

AGH

**AKADEMIA GÓRNICZO-HUTNICZA
IM. STANISŁAWA STASZICA W KRAKOWIE**

**AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY**

Katedra Geoinformacji, Fotogrametrii i Teledetekcji środowiska

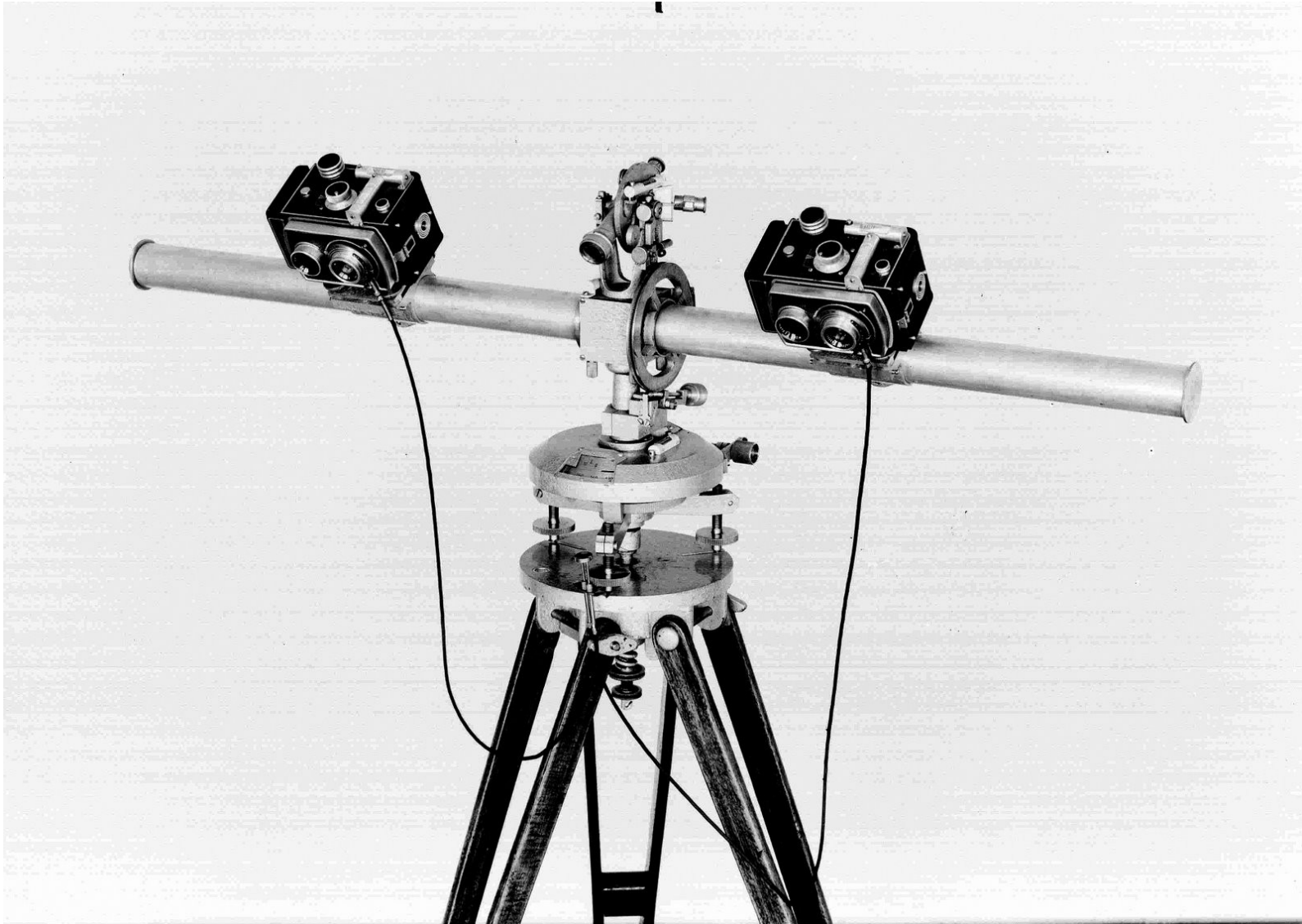
18.10.2019

Ostatnie zdjęcie Katedry Geodezji Górniczej przed
wyodrębnieniem się Katedry Fotogrametrii;
po prawicy prof. Zygmunta Kowalczyka – doc. Zbigniew Sitek

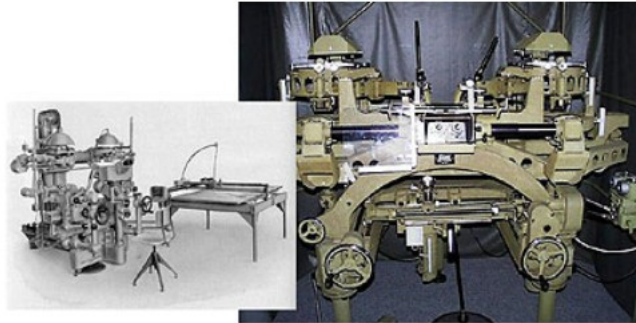


Młodzi asystenci prof. Zygmunta Kowalczyka: J. Jachimski, Z. Sitek, E. Puchała

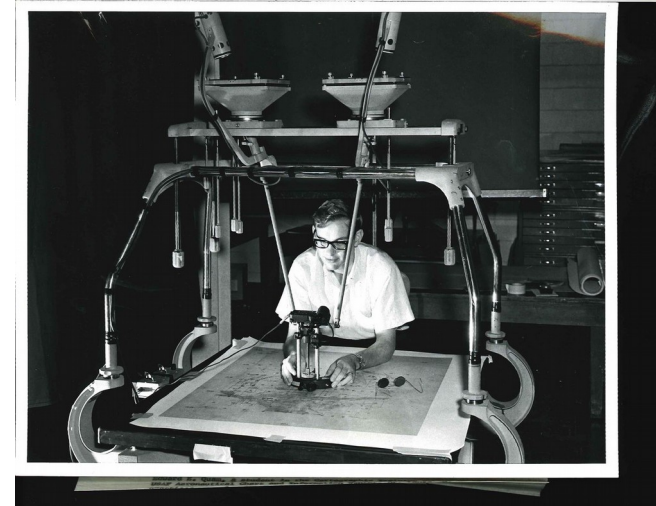




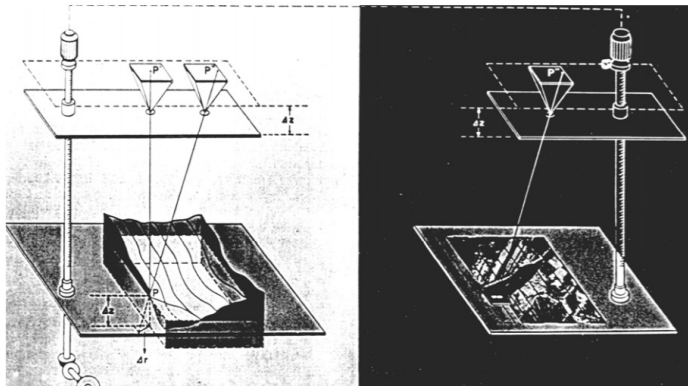
Fotogrametria era analogowa



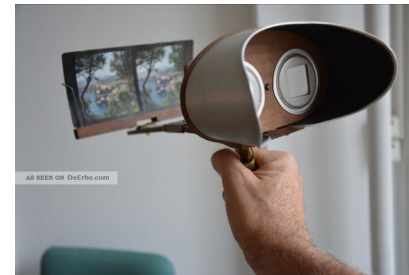
Rys. 3. Autograf A8 Wilda i stereoplanigraf Zeiss



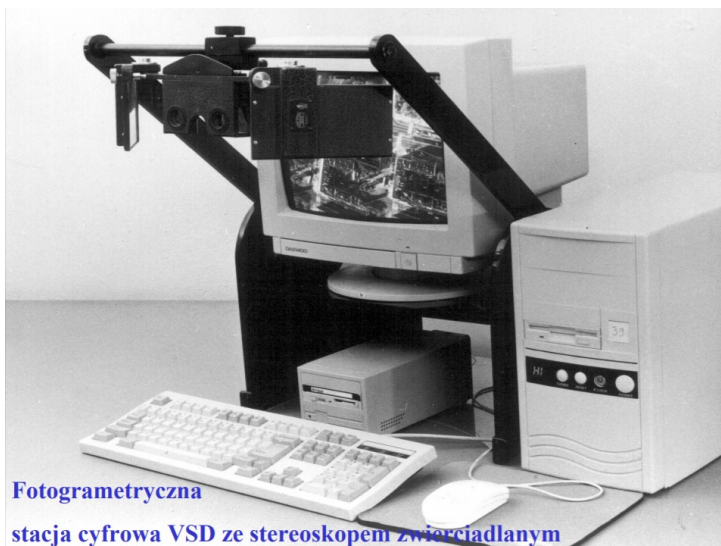
This is not from a sci-fi film, it's a Kelsh Stereoplotter in use at the @USArmy Map Service in the late 1960s. #TBT



Rys. 5.6. Zasada działania analogowego przetwornika ortofotoskopowego.



https://zasoby1.open.agh.edu.pl/dydaktyka/obliczenia_inzynierskie/a_fotogrametria/fotogrametria_rozdz5.pdf



Symposium PTF – Kraków 1984

Profesorowie: Sitek, Ney, Kowalczyk



XVI Kongres ISPRS – Waszyngton 1992

General Assembly – polska delegacja, od lewej: dr Linsenbarth, prof. Jachimski, prof. Sitek





AGH

Urodziny Profesora (maj 1988) – Zakład Fotogrametrii w komplecie



Urodzinowe garden-party w „zaczysku” Profesorostwa Anny i Zbigniewa Sitków, lipiec 1998



Kierownicy Zakładu/Katedry, Profesorowie



1951 – 1961 Jan Cisko

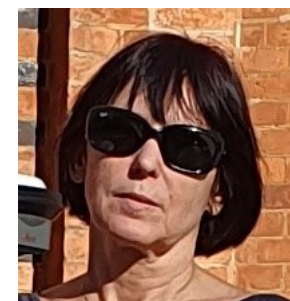
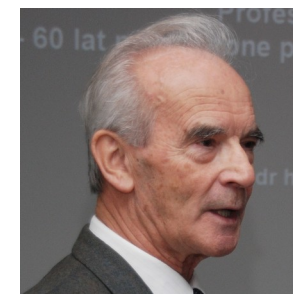
1962 – 1992 Zbigniew Sitek

1993 – 2006 Józef Jachimski

2006 – 2008 Jerzy Bernasik

2008 – 2016 Krystian Pyka

2016 – nadal Beata Hejmanowska





Katedra GFITS

Beata Hejmanowska



Krystian Pyka



Sławomir Mikrut



Urszula Marmol



Regina Tokarczyk



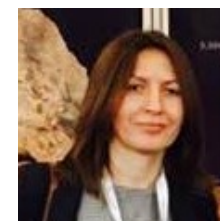
Antoni Rzonca



Wojciech Drzewiecki

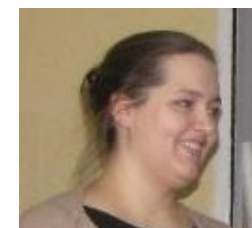


Tomasz Pirowski



Ewa Głowienka

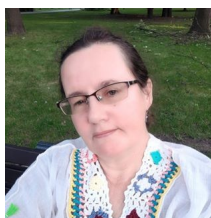
Elżbieta Pastucha



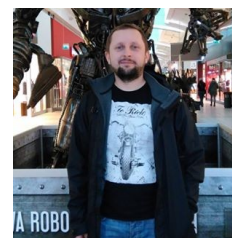
Natalia Borowiec



Mariusz Twardowski



Aleksandra Wagner



Robert Mazur



Jakub Kolecki



Adam Boroń



Stanisław Mularz



Władysław Mierzwa

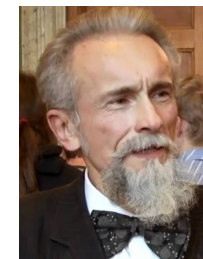


Andrzej Tokarczyk

**Fotogrametria
Teledetekcja
GIS
Inżynieria środowiska**



Stefan Radziszewski

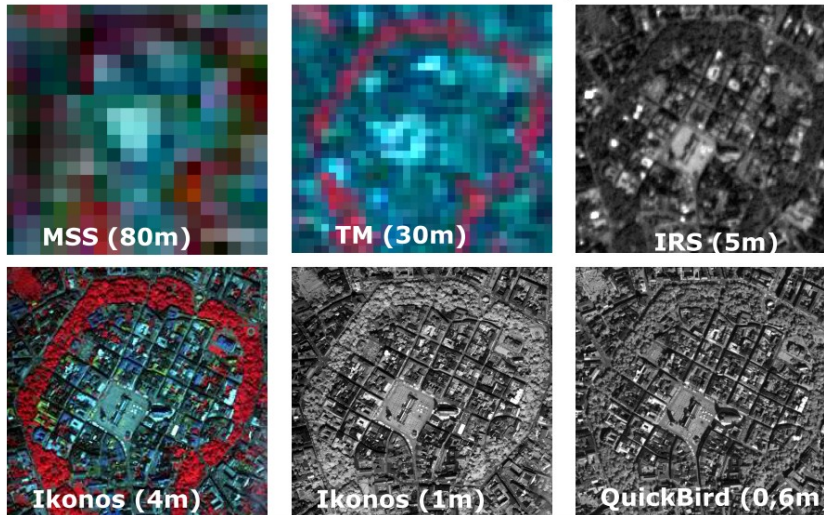


Jan Dobrowolski



Andrzej Wróbel

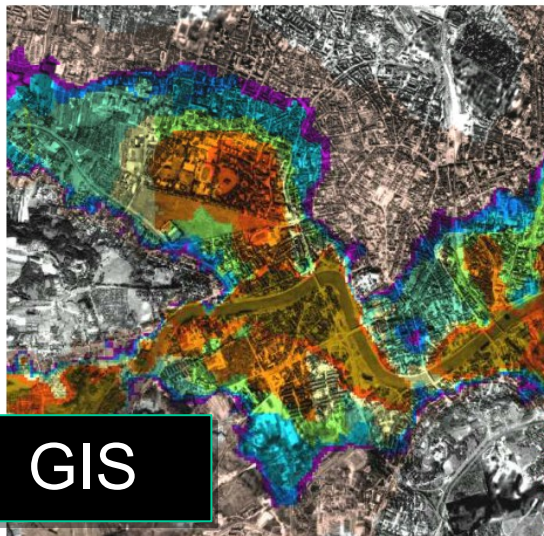
Porównanie rozdzielczości obrazów satelitarnych:



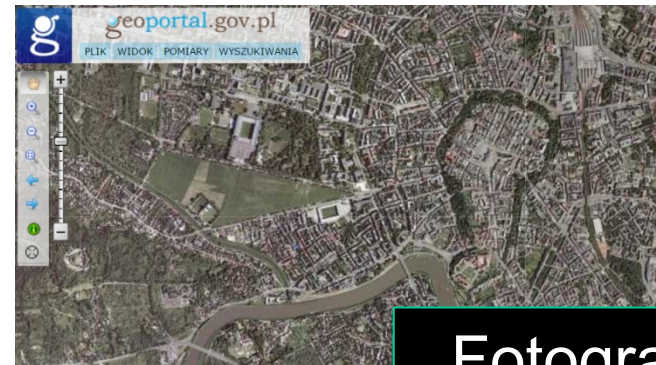
Teledetekcja Środowiska

ANALIZY PRZESTRZENNE- PRZYKŁADY:

Symulacja powodzi.



GIS



Fotogrametria



```

/**
 * File:   Buildings_1.cga
 * Created: 14 Nov 2015 16:18:13 GMT
 * Author: intel
 */

version "2015.2"

@Range (5,30)
attr Height = 8

@StartRule
BuildingFootprint -->
  extrude(Height)
  comp (f) {top:Roof|side:Wall}

Wall -->
  color (0,1,0)

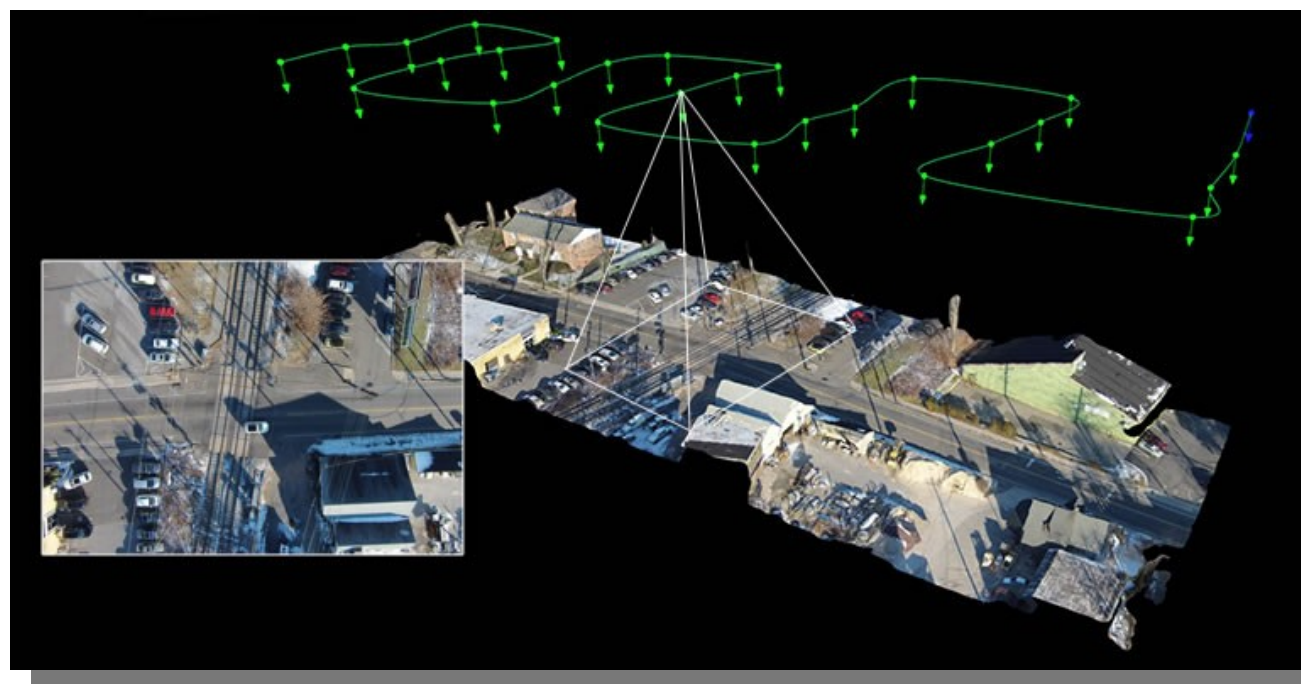
Roof -->
  color (1,0,0)
  
```



MATLAB

Programowanie

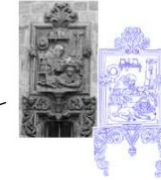
Fotogrametria era cyfrowa



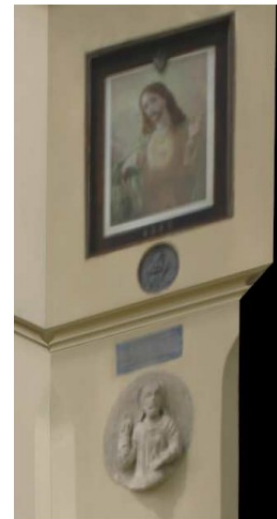
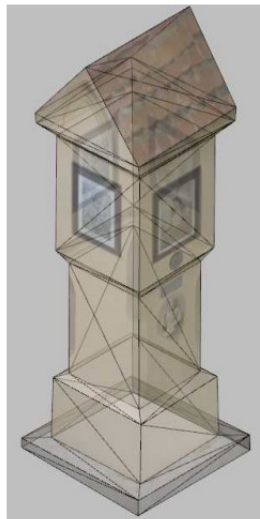
Fotogrametria bliskiego zasięgu



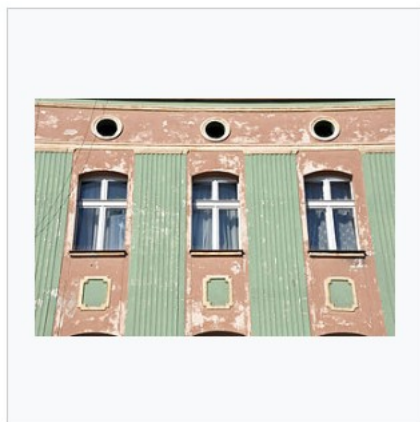
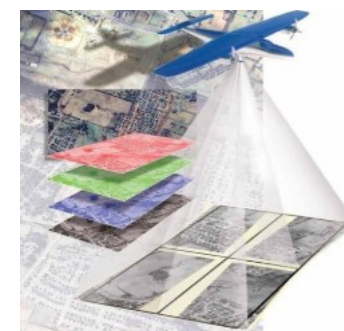
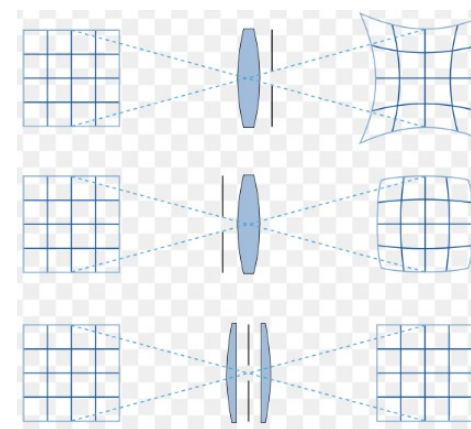
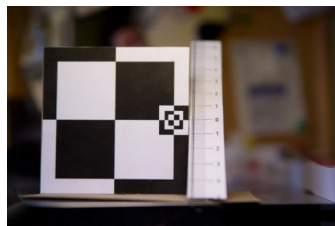
Kościół w Mondonedo (Hiszpania)



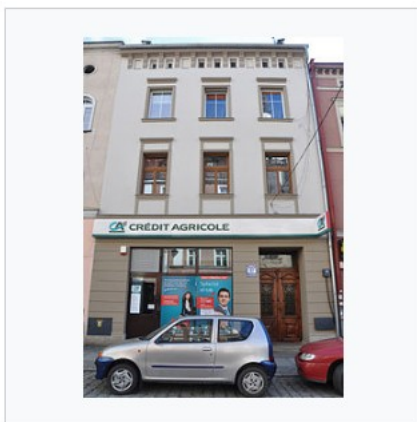
Fragment rzeźby z Kościoła
Św. Anny w Krakowie



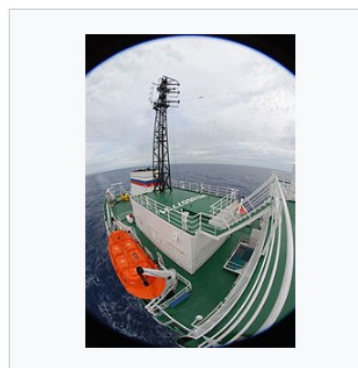
Kalibracja kamer



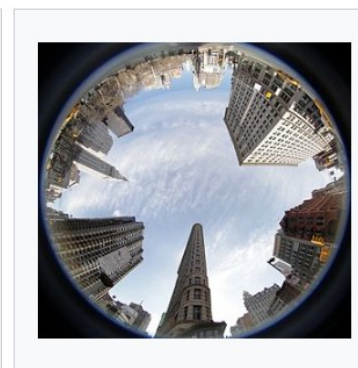
Dystorsja poduszkowa



Dystorsja beczkowa



Obiektyw rybie oko



Obiektyw rybie oko

Fotogrametria niskopułapowa



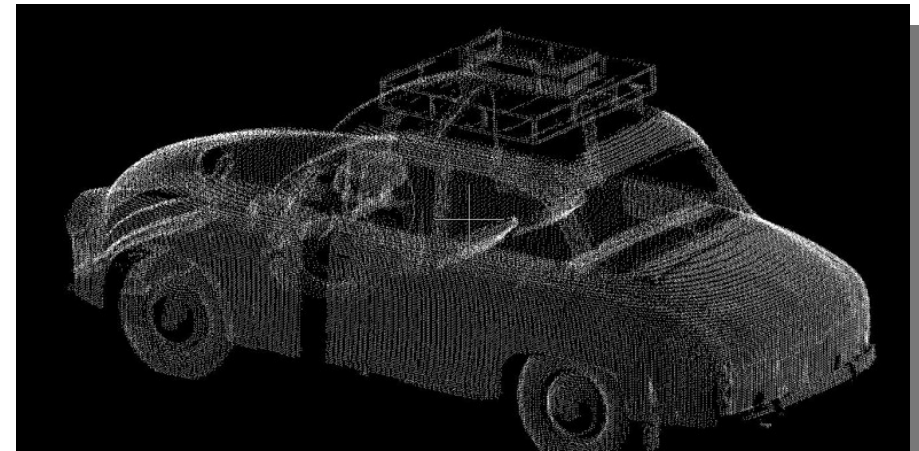
Naziemny i mobilny skanning laserowy



Leica
ScanStation C10



Faro Focus 3D





TELEDETEKCJA – boom

FCC Sentinel 2

17.10.2017

SENTINEL Hub Playground 2019-10-17 20 % Kraków, Małopolska

Rendering Effects

- Custom
- Natural color
Based on bands 4,3,2
- Color Infrared (vegetation)**
Based on bands 8,4,3
- False color (urban)
Based on bands 12,11,4
- Agriculture
Based on bands 11, 8, 2
- Vegetation Index
Based on combination of bands $(B8 - B4)/(B8 + B4)$
- Moisture Index
Based on combination of bands $(B8A - B11)/(B8A + B11)$

GENERATE

Get Sentinel and Landsat imagery in your GIS

500 m

OpenStreetMap © Sentinel Hub

TELEDETEKCJA - boom

Case Studies – Google Earth Engine | Hough Transform - Earth Engine

https://code.earthengine.google.com

Google Earth Engine

kraków

Help | beatastark

Scripts | Docs | Assets

Hough Transform

```
// An example finding linear features using the HoughTransform.
// Load an image and compute NDVI.
var image = ee.Image('LANDSAT/LC08/C01/T1_TOA/LC08_033032_20170719');
var ndvi = image.normalizedDifference(['B5', 'B4']);
// Apply a Canny edge detector.
var canny = ee.Algorithms.CannyEdgeDetector({
  image: ndvi
});
```

Inspector | Console | Tasks

Use print(...) to write to this console.

Layers | Mapa | Satelita

Google

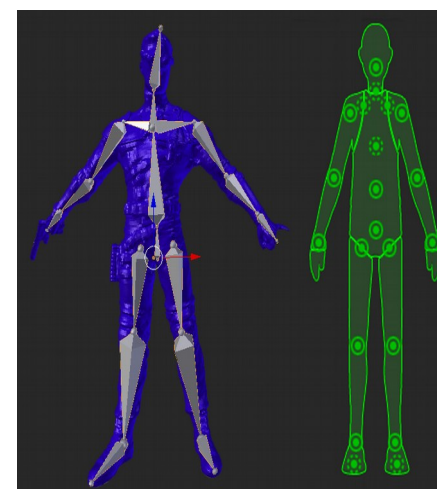
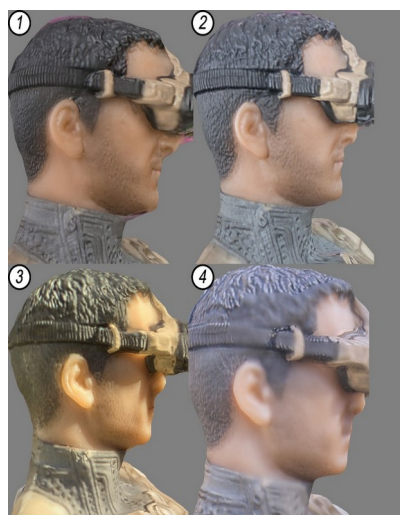
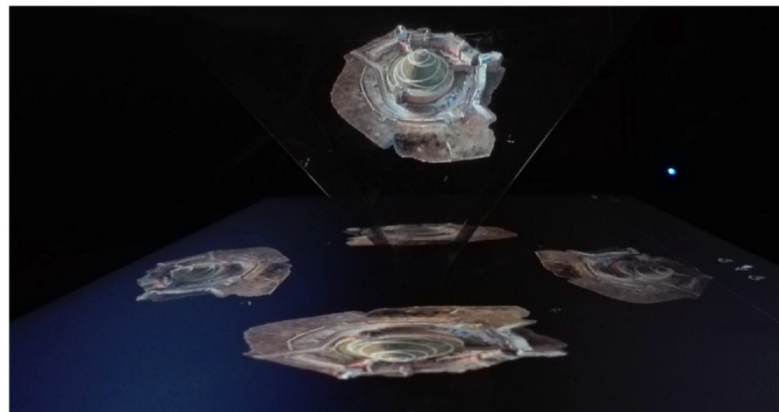
Zdjęcie satelitarne ©2018, DigitalGlobe, Landsat / Copernicus, U.S. Geological Survey, USDA Farm Service Agency | 1 km | Warunki korzystania z programu | Zgłoś błąd w mapach



Integracja danych Fotogrametria teledetekcja GIS www VR – Virtual Reality

<https://cht2.eu/>

<https://cht2.eu/application/files/9015/2712/1255/Kopiec.mp4>



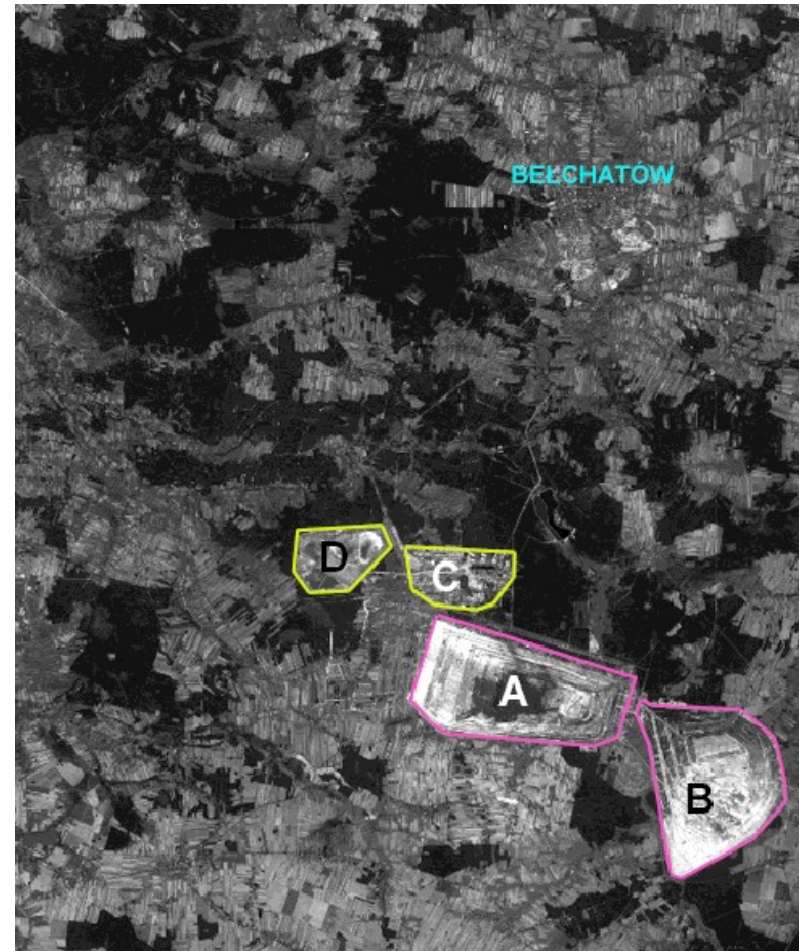
Praktyki



KWB Bełchatów



SPOT PAN image over the study area
(A - open-pit-mine; B - dump area;
C - electric power plant complex;
D - slag&ashes containers)



Rekultywacja

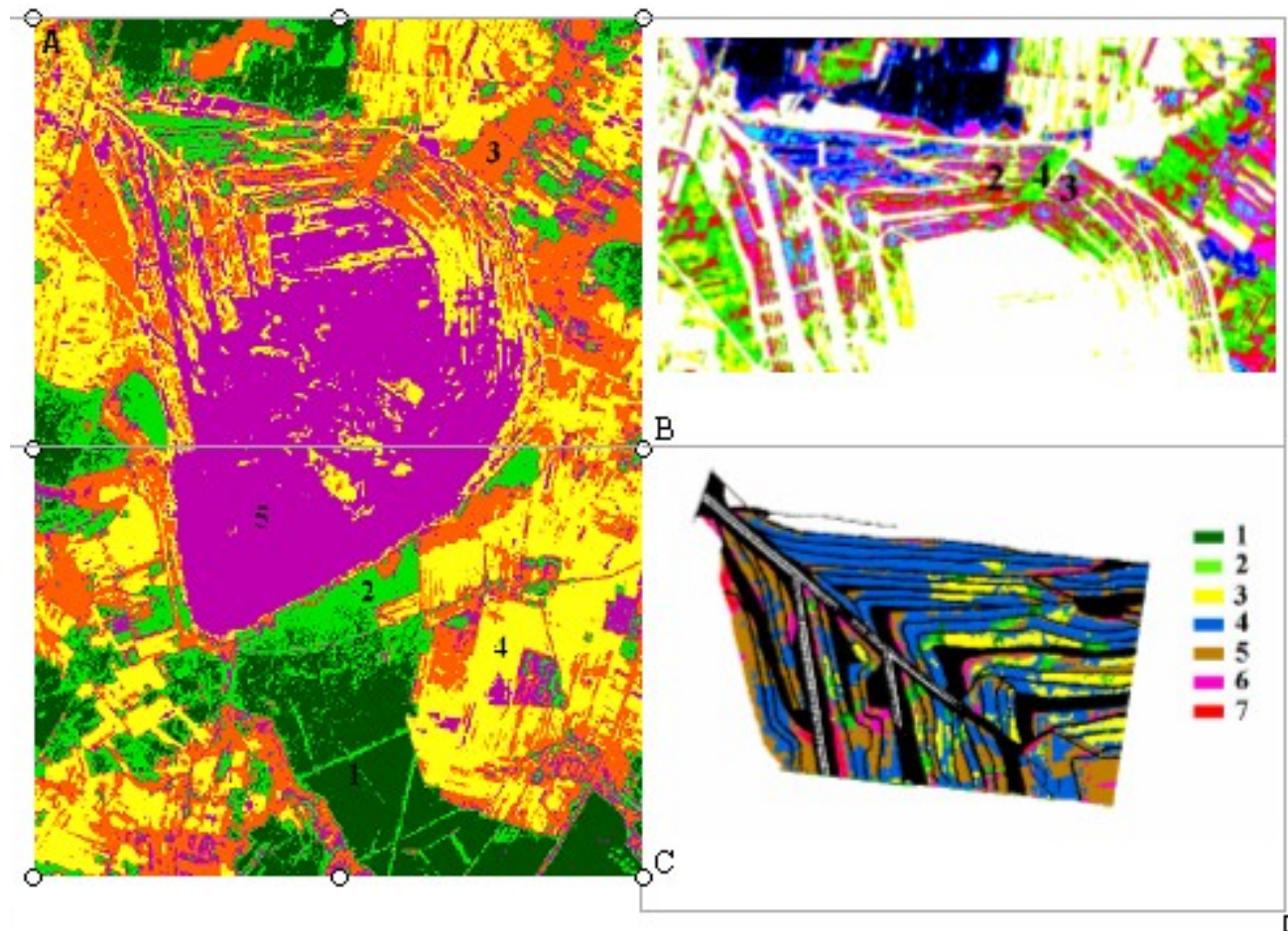
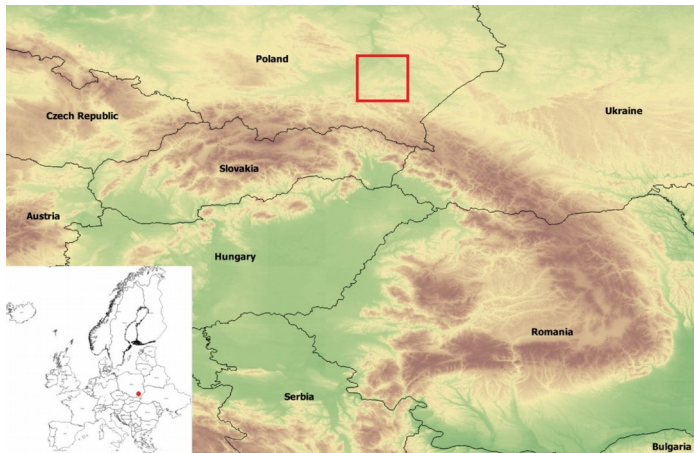


Abb.6 : Changes monitoring on the dump area in Belchatow open-pit mine:

- A - Map of land-cover over the dumping area (1-conifer forest; 2-deciduous forest; 3-grass-land&urban; 4-crop-land; 5-baregrounds);
- B - Map of vegetation cover the N-part of dumping area – supervised classification of SPOT (XS+P) (1-deciduous forest; 2-brushwood&grass; 3-brush & trees; 4-grass);
- C- Map of the vegetation cover changes of the N-W part of the dumping area (category: 1,2,3-changes in plus; 4-no changes; 5,6,7-changes in minus).



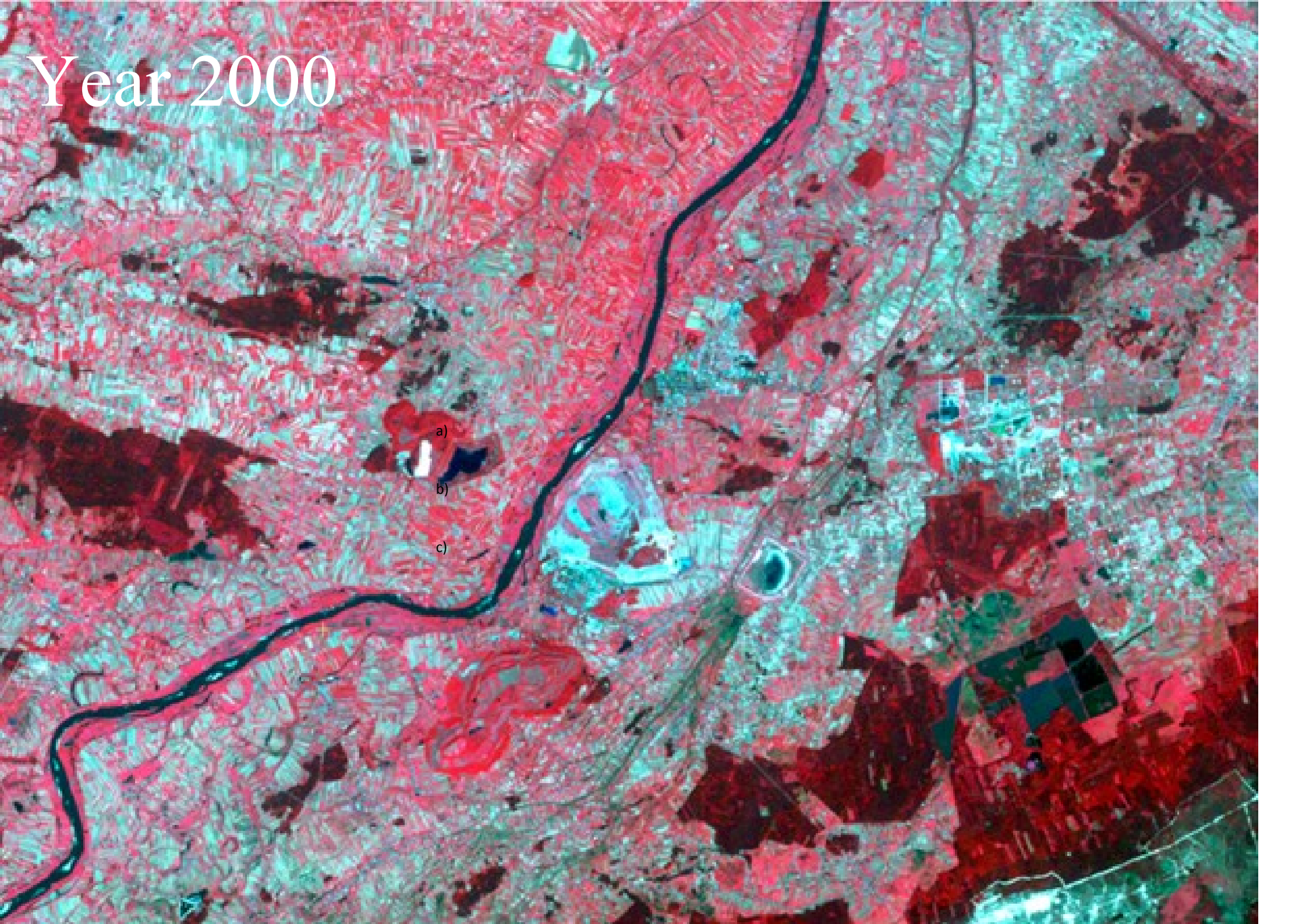
The Sulfur Mine District has been using the sulfur bed for a period over 30 years, resulting in significant changes in the natural environment, and in particular by:

- Atmospheric pollution of sulfur oxides and hydrogen sulphide
- Pollution of soil with sulfur and its compounds
- Contamination of surface waters
- Contamination of groundwater
- Transformation of the surface of mining fields

Hejmanowska B., Głowienka E., Michałowska K.



Year 1987

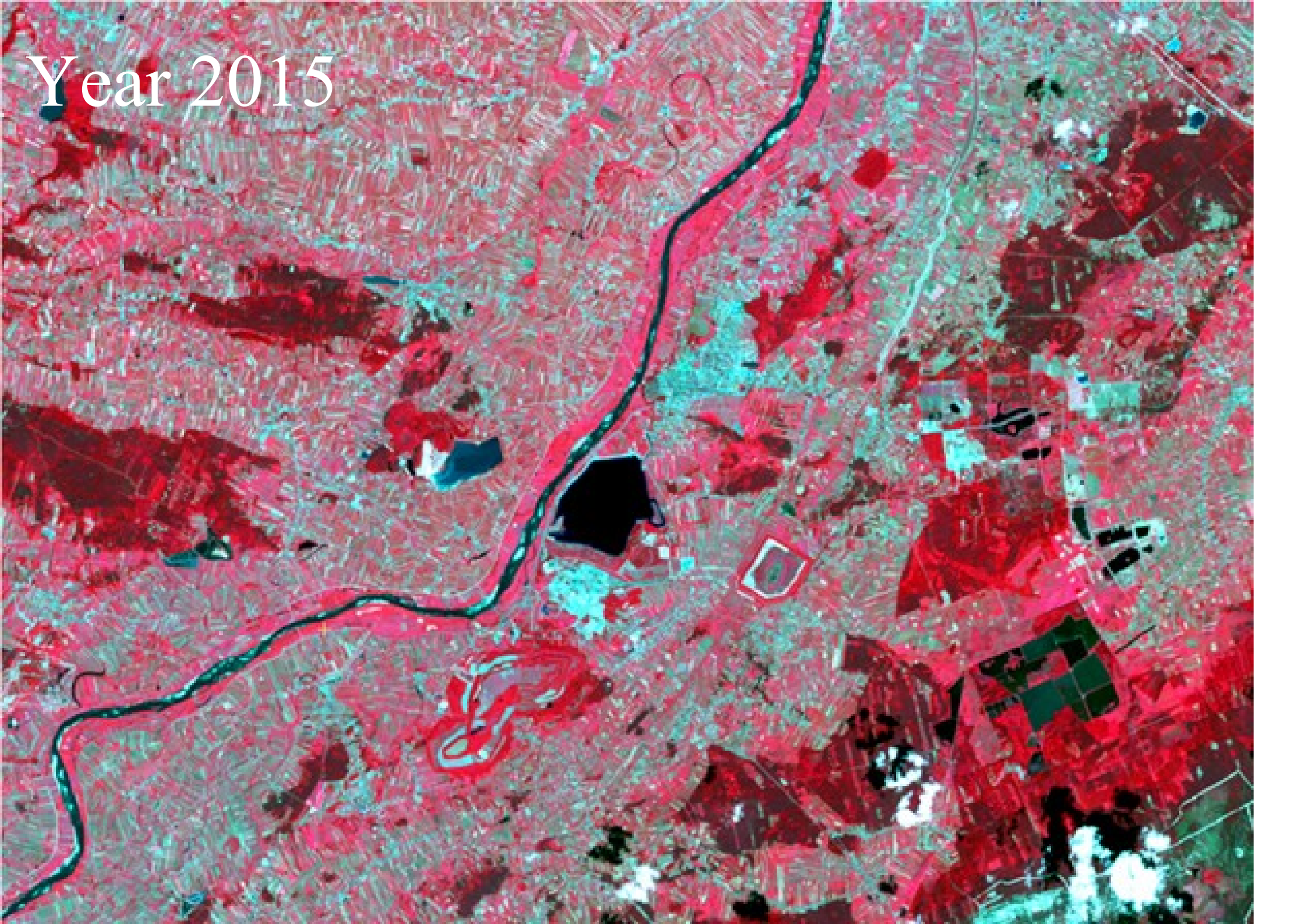


Year 2000

a)

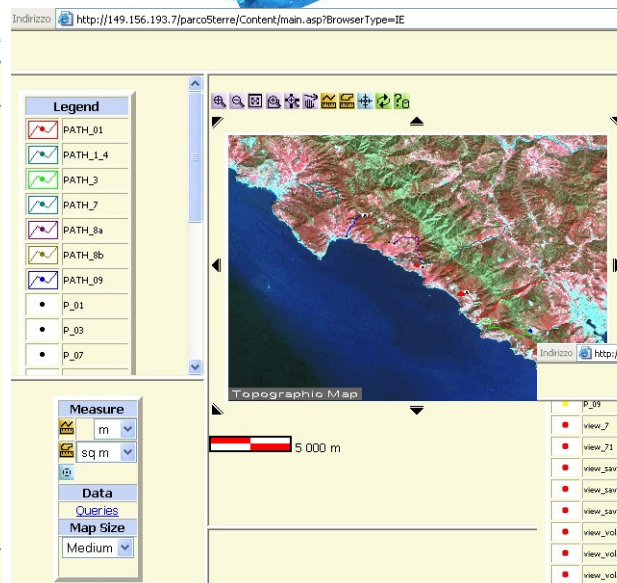
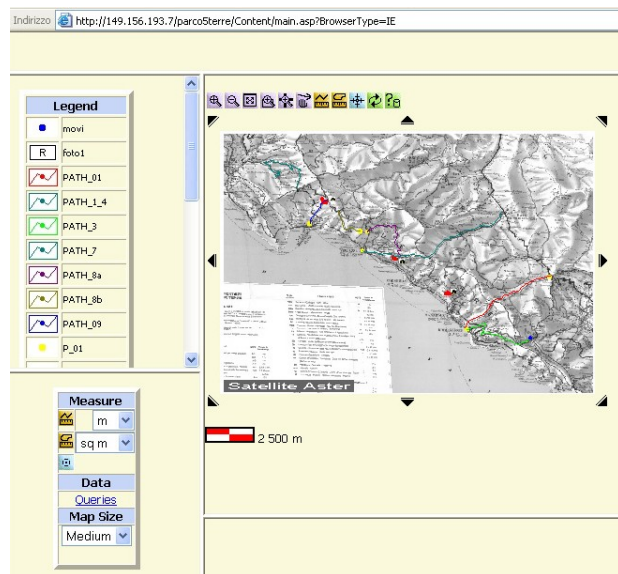
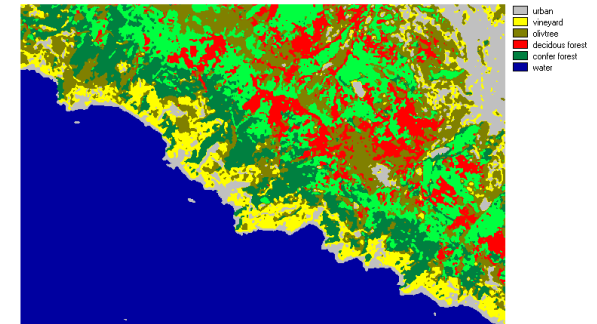
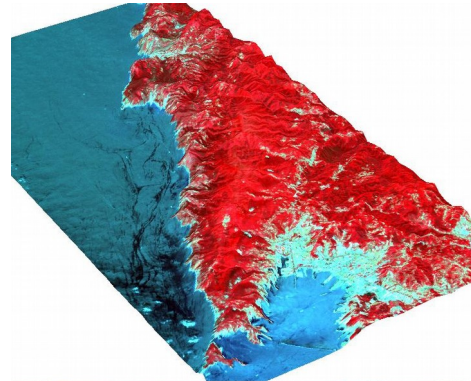
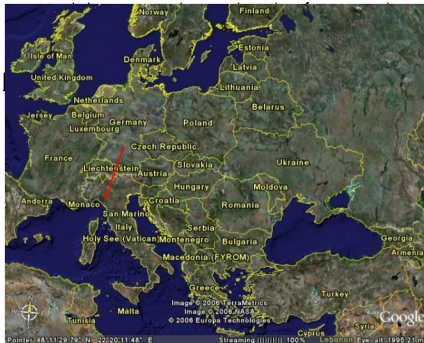
b)

c)

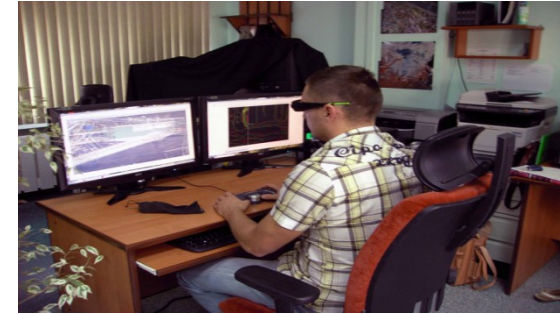


Year 2015

E.U. Program Culture 2000 : “ SMART HISTORY “ ‘From Smart History towards common European Heritage by a preservation model of CINQUE TERRE NATIONAL PARK – Italy ‘

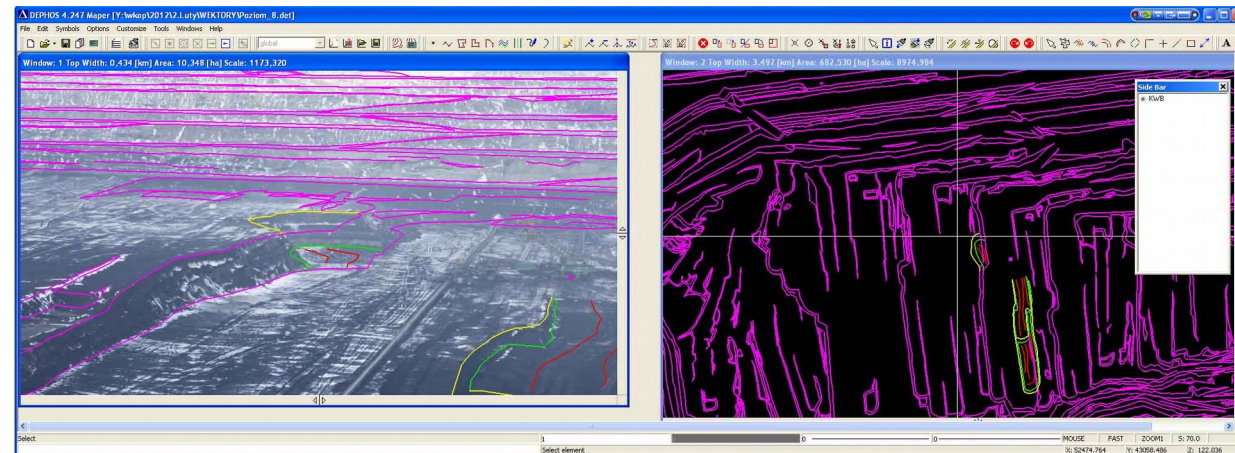


Zastosowanie fotogrametrii cyfrowej KWB Bełchatów

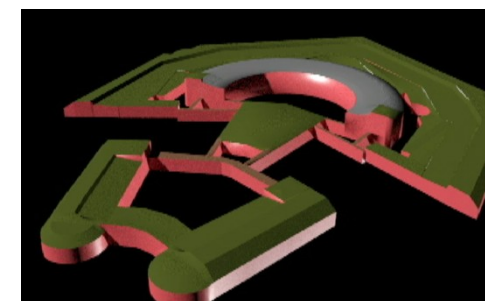


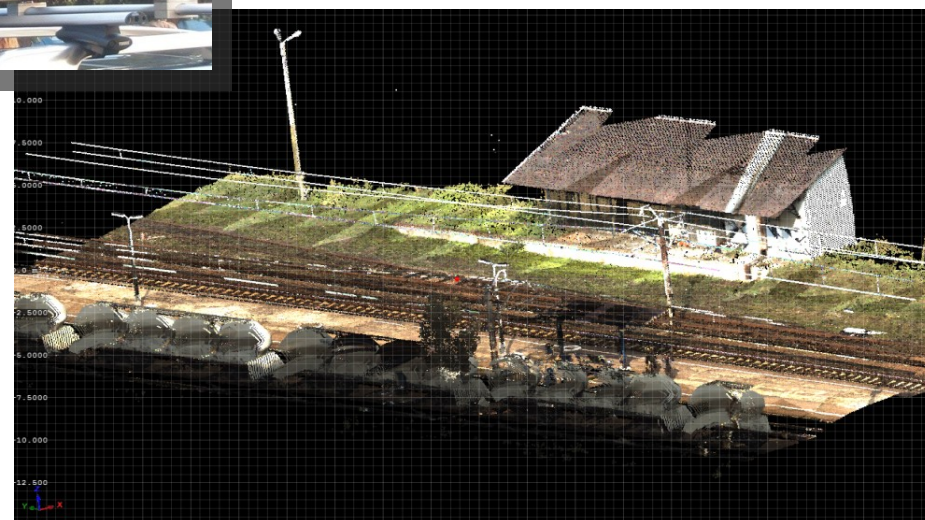
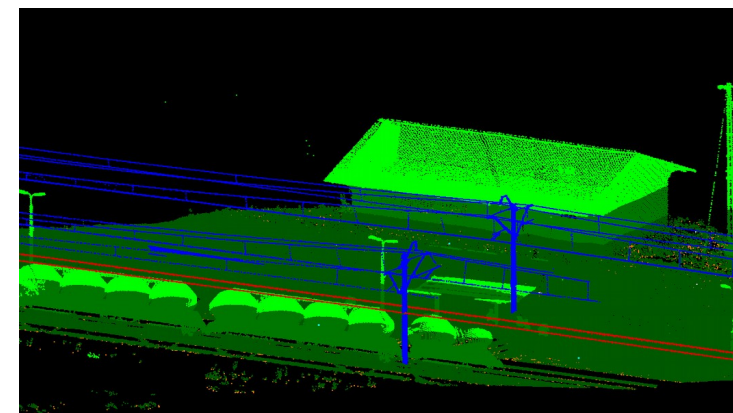
Fotogrametryczna stacja cyfrowa DEPHOS

Kamera AIC Modular LS P45



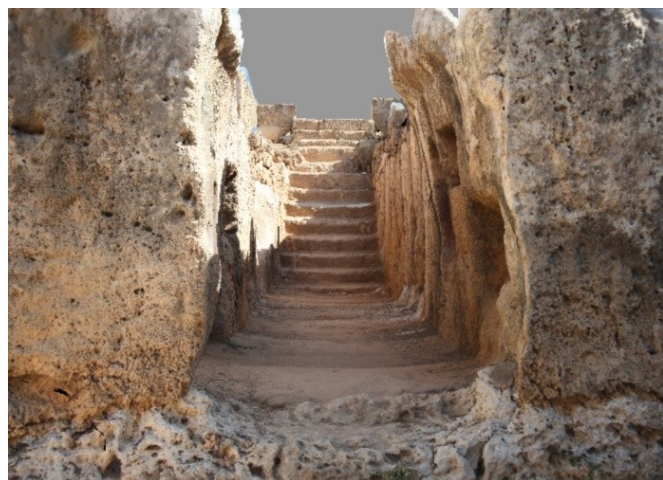
2016-2018





PAPHOS AGORA PROJECT (PAP)

PAPHOS AGORA AND BEYOND: MATERIAL REMAINS OF ECONOMIC INFRASTRUCTURE
AND ACTIVITY OF THE HELLENISTIC AND ROMAN CYPRUS CAPITAL
BASED ON INTERDISCIPLINARY RESEARCH





Joint Reseach Center
ISPRA Włochy
Flemish Institute for
Technological Research

.....



TU Wien
Joint Reseach Center
ISPRA Włochy
ETH Szwajcaria

.....



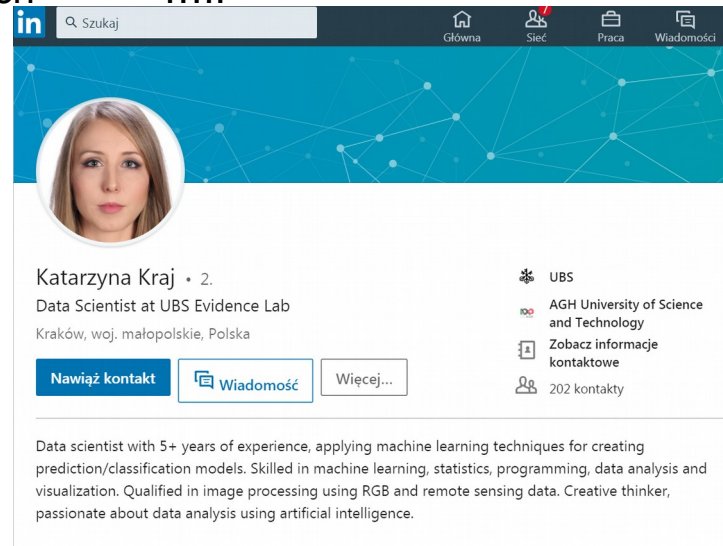
Joint Reseach Center
ISPRA Włochy
University of Wageningen
Akara EC expert

.....



TU Wien
Fondazione Bruna Kessler Trento
IGN (Institut national de l'information
géographique et forestière)

.....

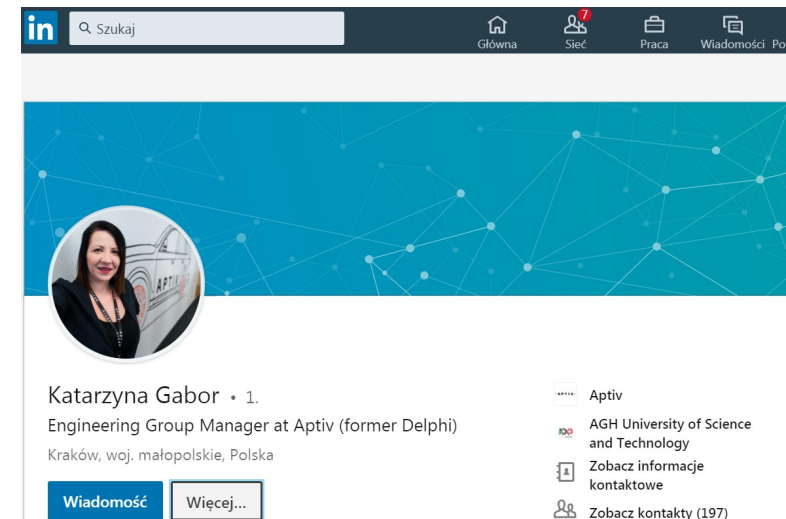


Katarzyna Kraj • 2.
Data Scientist at UBS Evidence Lab
Kraków, woj. małopolskie, Polska

[Nawiąż kontakt](#) [Wiadomość](#) [Więcej...](#)

UBS
AGH University of Science and Technology
Zobacz informacje kontaktowe
202 kontakty

Data scientist with 5+ years of experience, applying machine learning techniques for creating prediction/classification models. Skilled in machine learning, statistics, programming, data analysis and visualization. Qualified in image processing using RGB and remote sensing data. Creative thinker, passionate about data analysis using artificial intelligence.



Katarzyna Gabor • 1.
Engineering Group Manager at Aptiv (former Delphi)
Kraków, woj. małopolskie, Polska

[Wiadomość](#) [Więcej...](#)

Aptiv
AGH University of Science and Technology
Zobacz informacje kontaktowe
Zobacz kontakty (197)

AKREDYTACJA KIERUNKU GEODEZJA I KARTOGRAFIA Wielkiej Brytanii



Certificate of Accreditation

This is to certify that the

BEng in Geodesy and Cartography

at

***AGH University of Science and
Technology***

*Has been accredited as meeting the requirements of
the
Chartered Institution of Civil Engineering Surveyors*

The accreditation is valid until 31 May 2020

Harry Bell FCInstCES
President



Chartered Institution of CIVIL ENGINEERING SURVEYORS

Dominion House, Sibson Road, Sale, Cheshire M33 7PP United Kingdom