

RESEM project - REmote SEnsing supporting surveillance and operation of Mines

Summary of the project



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NORTHERN RESEARCH INSTITUTE



Good interaction of experts needed

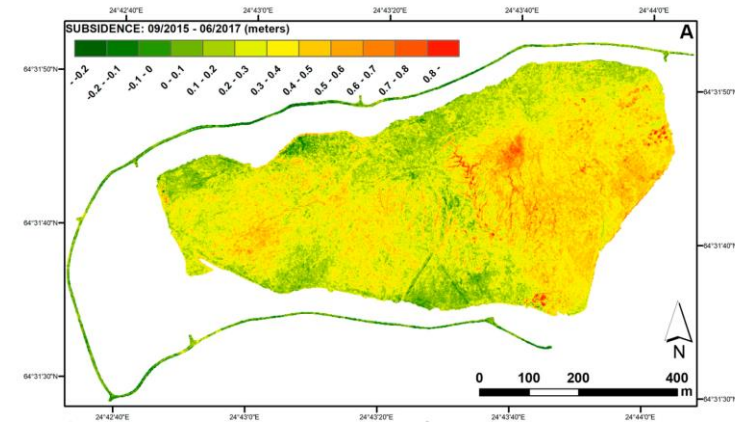
- Consortium with different backgrounds essential, progressing with knowledge from different aspects
- Understanding the capabilities but also the restrictions of the methods used
- A learning experience
- Expertise on data analysis is critical





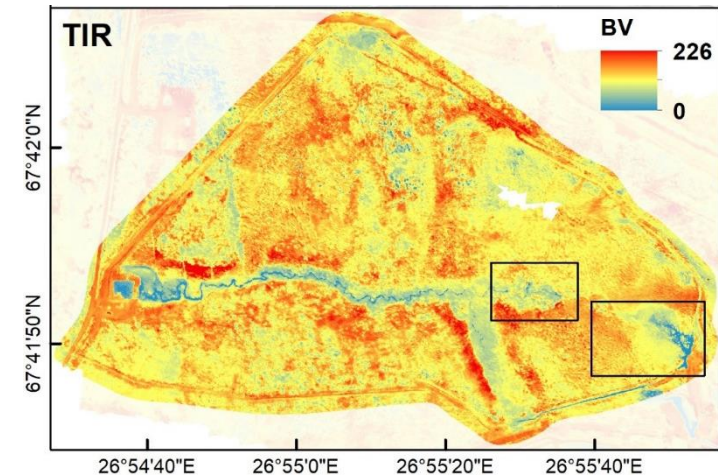
Mining structures and operation processes

- Both satellites and UAV have monitoring possibilities of large scale operations as tailings dams
- For future use of remote sensing in mines, land-based monitoring can need some changes to enhance the use of remote sensing methods
 - E.g. Use of InSAR would need detailed map of planned land form changes as dam height increases



Environmental protection and safety issues

- Both satellites and UAV have monitoring possibilities
- Remote sensing can be used for continuous monitoring or to pinpoint detailed *in situ* measurements to right points
- Good possibilities to study mine site before the mine is opened
- Utilization to supervision by regulatory authorities?





Future of remote sensing in Northern mines?

- Use of different remote sensing methods will become more and more common when the knowledge how to use them increases
- Mines involved in RESEM have already started to implement presented methods
- There are markets for the “middle men”: consultants that would understand both remote sensing methods and also northern mining environment