

Geospatial data sources

doc. Ing. Jan Pacina, Ph.D.



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Operational Programme Research,
Development and Education



MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Landscape modelling – small format aerial photography:

- We use classical aerial carry-tools
- The main task is to prepare a orthophoto with high resolution – the high image overlap is required
- Flexible and cheap method
- Limited by law
- The following tool are used:

- Aircrafts
- Balloons and blimps
- Kites
- Paraglides
- Helicopters
- Drones



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- Drones

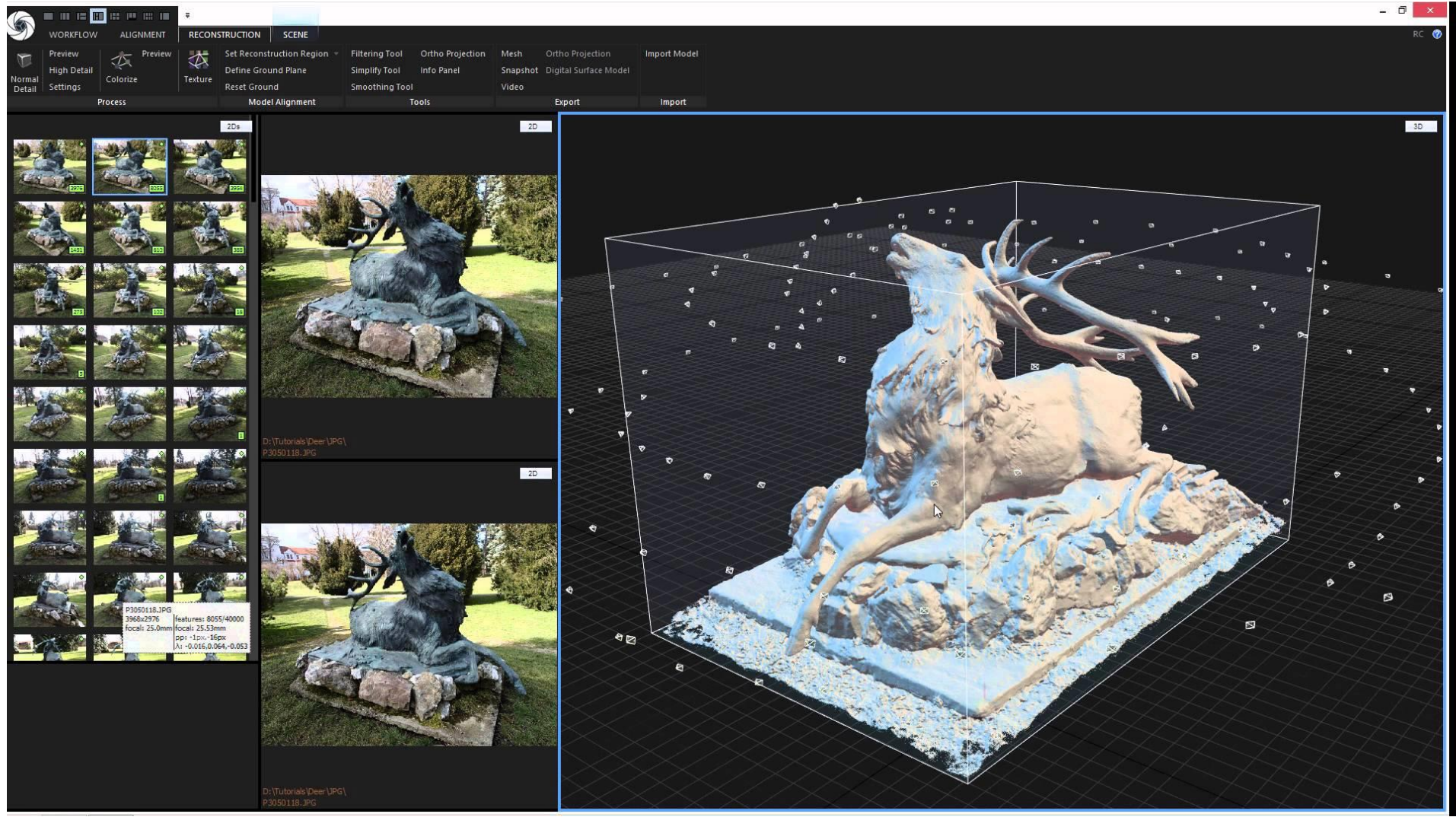


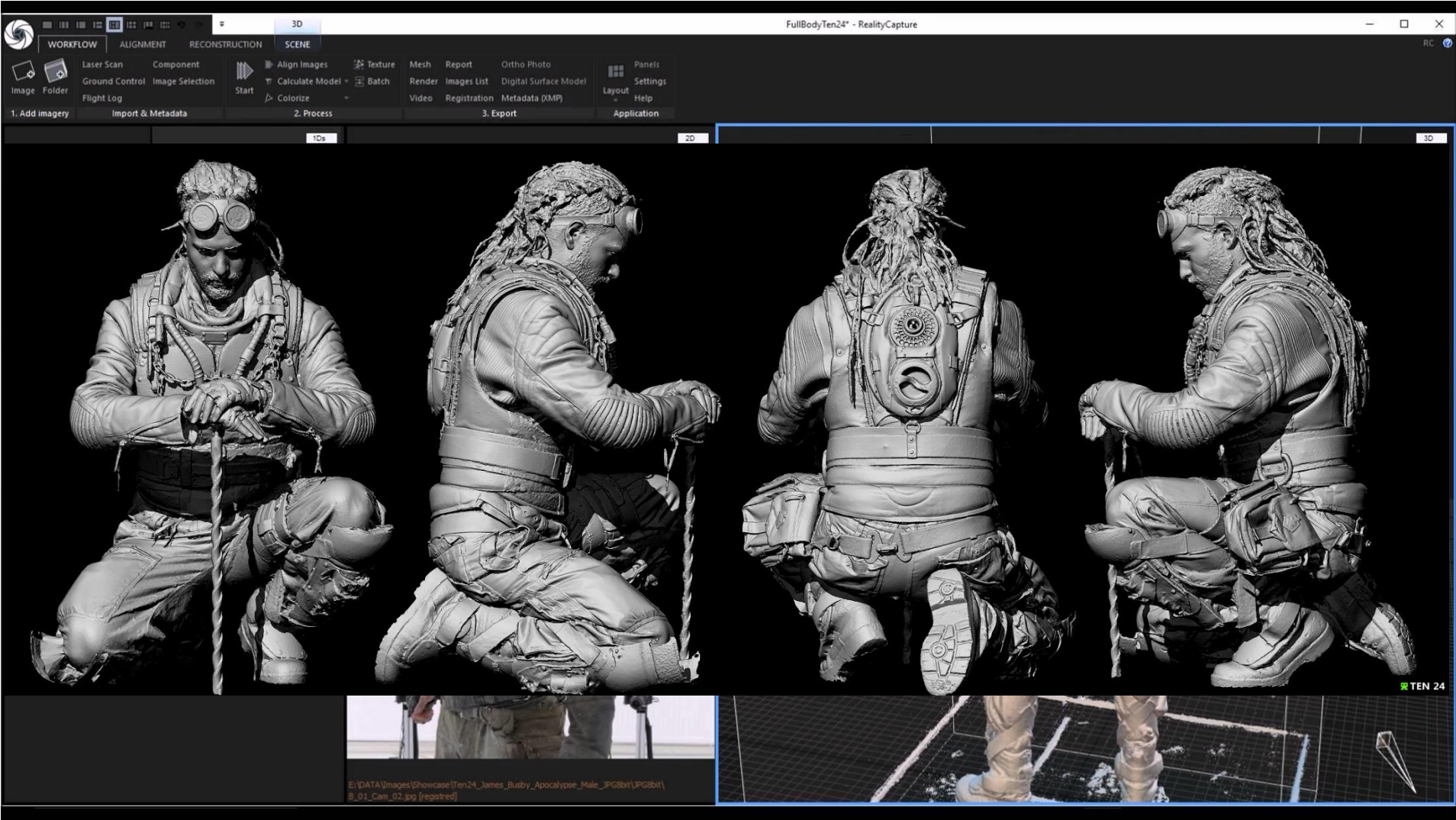
The „rolling shutter effect“



Rolling shutter effect





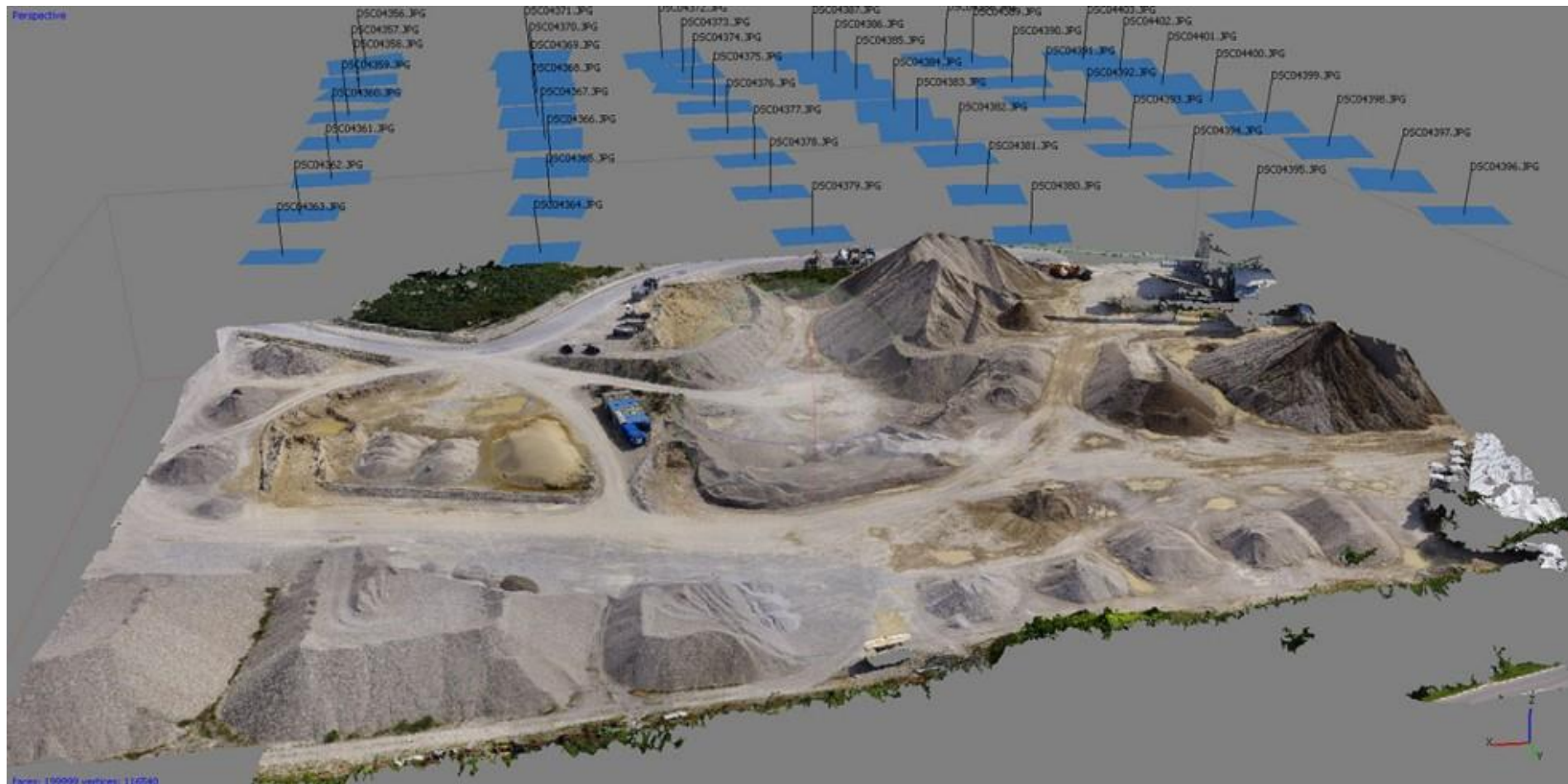


Perspective

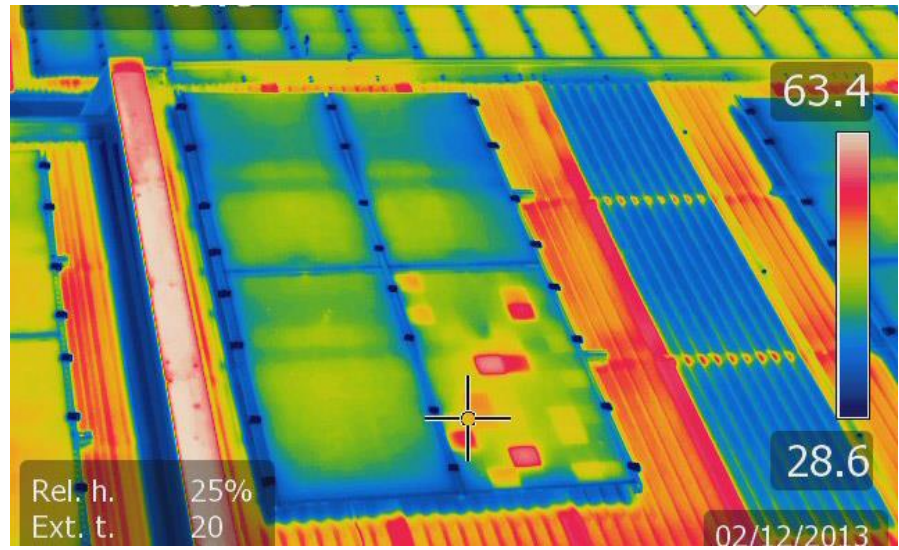
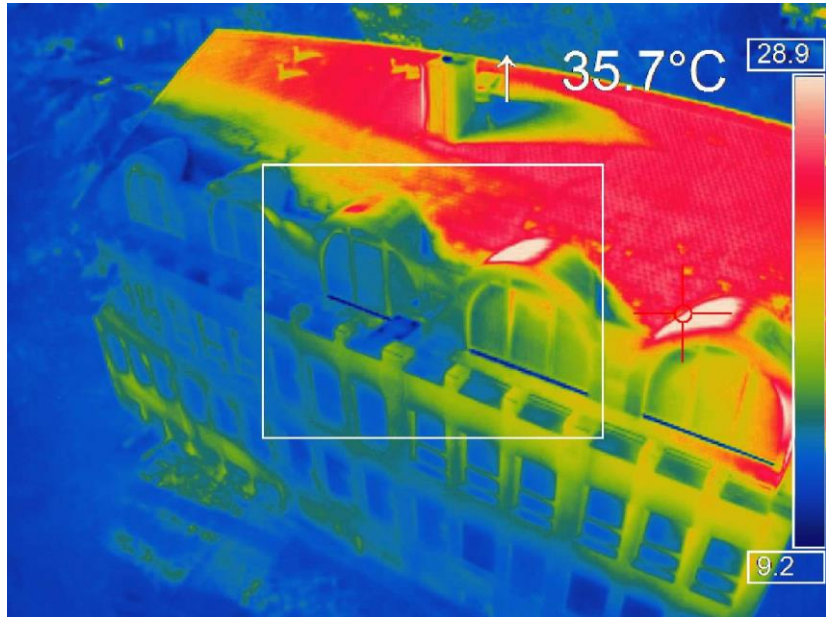
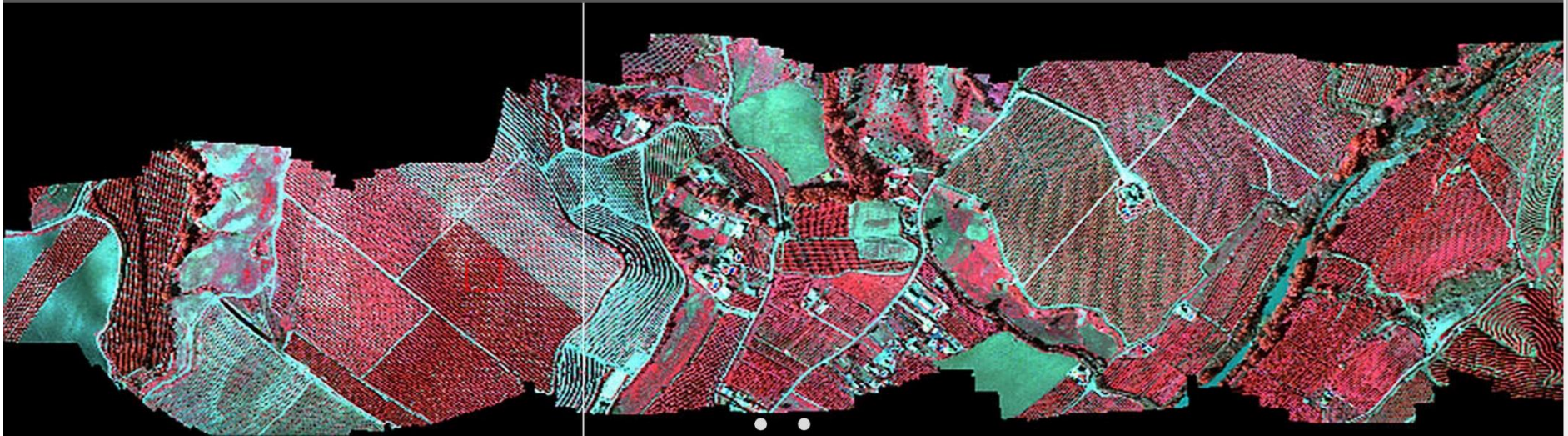


faces: 800000 vertices: 4003615



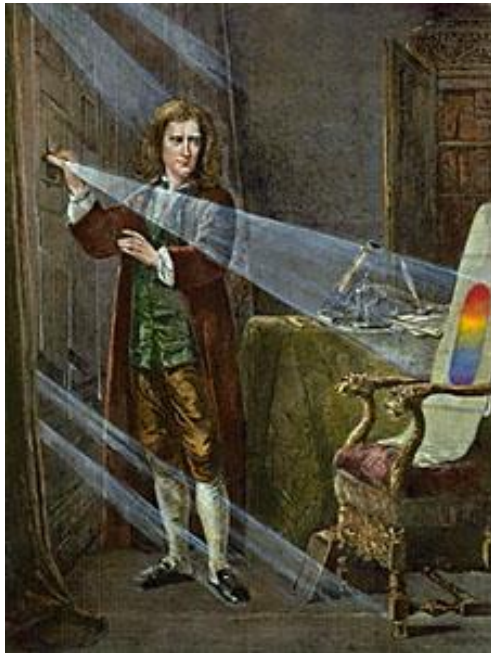




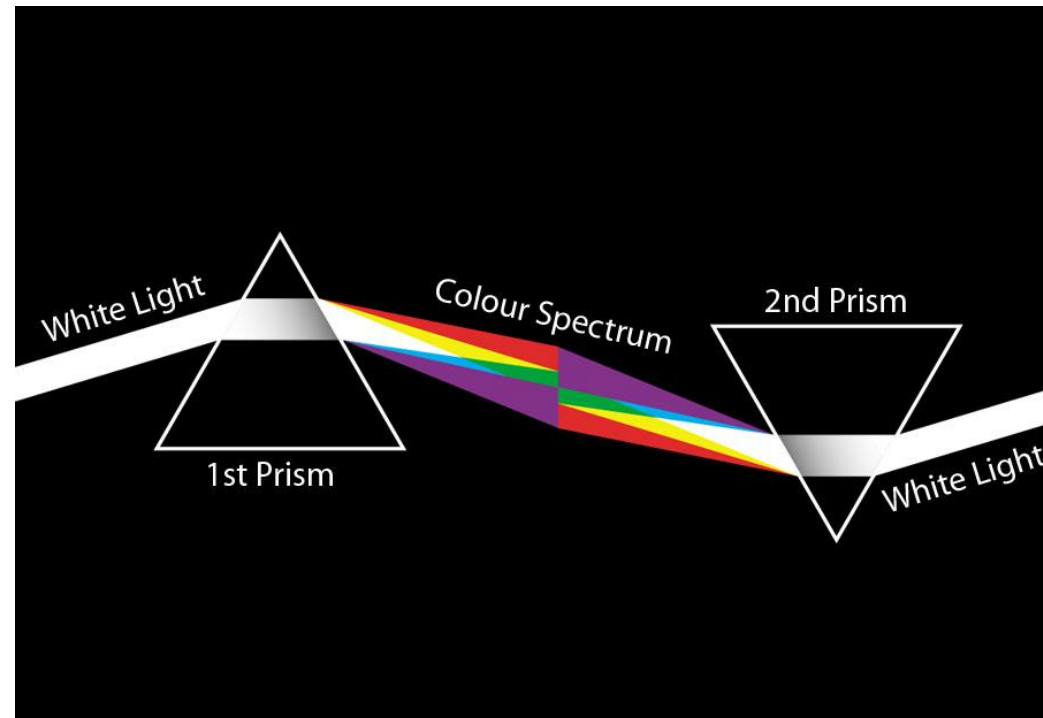


In the beginning

- 1672 – Sir Isaac Newton discovered the color spectrum



<http://www.jessicacrabtree.com/journal1/2009/09/hints-of-color-2>



<http://chipl.edublogs.org/files/2010/11/Reverse-light-spectrum-yy6cje.jpg>

~ 1826 – first photograph– Joseph Nicephore Niepce

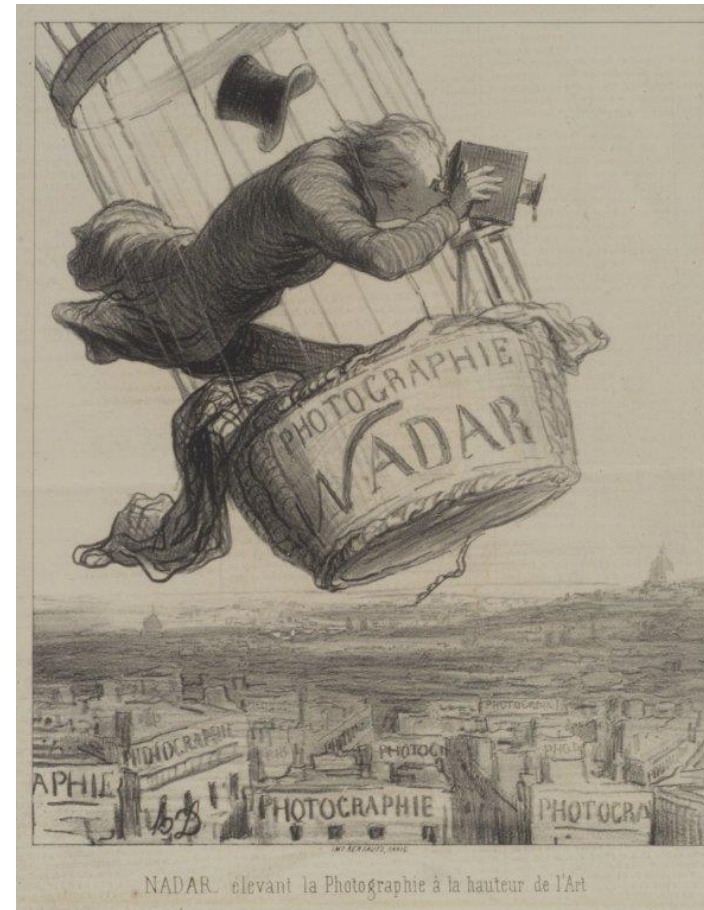


http://en.wikipedia.org/wiki/File:View_from_the_Window_at_Le_Gras,_Joseph_Nic%C3%A9phore_Ni%C3%A9pce.jpg

- 1858 – first aerial photograph Gaspard Felix Tournachon (Nadar)



<http://cs.wikipedia.org/wiki/Nadar>



Balloon mapping



Současnost balónového mapování





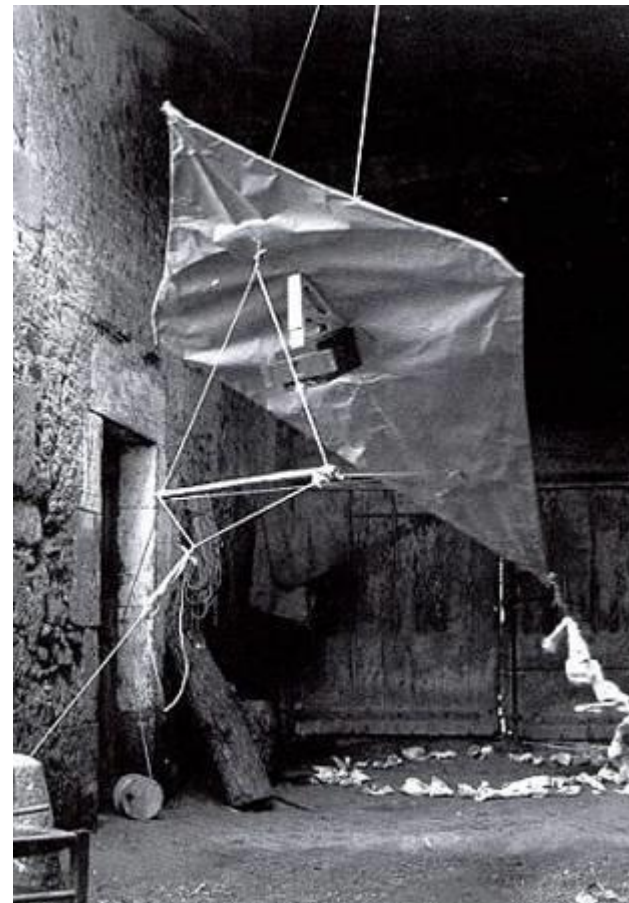




KAP – Kite Aerial Photography

- 1890 – Artur Batut – first kite usage for KAP:
 - discoveres
 - archeology
 - soldiers
 - agriculture

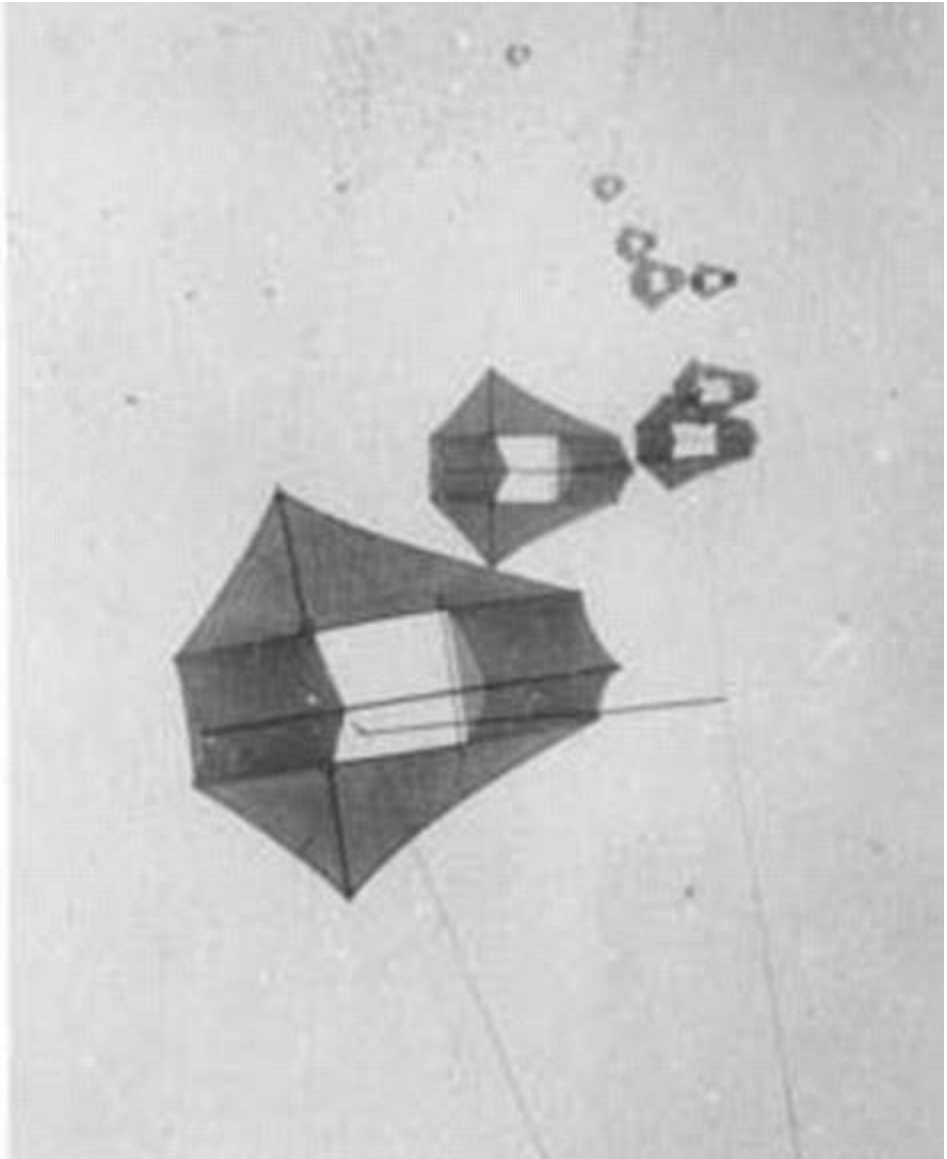
- jeho zájmem bylo představit leteckou fotografii pro běžné použití



18. duben 1906 – earthquake in San Francisco







<http://www.dailymail.co.uk/news/article-2099768/A-city-ruins-Stunning-photo-captures-devastation-San-Francisco-earthquake-1906.html#faxzz2KJ59wOKh>



Kite Aerial Photography (KAP)









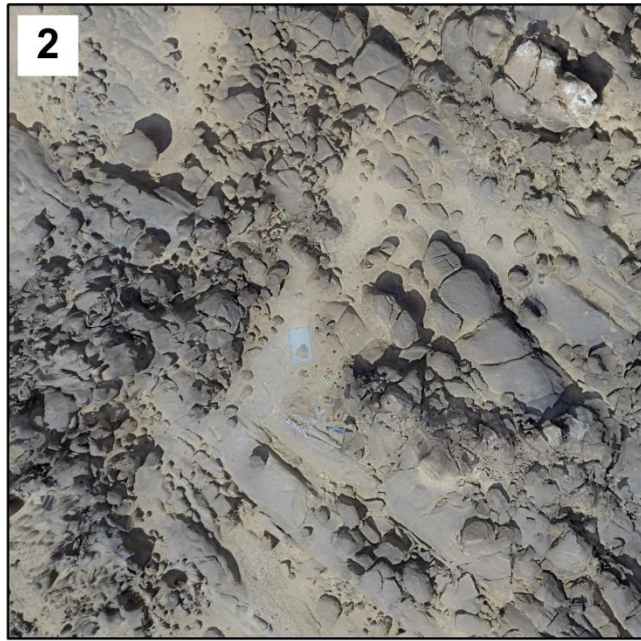
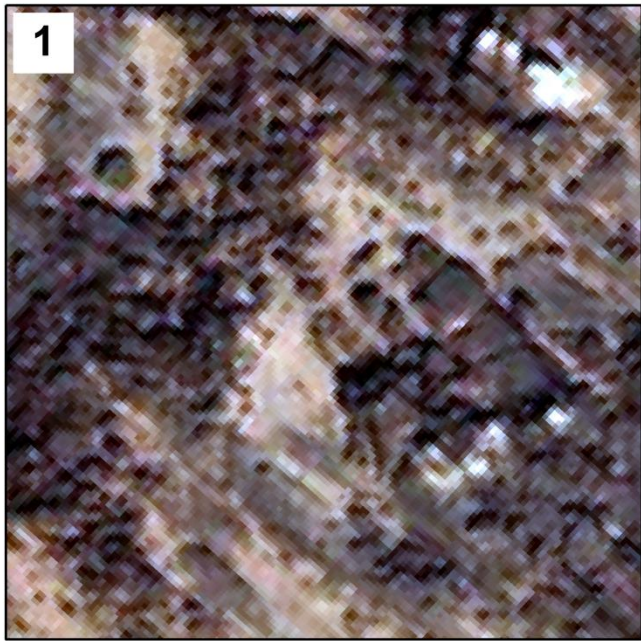








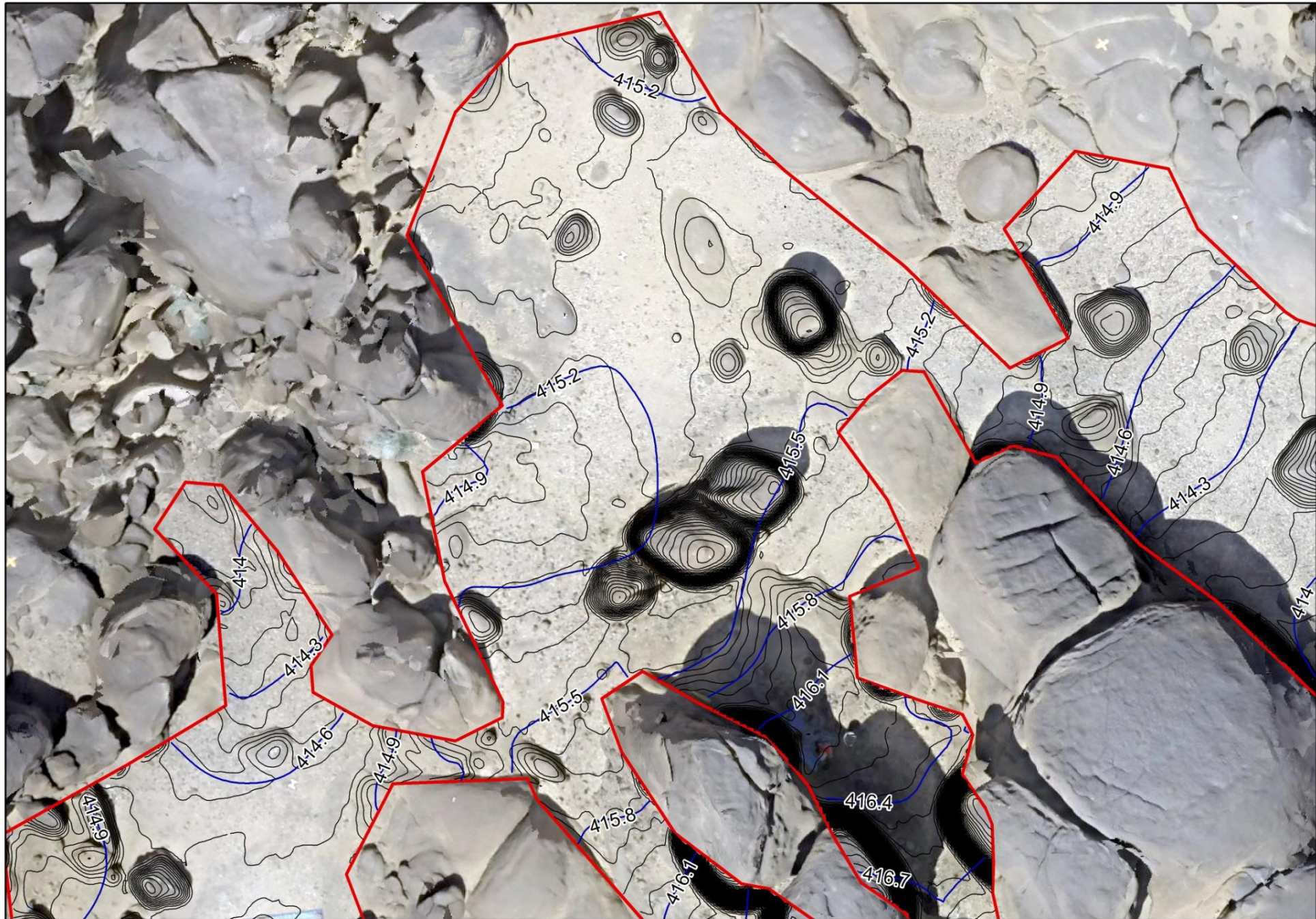




0 25 50 100 m



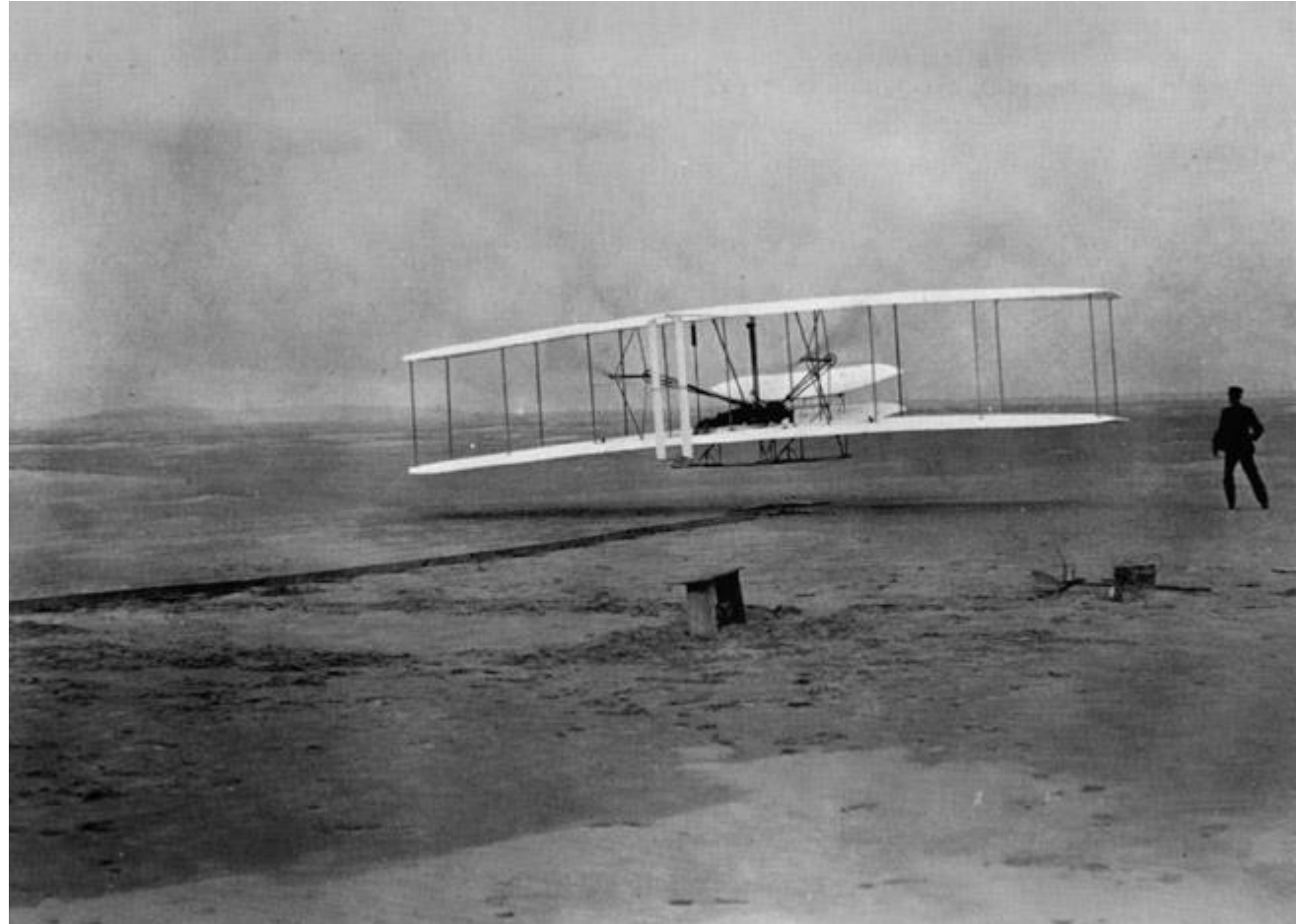
0 0.5 1 2 m



0 2.5 5 10 m

The Aircrafts

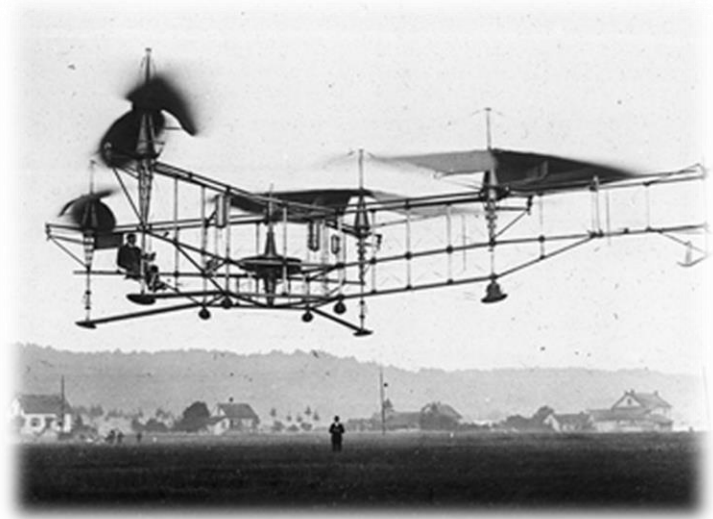
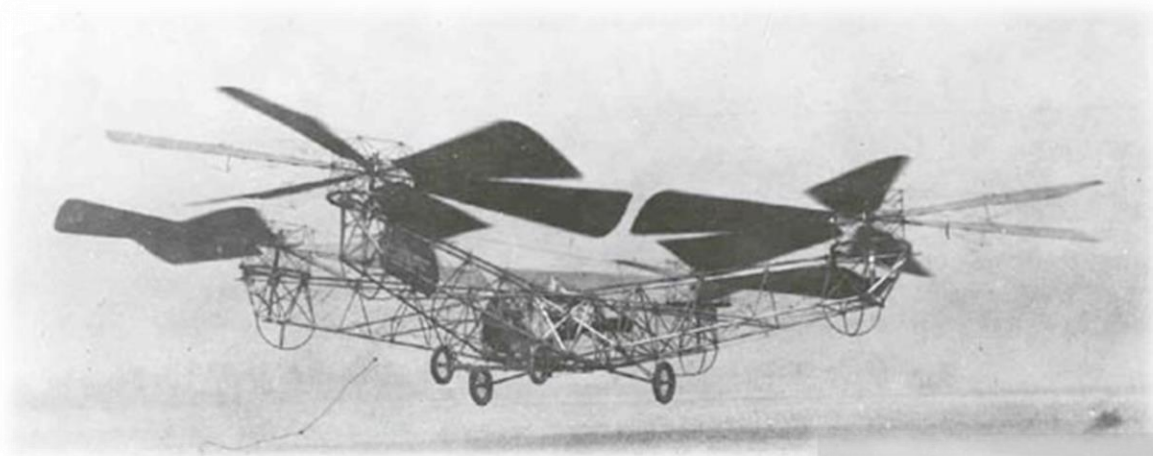
In 1903 the Wright brothers built the first aircraft





<https://www.lowepro.co.uk/drones>

Multicopters

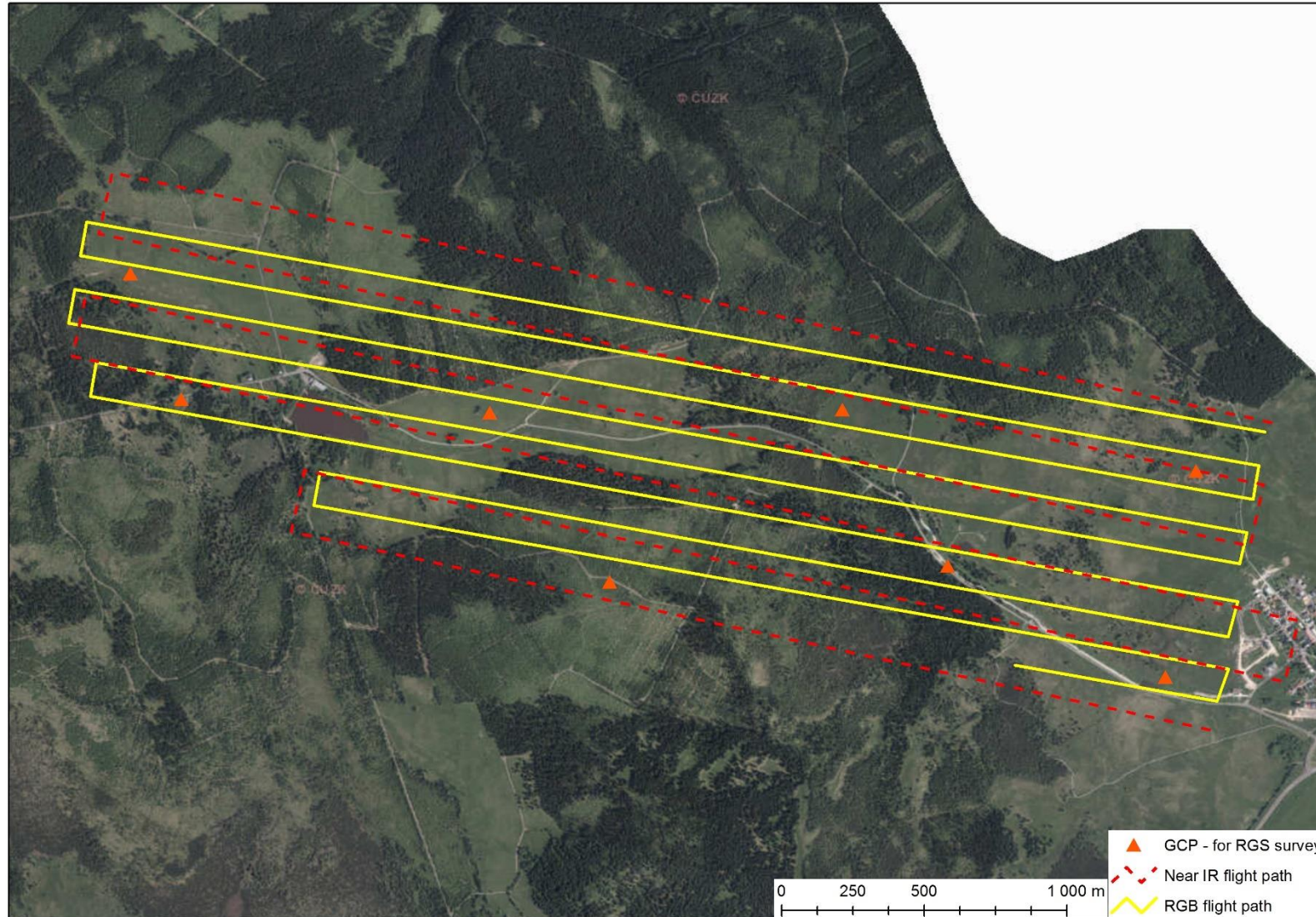








Flight plan planning



Legislative?



ÚŘAD PRO CIVILNÍ LETECTVÍ



No Fly zones – od DJI: <http://www.dji.com/fly-safe/category-mc?www=v1>



Aplikace MAIA

