MINISTRY of EDUCATION AND SCIENCE of the RUSSIAN FEDERATION
Udmurt state University
Institute of natural Sciences
Department of geography, cartography and Geoinformatics

COURSEWORK ON THE TOPIC: "Digital Photogrammetric System PHOTOMOD 5.21 Lite and its application for processing aerial images»

Completed by a student in the field of
cartography and geoinformatics OAB -05.03.03-11 **Pudova Tatyana Mikhailovna**

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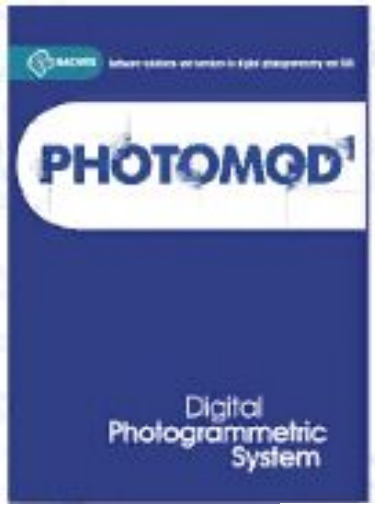
Foreign language adviser: **Trebuch Olga Sergeevna**

Izhevsk, 2020

Research goal: to study and master the digital photogrammetric system PHOTOMOD Lite 5.21Research

Research problem:

1. Analyze the literature in the field of photogrammetry.
2. To study the technologies of digital photogrammetric system PHOTOMOD Lite 5.21.
3. Master the process of digital photogrammetric processing in PHOTOMOD Lite 5.21 for further use in solving professional tasks;



PHOTOMOD Lite 5.21 is a free software package which has all features of PHOTOMOD

80 countries

800 companies, 8000 workplaces

Users

50% in Russia

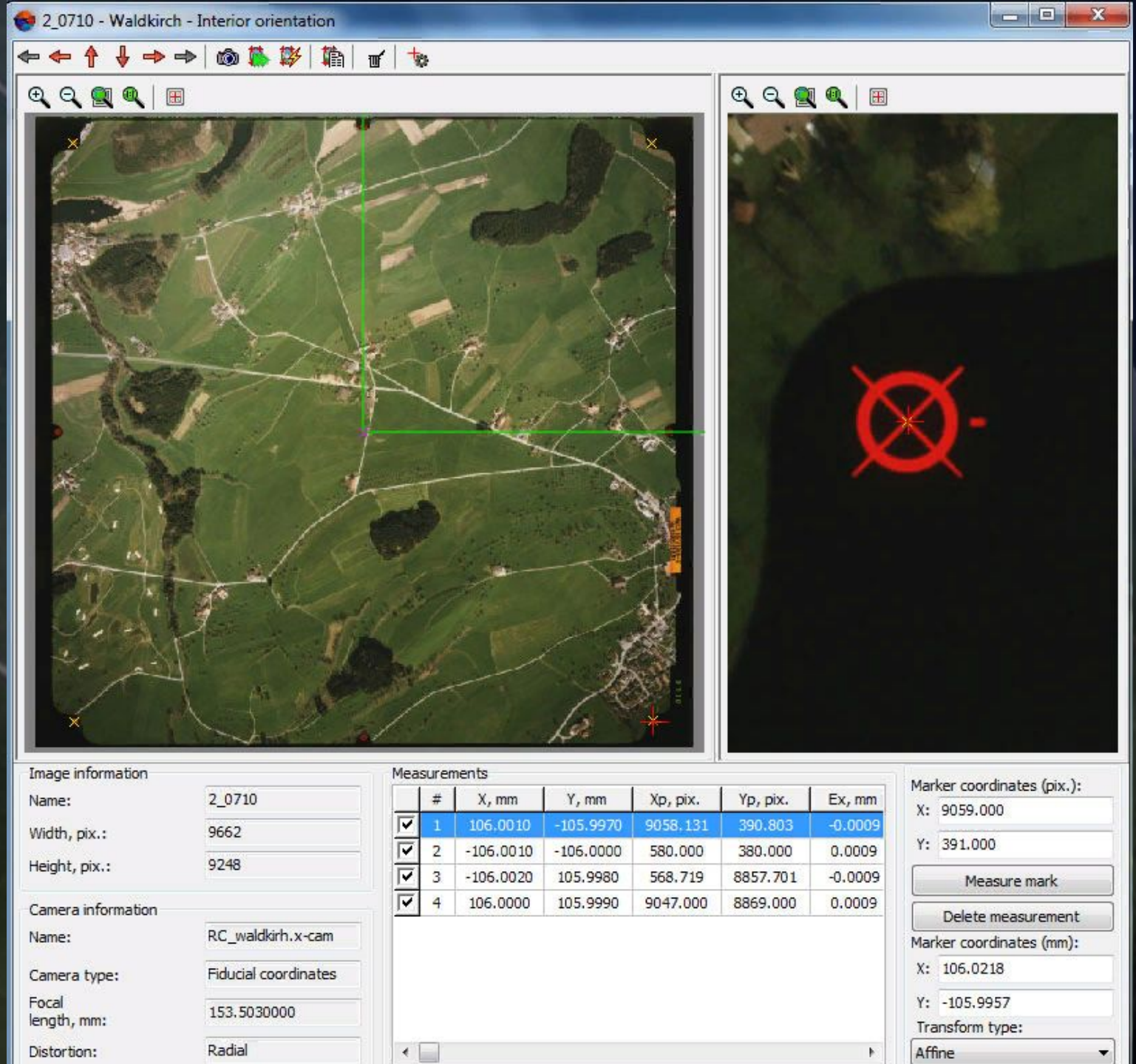
10% in the CIS

40% in other countries

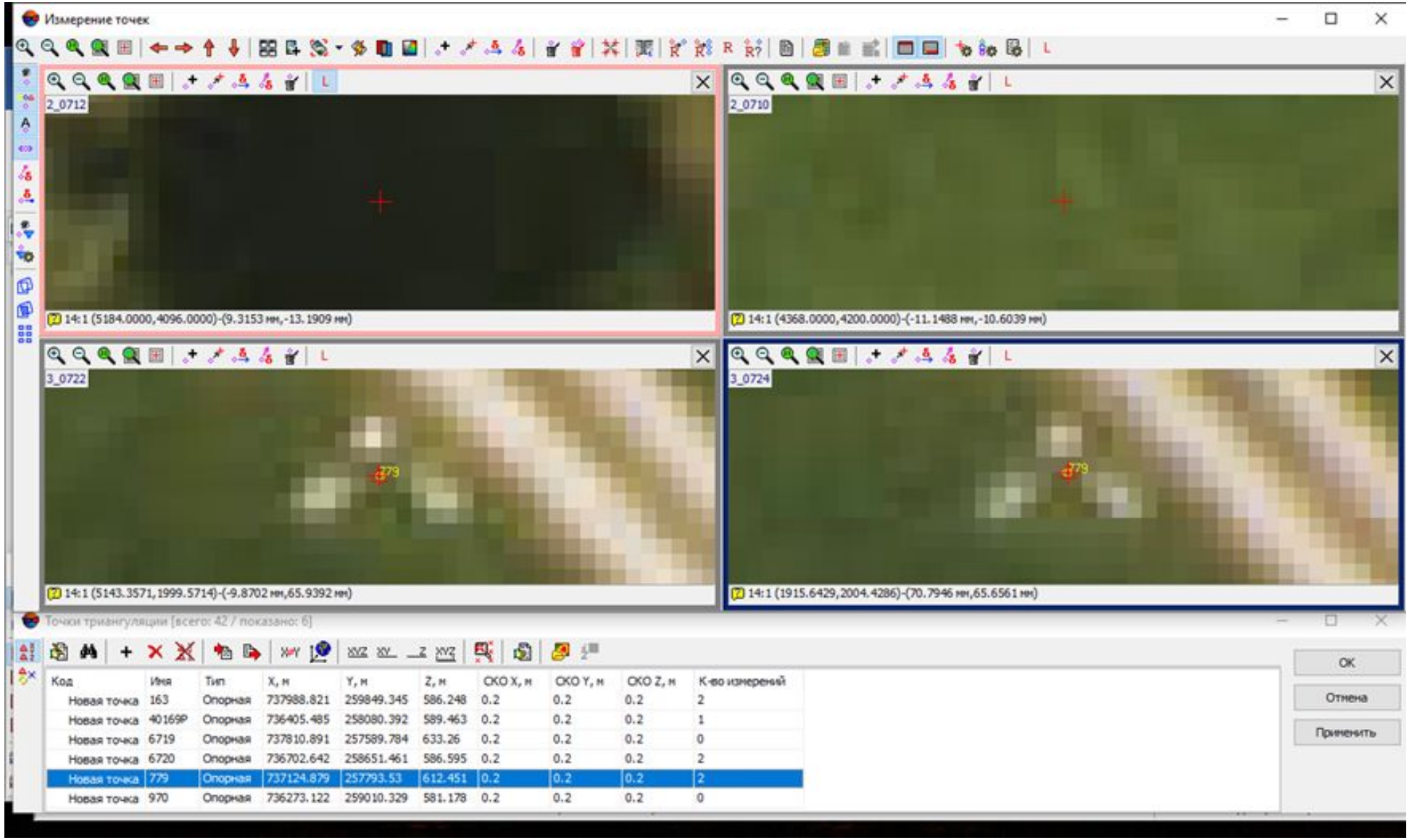
The PHOTOMOD software family comprises a wide range of products for the remote sensing data photogrammetric processing. This state-of-the-art software allows the extraction of geometrically accurate spatial information from almost all commercially available types of imagery, whether obtained by film or digital cameras, UAS, high resolution satellite scanners or synthetic aperture radars.

the process of

Interior orientation



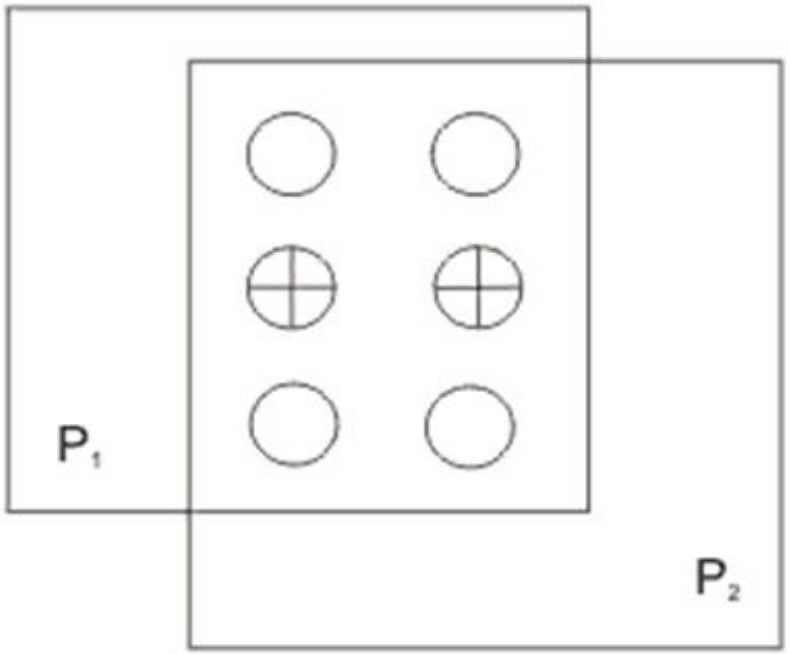
GCP measurement, Relative orientation

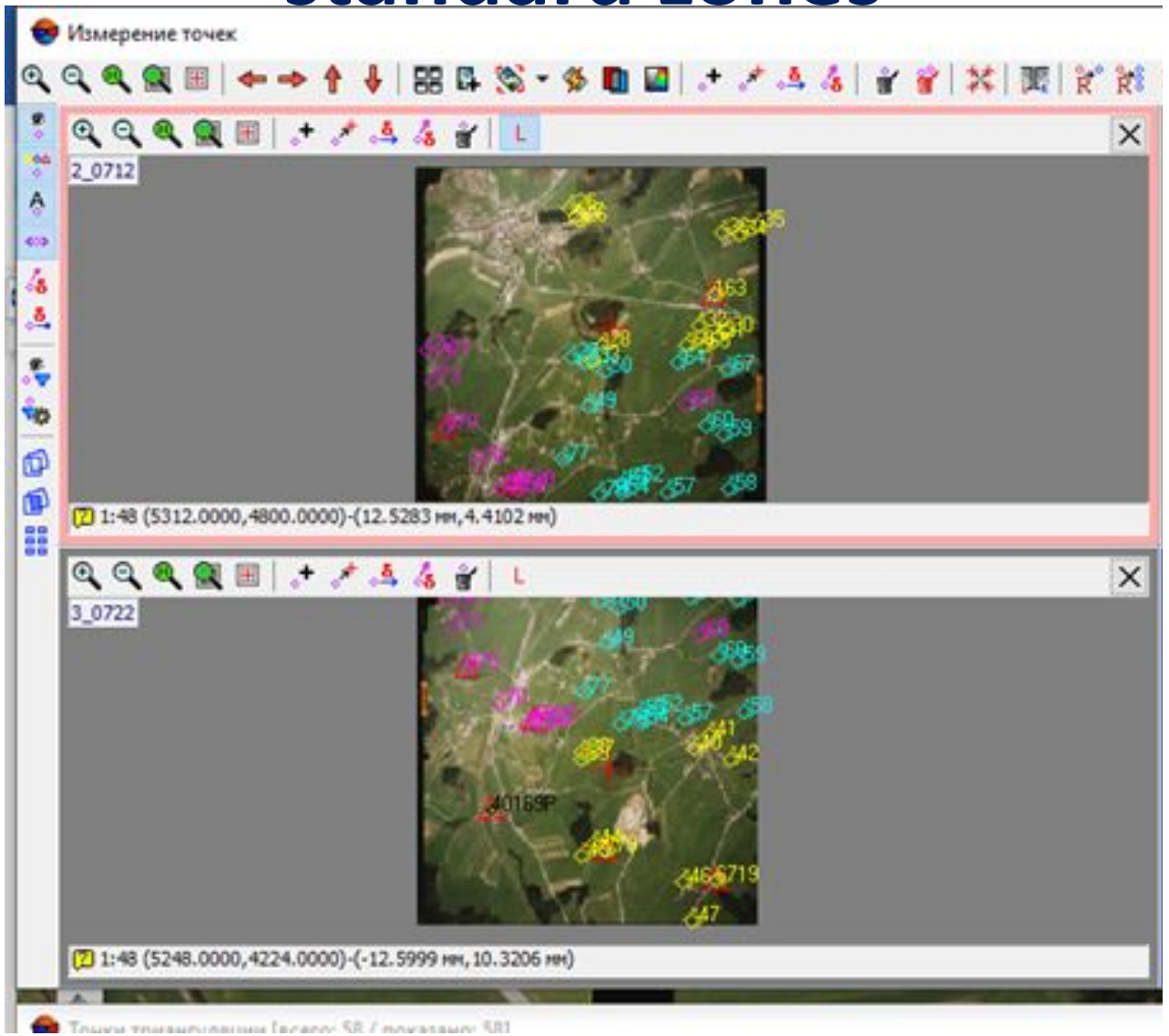


Код	Имя	Тип	X, м	Y, м	Z, м	СКО X, м	СКО Y, м	СКО Z, м	К-во измерений
Новая точка	163	Опорная	737988.821	259849.345	586.248	0.2	0.2	0.2	2
Новая точка	40169P	Опорная	736405.485	258080.392	589.463	0.2	0.2	0.2	1
Новая точка	6719	Опорная	737810.891	257589.784	633.26	0.2	0.2	0.2	0
Новая точка	6720	Опорная	736702.642	258651.461	586.595	0.2	0.2	0.2	2
Новая точка	779	Опорная	737124.879	257793.53	612.451	0.2	0.2	0.2	2
Новая точка	970	Опорная	736273.122	259010.329	581.178	0.2	0.2	0.2	0

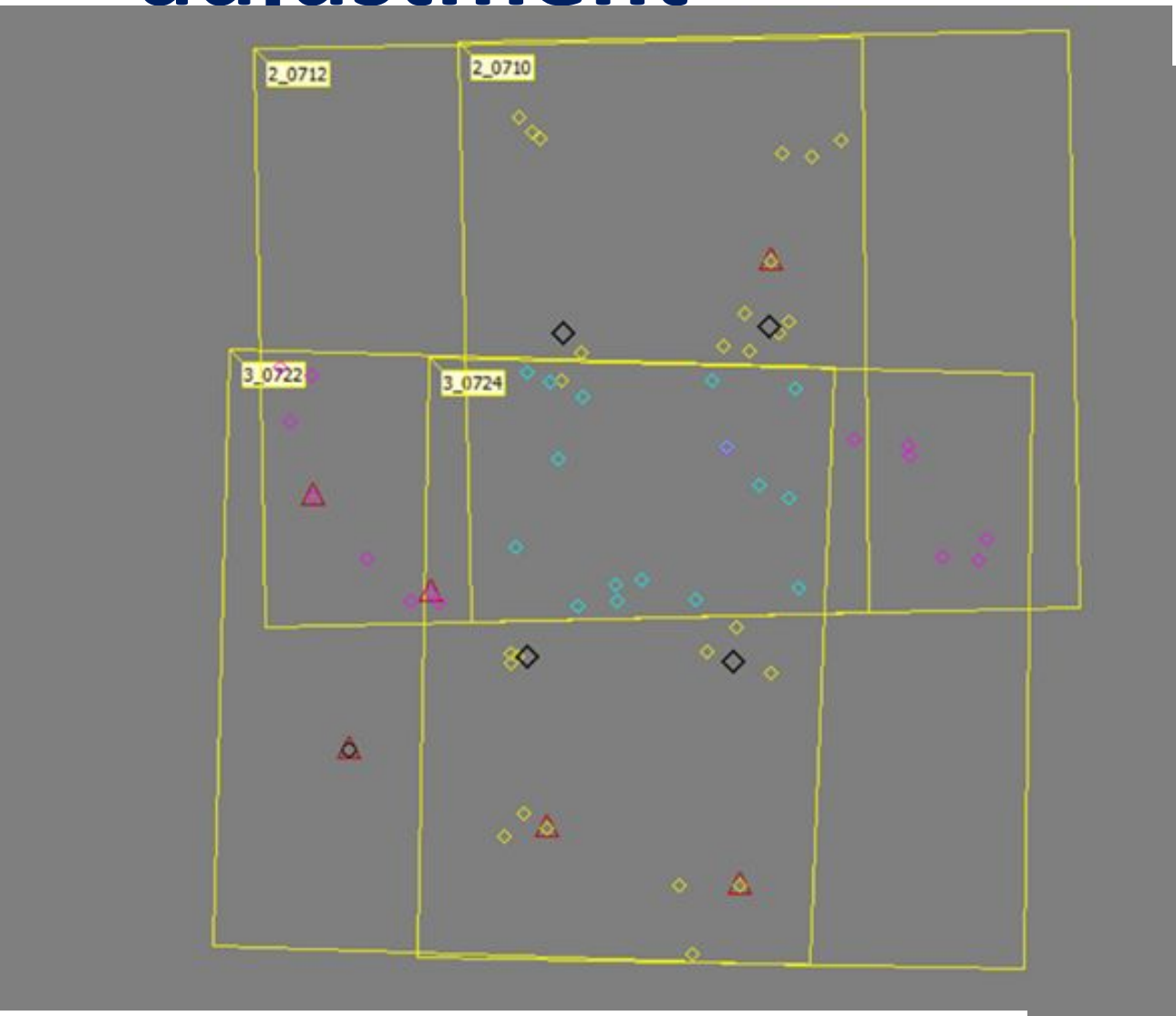
Measuring tie points in the standard zones

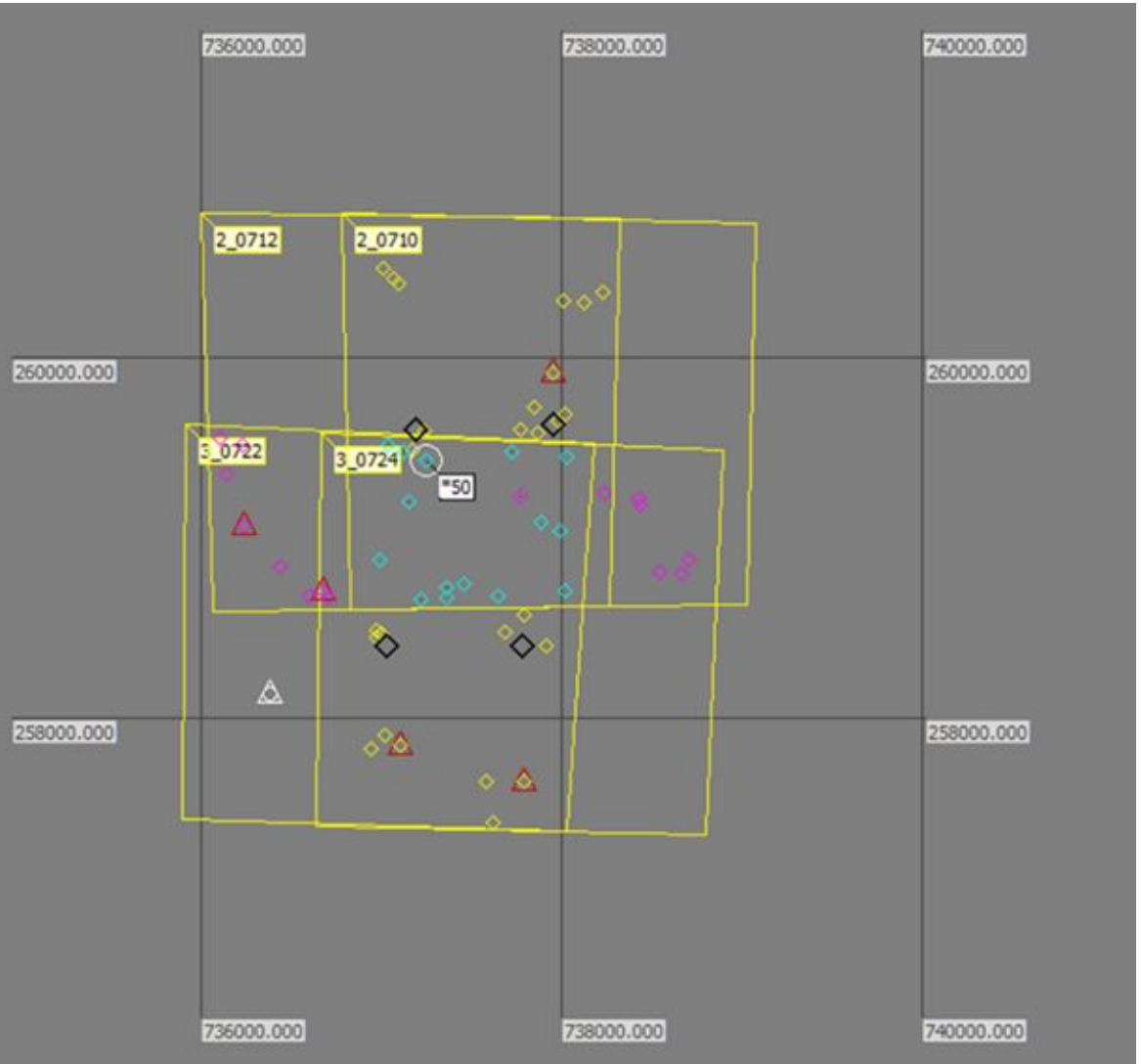
Scheme of standard zones location

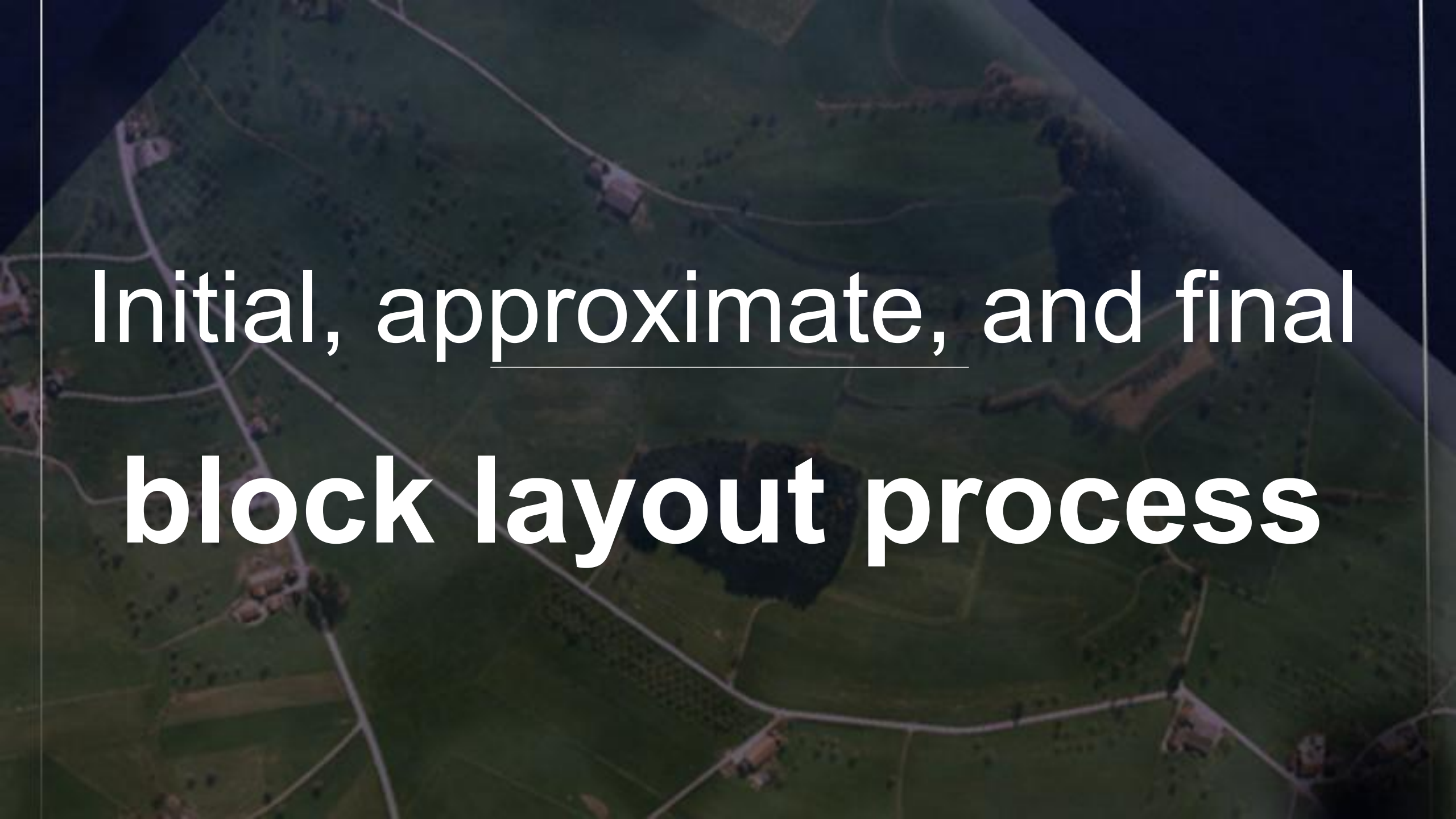




Block Scheme BEFORE and AFTER adiustment

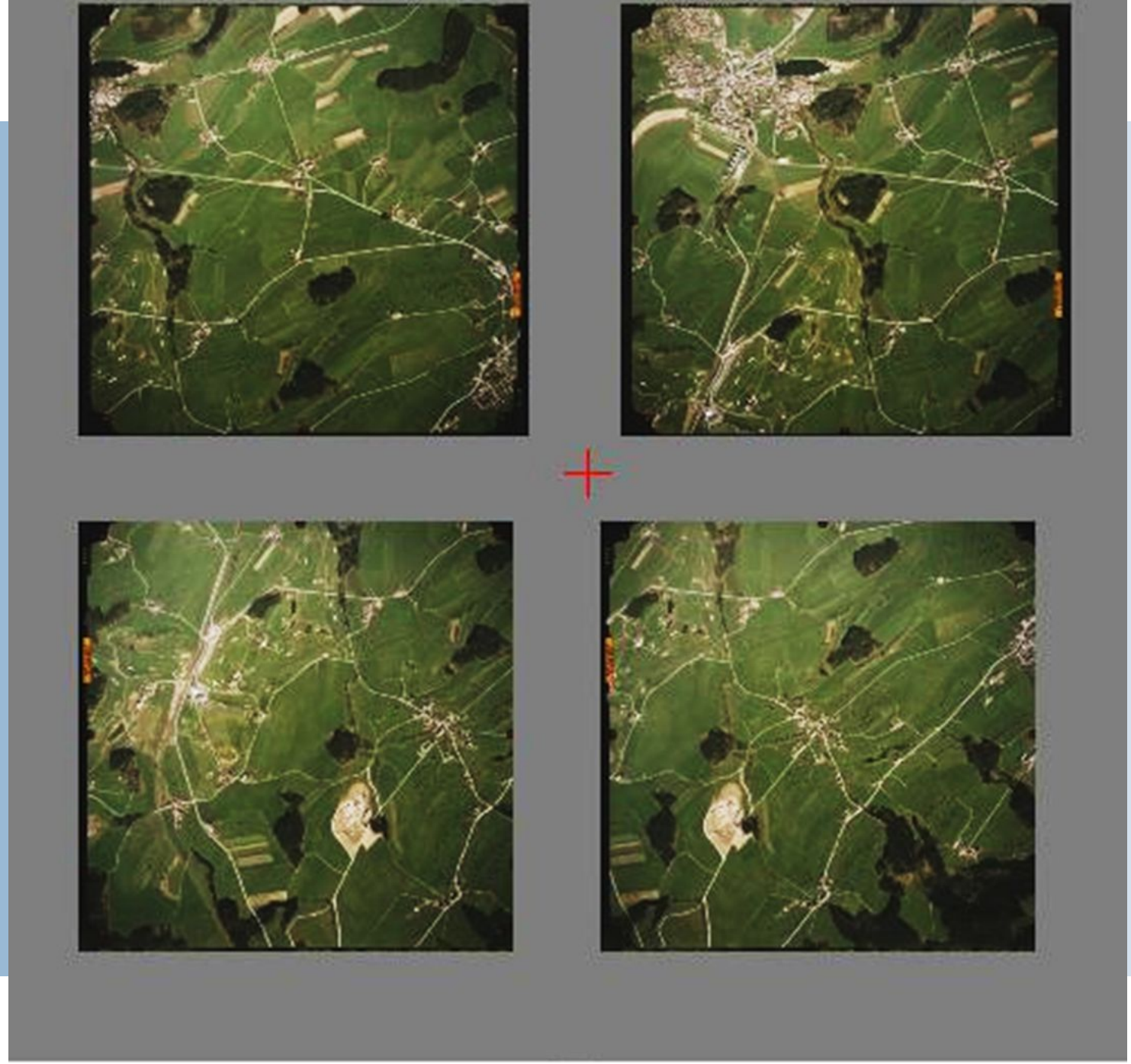





Initial, approximate, and final
block layout process

BLOCK SCHEME

Imported photos, no changes



BLOCK SCHEME

Block layout using:
-Initial approximation – overlap

The mismatch of roads is clearly visible

BLOCK SCHEME

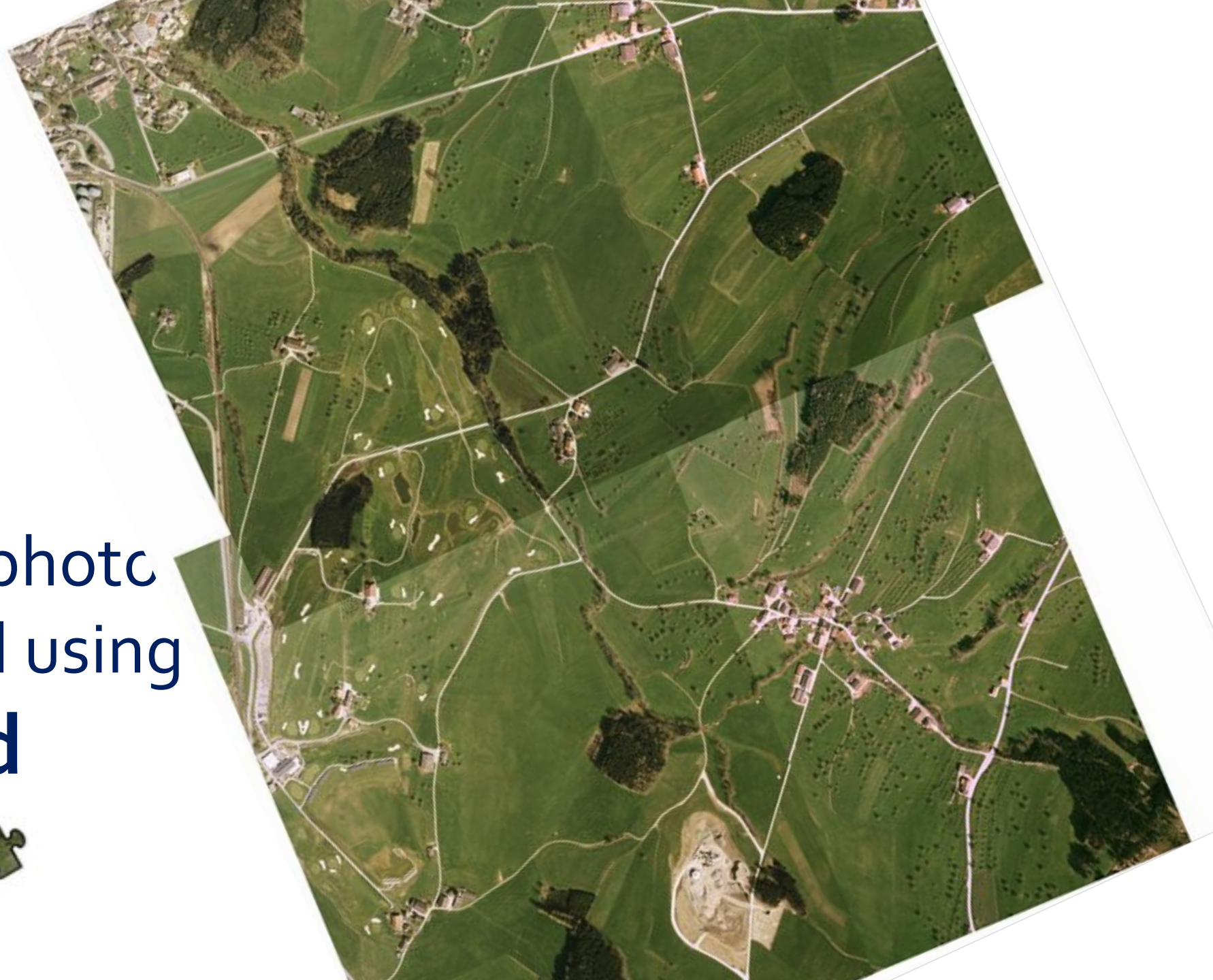
Block layout using:

-Initial approximation
-QuickTies
-Tie points
-GC points
-Imported exterior orientation

BLOCK SCHEME

Block layout using:

-Initial approximation
-QuickTies
-Tie points
-GC points
-Imported exterior orientation
-Adjustment results



Ready-made photo
scheme. Created using
the **Photomod**
GeoMosaic


Thanks for your attention!