Activities of State Geodetic Administration in CROLIS
LIFE 19 GIC/HR/001270

Tomislav Ciceli, Ljerka Marić
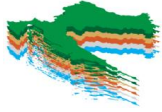
Who we are?

National Mapping and Cadastre Agency for authoritative spatial data

Head Office in Zagreb

20 Regional Cadastral Offices

92 Branch Offices

Approx. 1200 employees

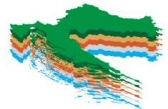Zagreb: City Office for Cadaster and Geodetic activities
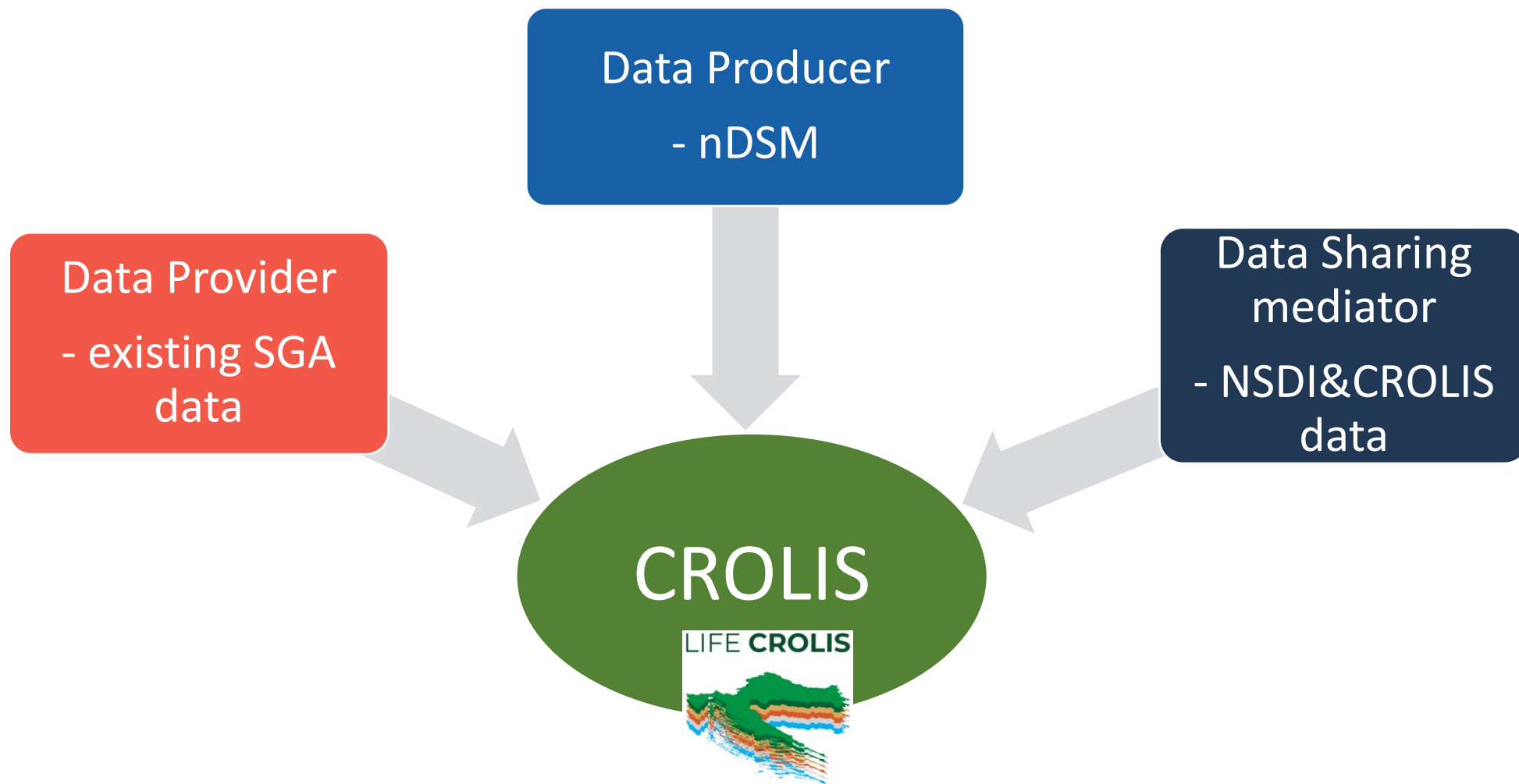
What is our business?

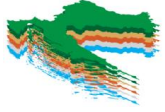## Create authoritative spatial data on National level

- Real-estate cadastre
- State survey
- Register of Spatial Units
- Register of Geographical Names
- Register of Buildings
- Infrastructure cadastre
- …

- National Spatial Data Infrastructure
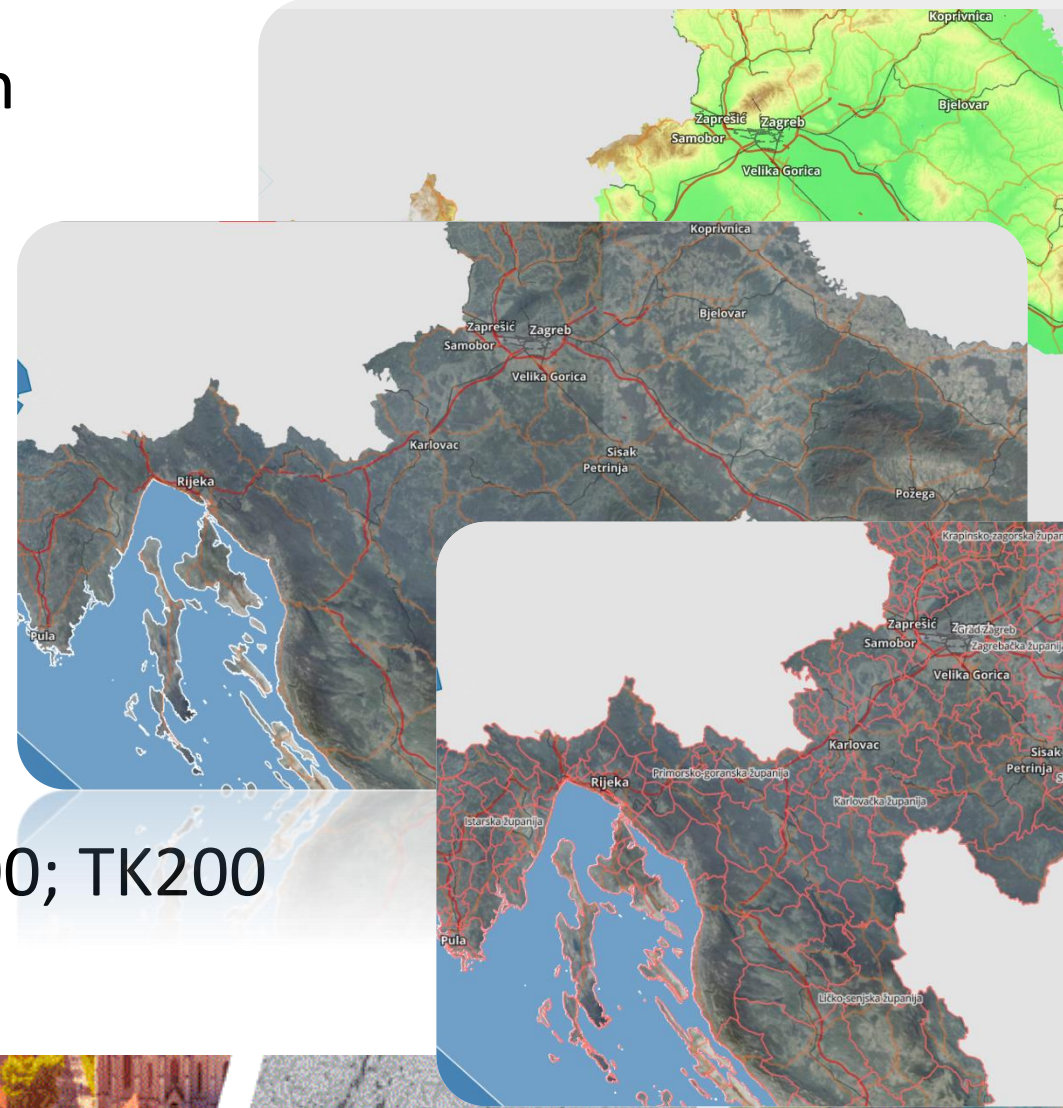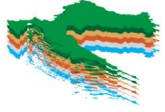
SGA role in CROLIS

Data Provider

Basic layers in CROLIS information system

- Digital orthophoto; DOF5

- Aerial photos; 1968

- Digital Tearrain Model; DTM

- Digital Surface Model; DSM

- Register of spatial units

- Digital Cadastral Plan; DCP

- Basic topographic database; BTT

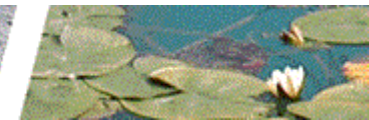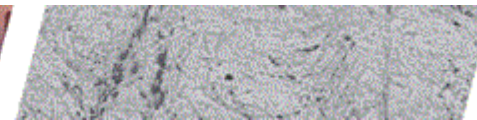- Detailed topographic maps; TK25; TK100; TK200

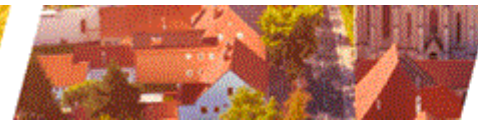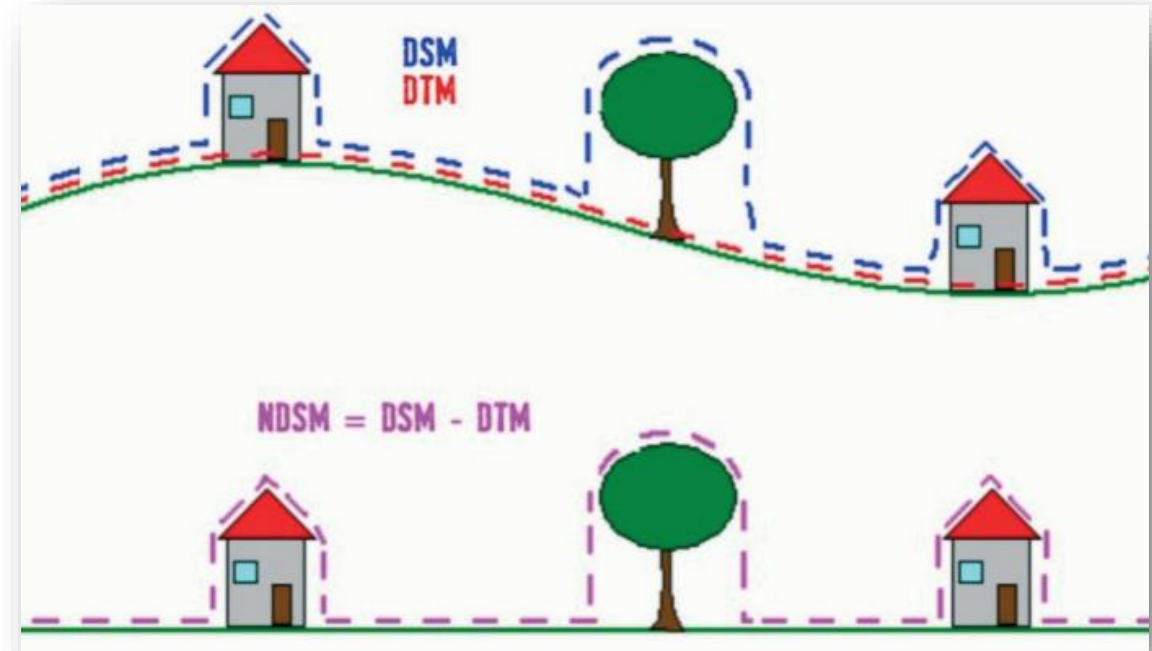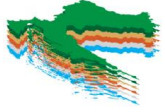# Data Producer

Normalised Digital Surface Model (nDSM)

Difference between DSM and DTM (DMR)

Emphasizes objects in relative relation to the ground (artificial objects and vegetation; trees or bushes) or objects on the ground (flat areas, road,...)

Input data: Digital Surface Model

- TREx program

- TanDEM-X the only one of its kind capable of producing altitude data at this quality and resolution on a global scale.

- IFSAR (Interferometric synthetic aperture radar) – regardless of the time of day and night and regardless of the weather
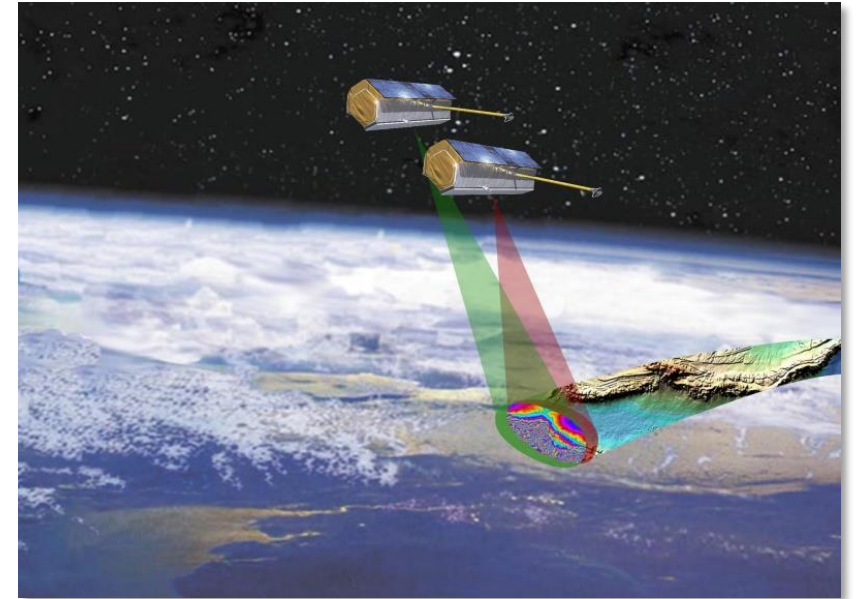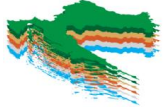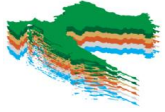
Input data: Digital Terrain Model

- Aerial Photogrammetry

- High Quality Data: points, lines, break lines

- Regularly updated with stereo photogrammetry methods

- Covers national needs
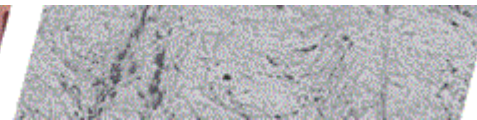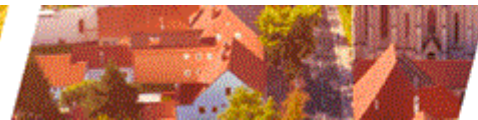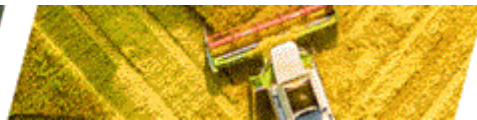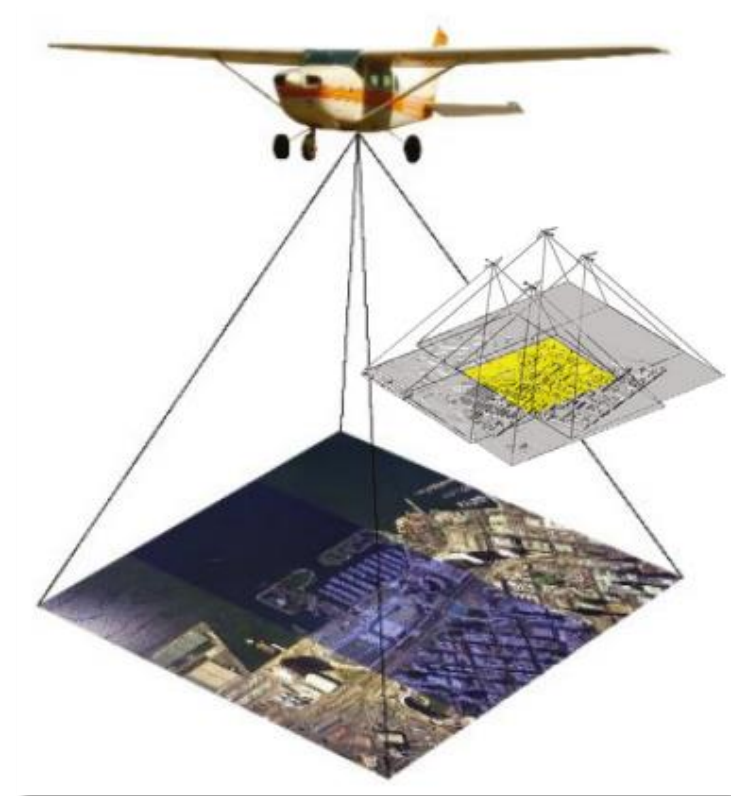
Input Data Characteristics

DSM

- Format: 32 bit GeoTIFF sheets (1°x1°)
- Grid Resolution: 12x12 m
- Height accuracy DSM: relative < 2m, absolute < 10m
- Horizontal reference system : WGS84
- Vertical reference system : EMG2008
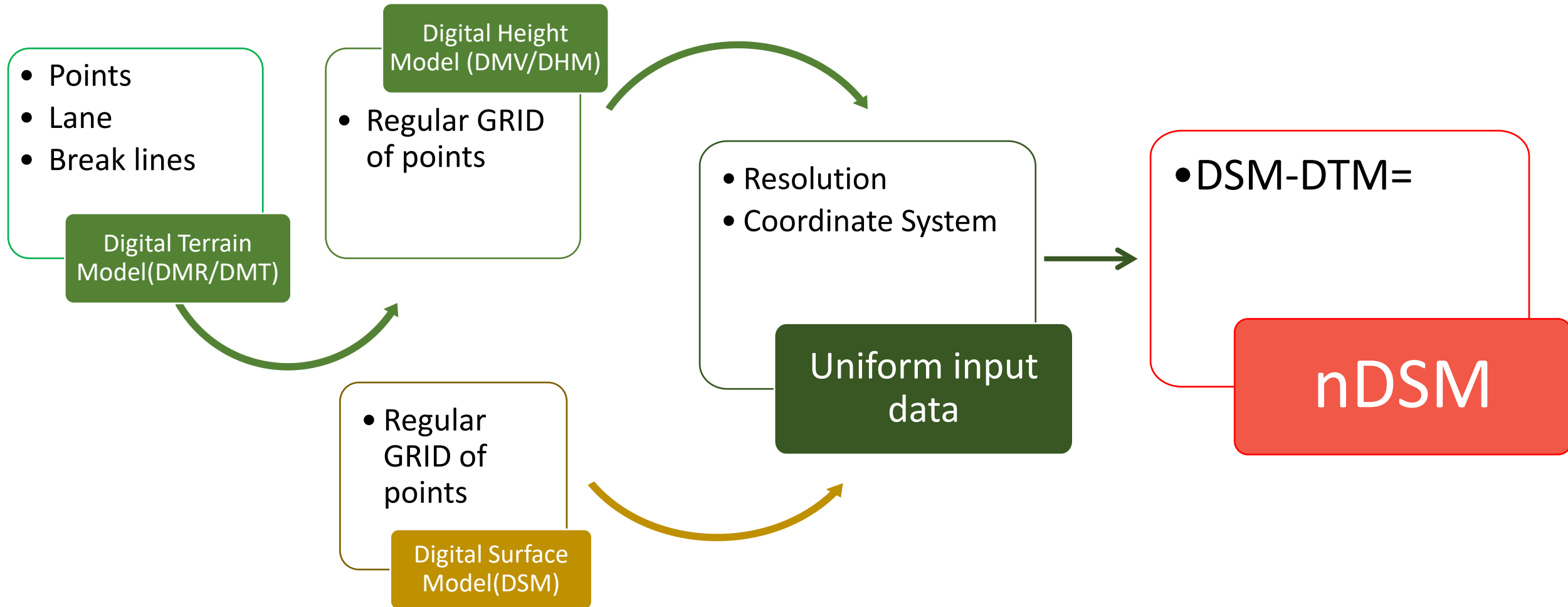- Time period: 2010 – 2014

DTM

- Format: dgn / dwg
- Horizontal accuracy : 1m
- Height accuracy : 1,5 m
- Horizontal reference system : HTRS96
- Vertical reference system : HVRS71
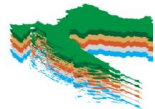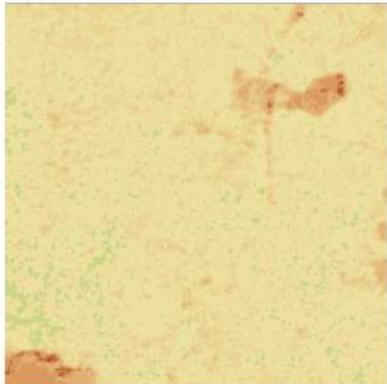- Last update: 2018. – 2019.

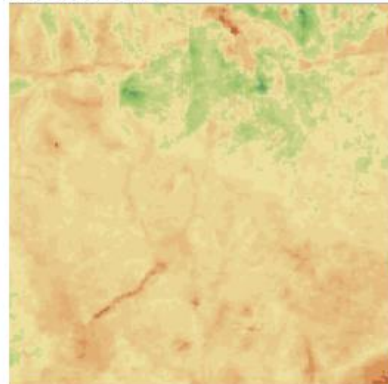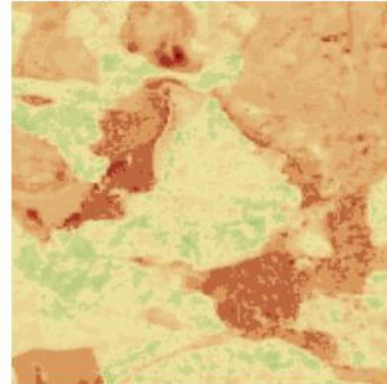- NoData vrijednost: -32 767,0
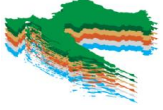
nDSM workflow
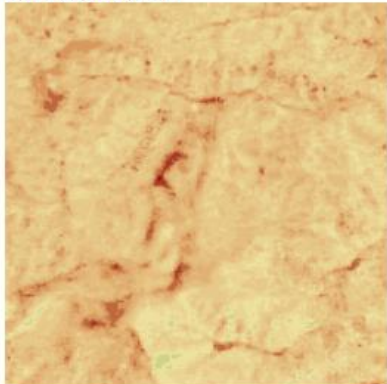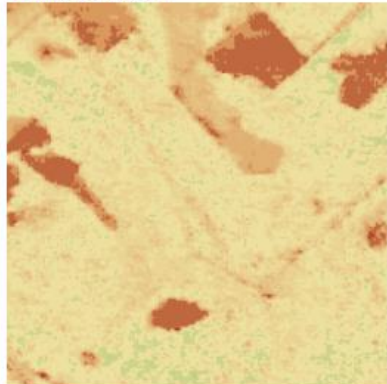
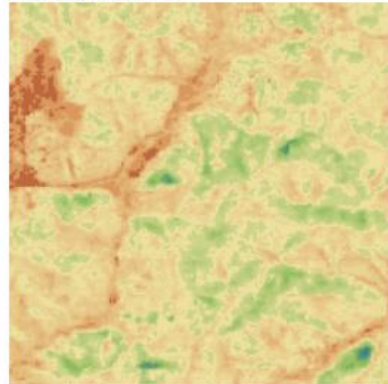Pilot područje 1   Pilot područje 2   Pilot područje 3   Pilot područje 4
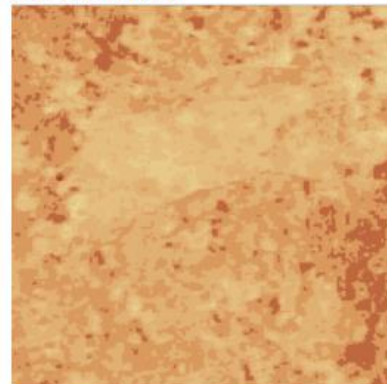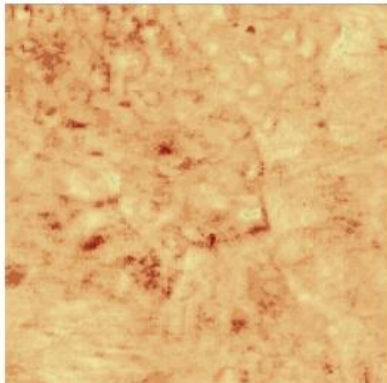
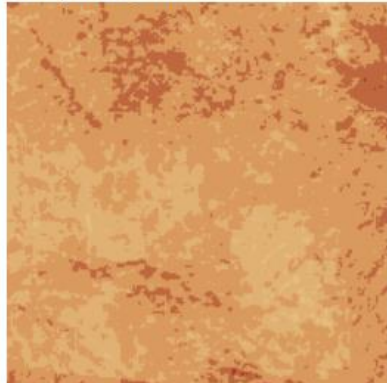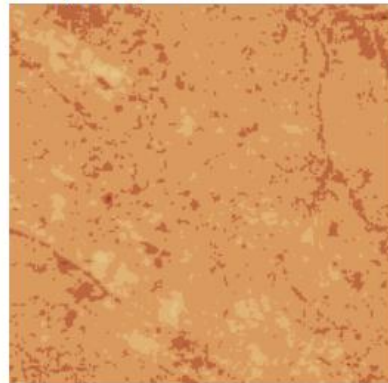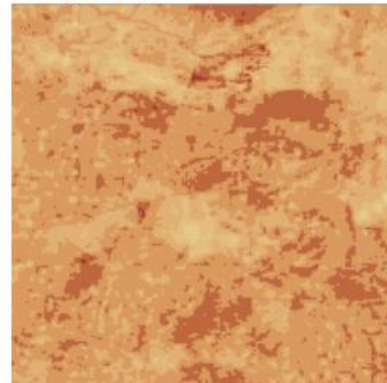Pilot područje 5   Pilot područje 6   Pilot područje 7   Pilot područje 8
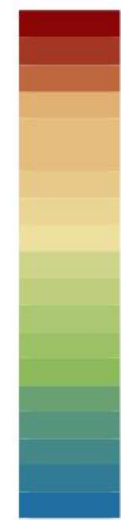
Pilot područje 9   Pilot područje 10   Pilot područje 11   Pilot područje 12
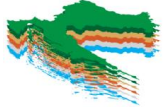
LEGENDA:

od -15 do -10 metara
od -10 do -5 metara
od -5 do 0 metara
od 0 do 5 metara
od 5 do 10 metara
od 10 do 15 metara
od 15 do 20 metara
od 20 do 25 metara
od 25 do 30 metara
od 30 do 35 metara
od 35 do 40 metara
od 40 do 45 metara
od 45 do 50 metara
od 50 do 55 metara
od 55 do 60 metara
od 60 do 65 metara
od 65 do 70 metara
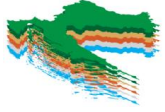od 70 do 75 metara
od 75 do 80 metara

Open Questions

- In some places unrealistic deviations. Do such individual deviations affect the methodology and how much?

- The data of the TreX program is not complete: Is the entire data set really needed for the purposes of developing the methodology?
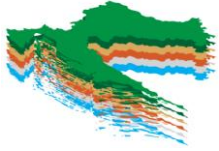
Conclusions

- SGA provided already existing data to CROLIS system

- nDSM production still questionable

- LIDAR data available January/February 2024

- Recruitment:
  - 2 jobs turned into one: Recruitment with some positive ending near the end

Thanks you for your attention!