

National Report of Iceland

2022–2026

NKG General Assembly, Vilnius 2026.

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Natural Science Institute of Iceland

Merger, 1 July 2024

National Land Survey of Iceland
Icelandic Institute of Natural History
Mývatn Research Station

Scope of Operations:

- Biodiversity and Ecology
- Geology and Geodiversity
- Environmental Monitoring
- Geodetic services and Spatial data
- Public Education and Data Dissemination
- Consultation and reviews

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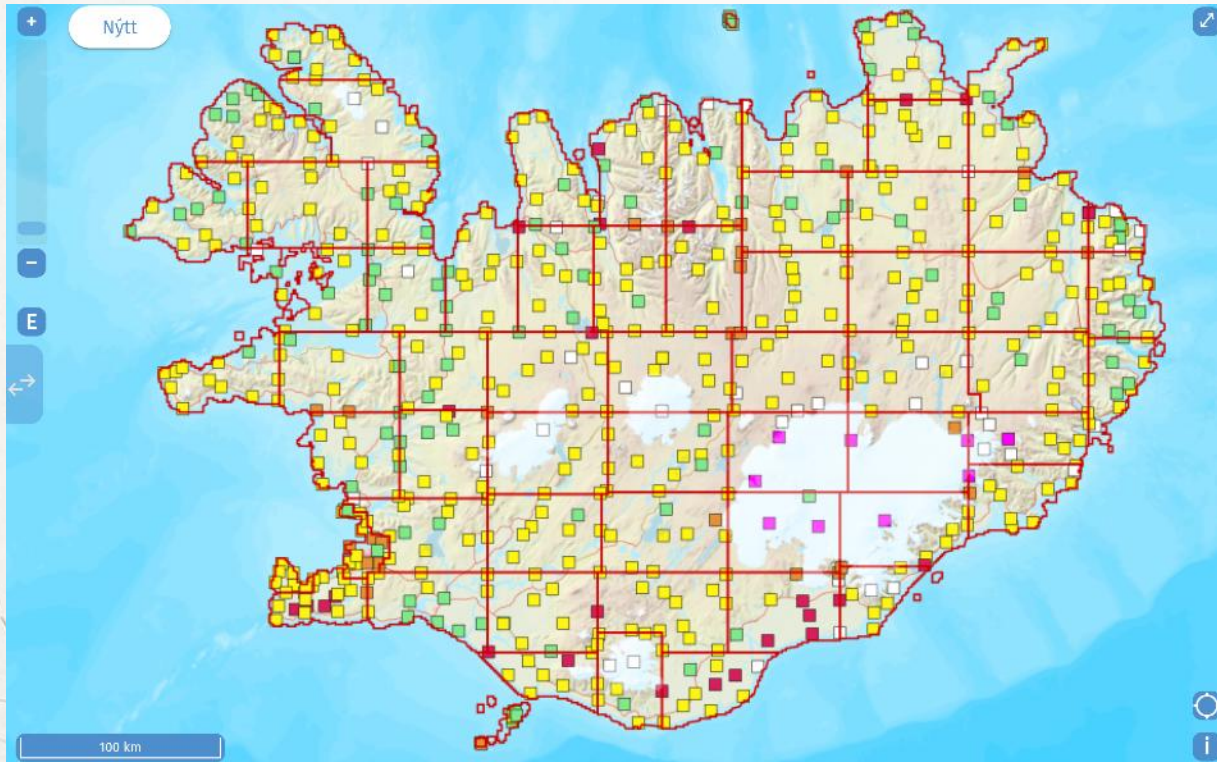
Main projects, 2022–2026

- Reykjanes: eruptions, deformation and reference frames
- National GCP network and aerial photogrammetry
- IceCORS receiver upgrades



National GCP network and aerial imagery

~580 GCPs established against an initial plan of ~600



2730 km²

Aerial acquisition in 2024

~17000 km²

Aerial acquisition in 2025

~35000 km²

2026 acquisition, provisional

GCP coordinates: network RTK and fast-static measurements



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IceCORS receiver upgrades

A major infrastructure task in 2024 and 2025



National reprocessing: Bernese with NKG AC settings

NetR9

Trimble receivers from
Kartverket

cGNSS

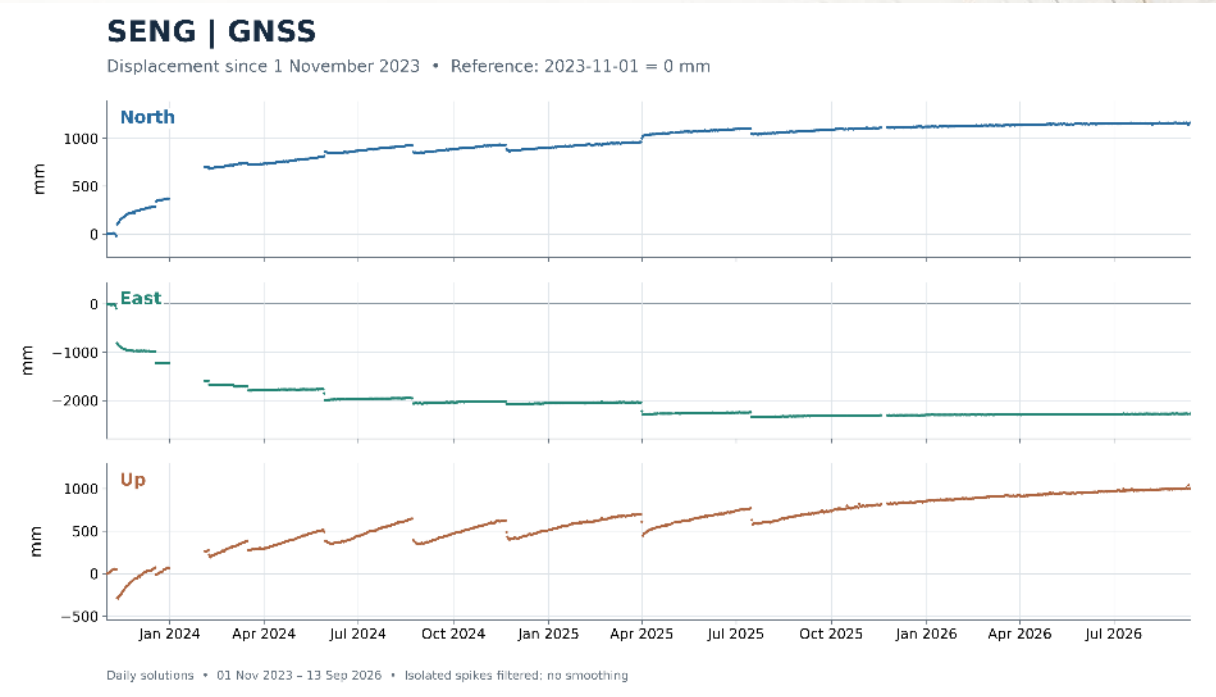
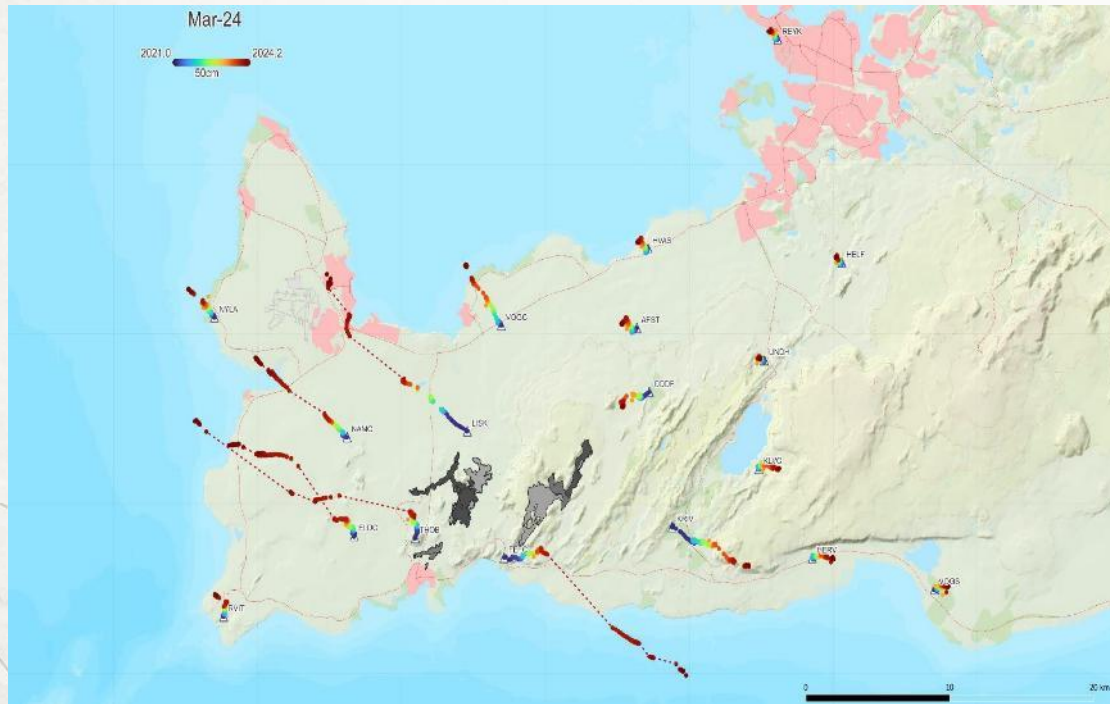
Observations for processing
and geodetic services



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Reykjanes: years of response

Eruption mapping, major deformation and infrastructure at risk



10 November 2023: metre-level deformation through Grindavík

Reykjanes: GNSS and survey control

Common reference frames for response and research

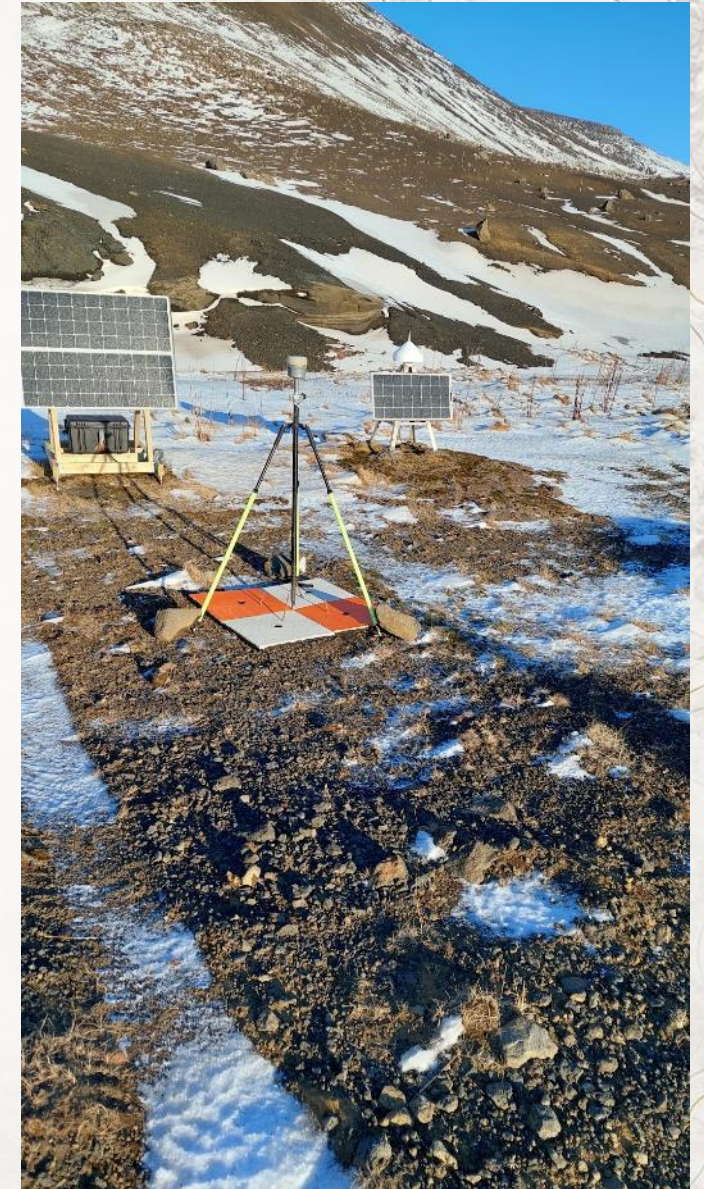
Bernese processing of cGNSS observations

NTRIP from four stations for barrier construction

GCP coordination for aerial and drone surveys

GCPs collocated with cGNSS stations

Cooperation between NLSI, INH, IMO and IES



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Reykjanes: mapping and field measurements

Rapid products for lava area and volume estimation

More than 20 flights and lava models since 2023

Phase One camera with Applanix/Trimble system

First DSMs and orthophotos 2–3 hours after flight

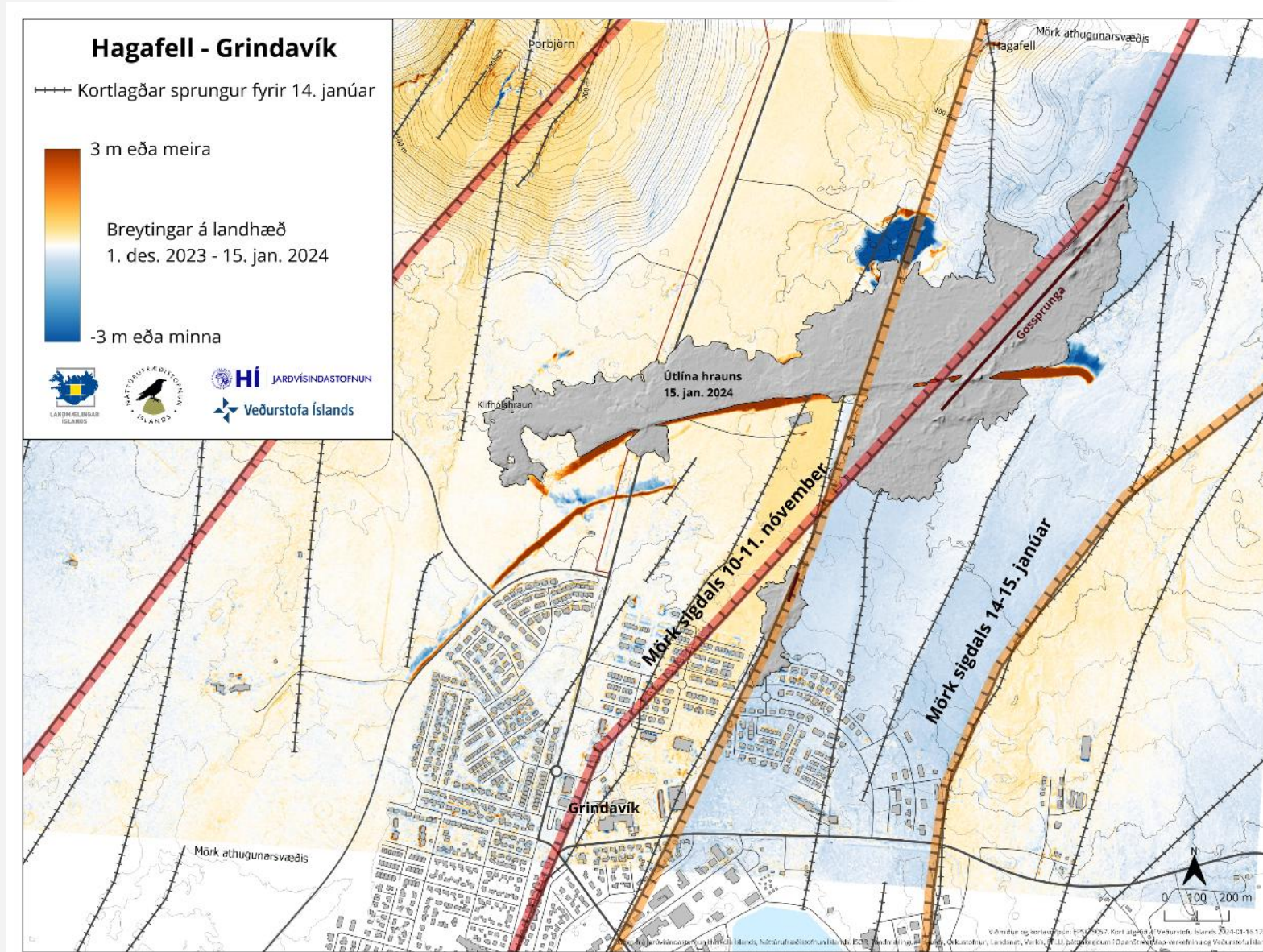
Remeasurement of ISNET points in 2025

Summer 2026 all data was reprocessed using DRF

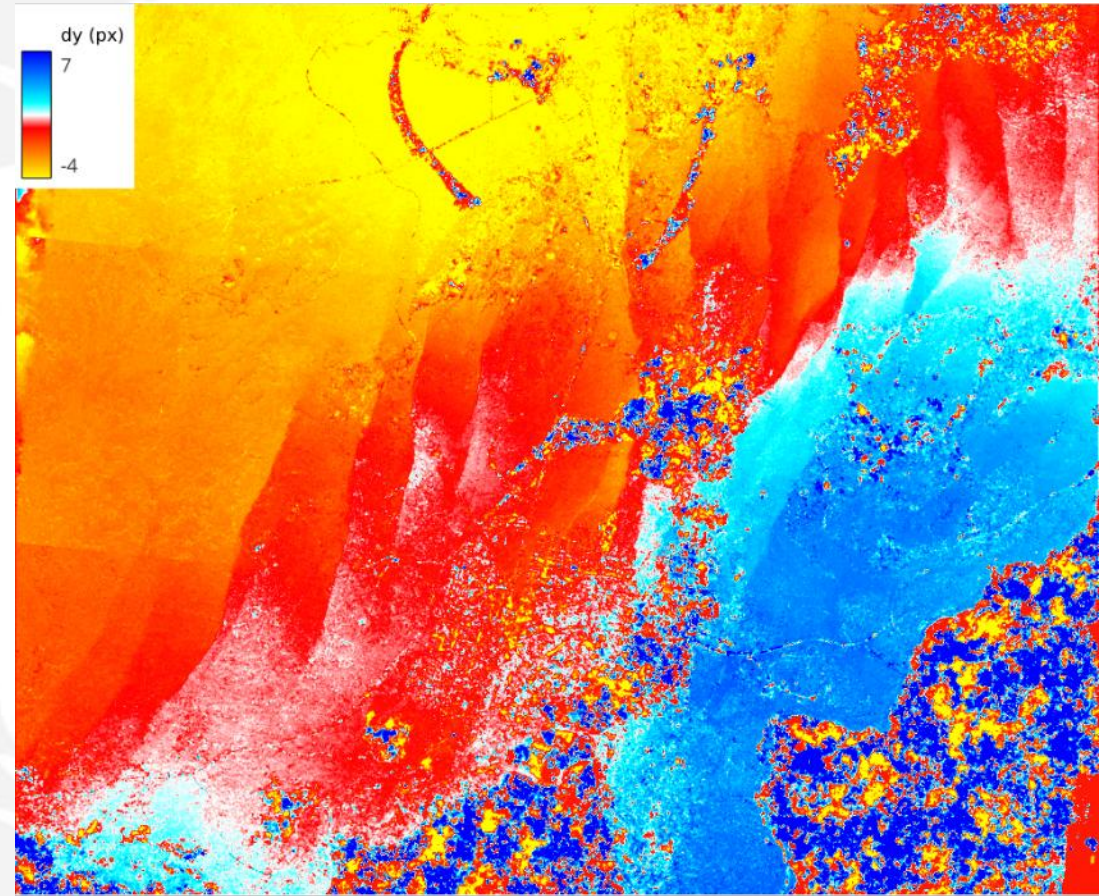
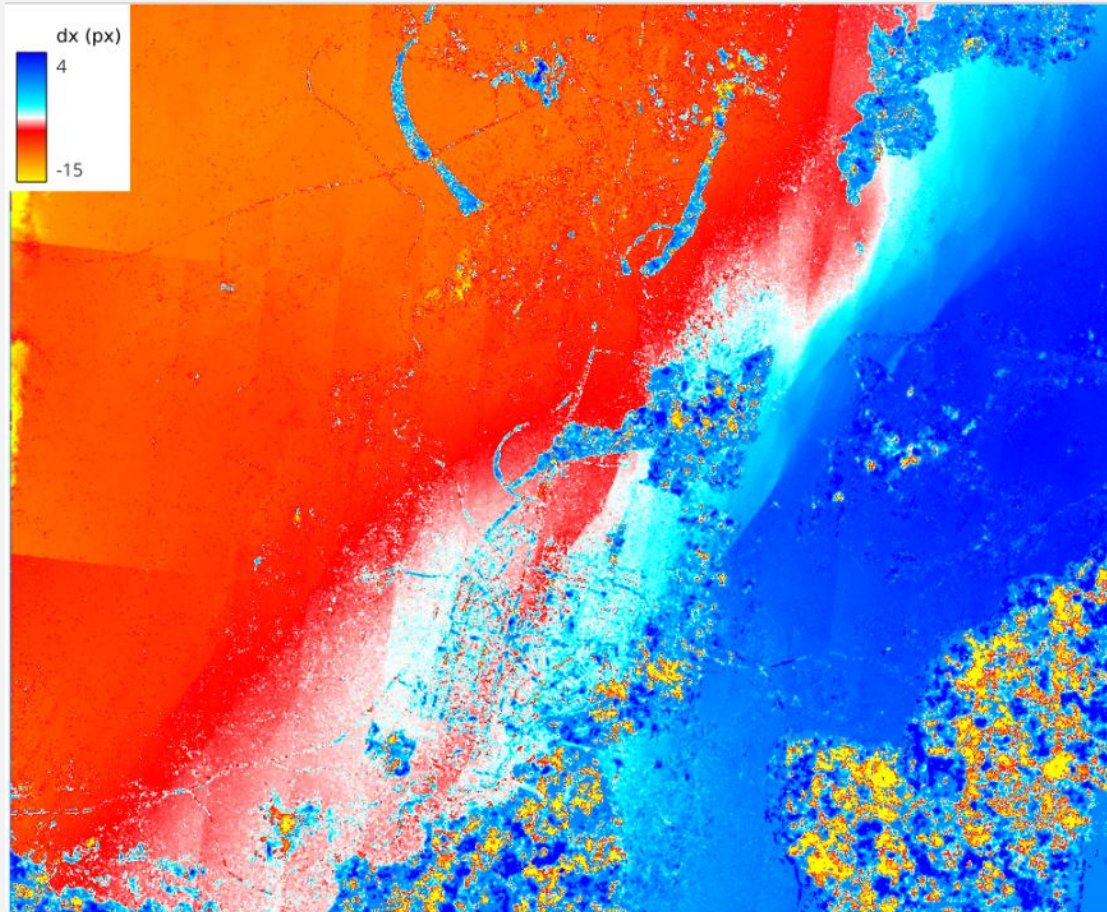
New aerial photogrammetric system in operation since October 2023



Some experiments: Comparing DSM



Some experiments: Estimating deformation from orthos (Feature tracking)



ISN2016 and Reykjanes

The need for an update is established. The implementation remains open.

Reported requirements

Update ISN2016 on Reykjanes

Replace ISN93 in the affected area

Provide coordinates during continuing unrest

Dynamic and semi-dynamic versions are development options

Questions for the next solution

Which coordinate epoch should users work in?

How should offsets and changing motion enter the model?

How should later updates reach users?



Other projects and cooperation

Reykjavík: InSAR, GNSS and levelling

Municipal surveys and height connections

Surtsey and National Power Company surveys

Low-tide coastline mapping



Cooperation with the Road Administration, IMO, IfE and other organisations



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Priorities ahead

ISN2016 adaptation and Reykjanes coordinates

Deformation models and FODITS time-series analysis

Continued GNSS services and survey control

New first order gravity network

Reykjanes remains the main focus





Thank you
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