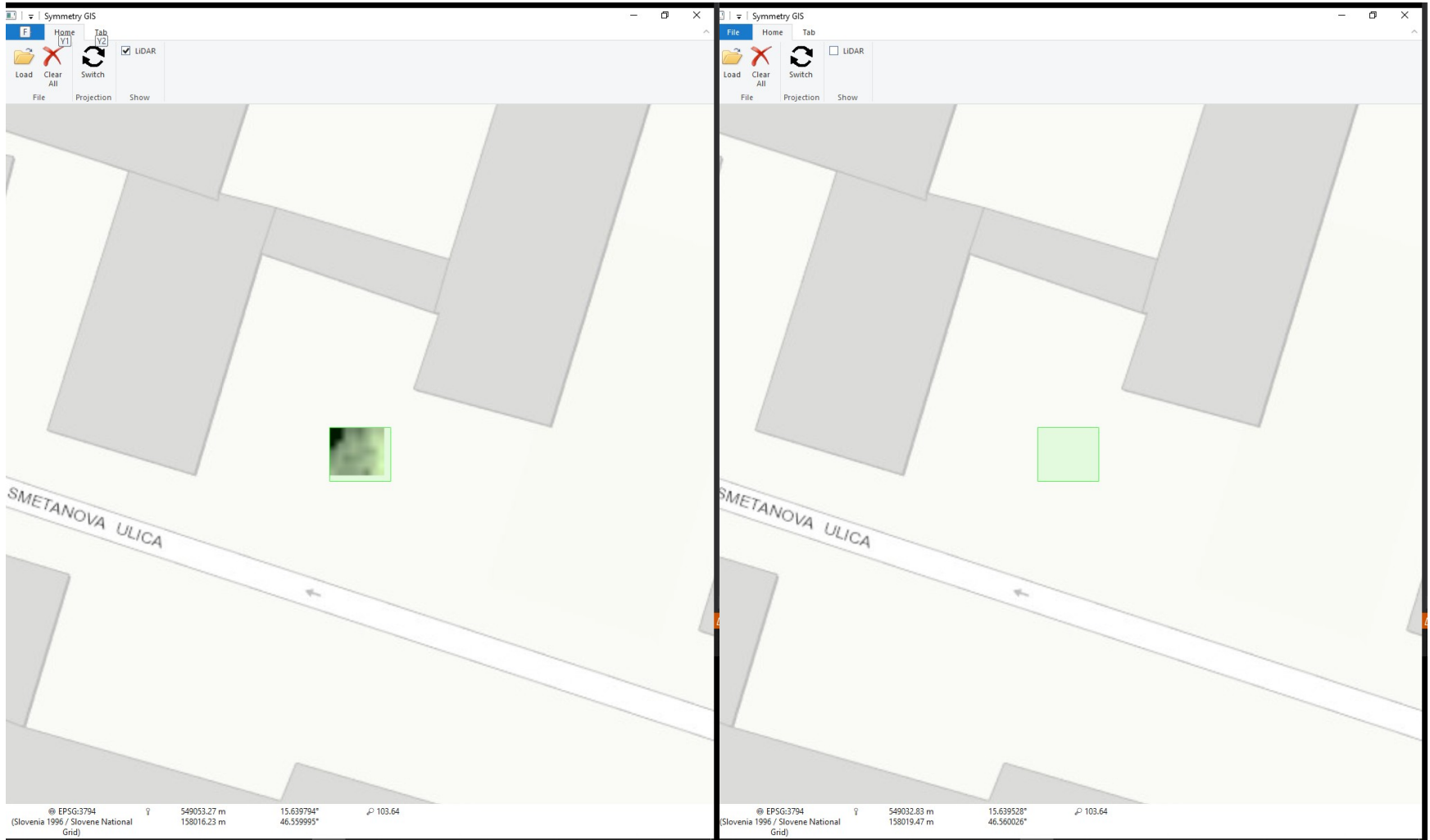
# GIS Platform

- ▶ Derived from GeMMA Fusion Suite (GFS)
- ▶ Focus on rotational and reflectional symmetries in top view. Why?
  - Other GIS layers to be fused with detected symmetries are also 2D scalar fields (geographic maps).
- ▶ Axes/planes of detected symmetries are supposed to be (nearly) vertical.
  - Depending on incorporated symmetry detection algorithm, other symmetries can also be found, but their symmetry axes/planes are not visualized (horizontal projection of oblique plane would cover the whole map, while its intersection with ground is often outside of the region of interest).

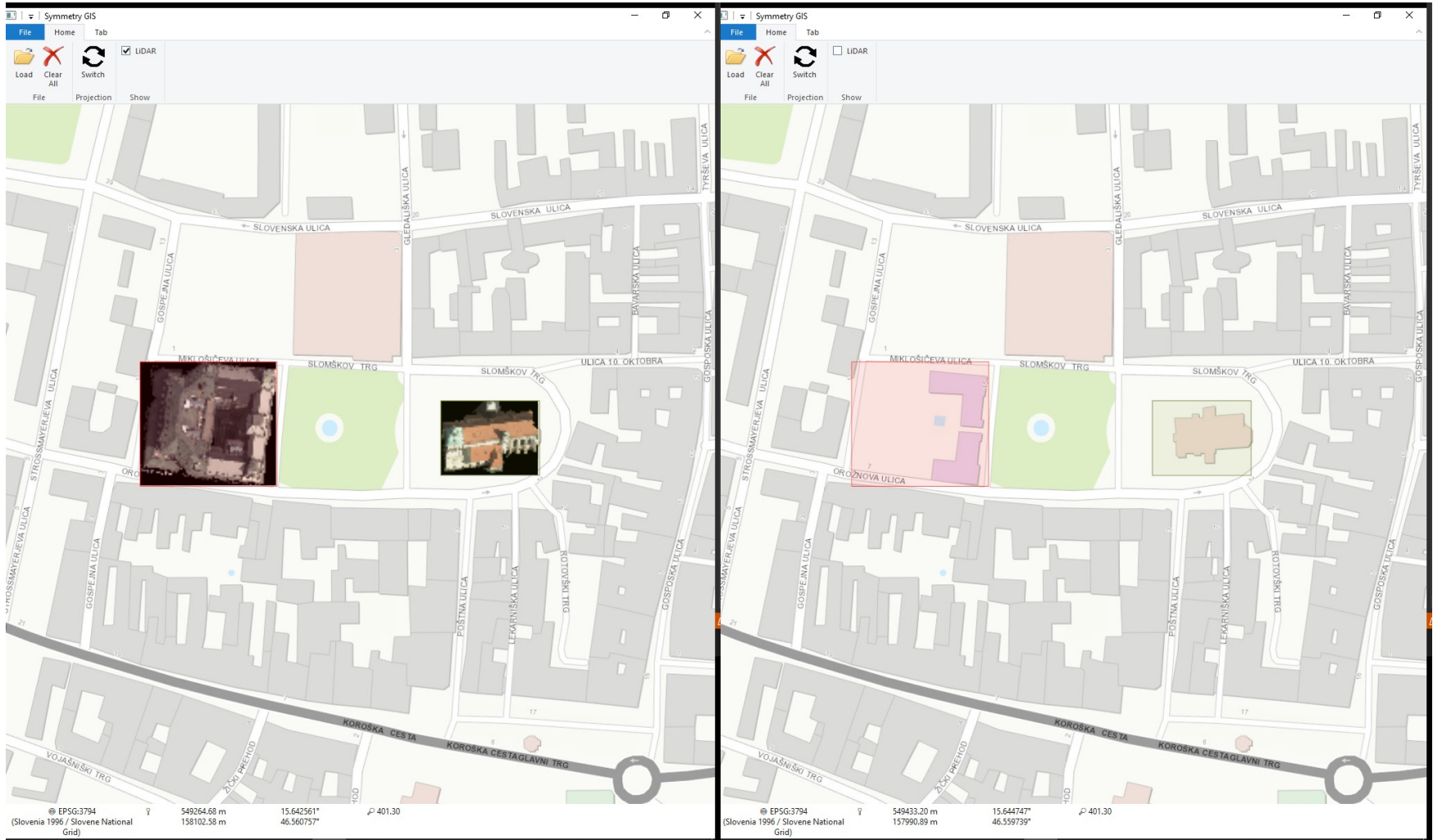
# GIS Platform

- ▶ Currently, the algorithm of Lukáš (for global reflectional symmetry detection) is integrated into the platform.
  - As symmetry plane in testing examples is rarely vertical, we visualize the scores of input points, not the symmetry plane itself.
- ▶ However, it seems that only the local & approximate symmetry (reflectional and rotational) detection can realize the objective O3.
  - David's algorithm will be soon integrated, and it will be also used to define instructions how to integrate new methods.

# GIS Platform



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