

National Report Denmark

EUREF Symposium 2018

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Motorized Geometric/Trigonometric Levelling

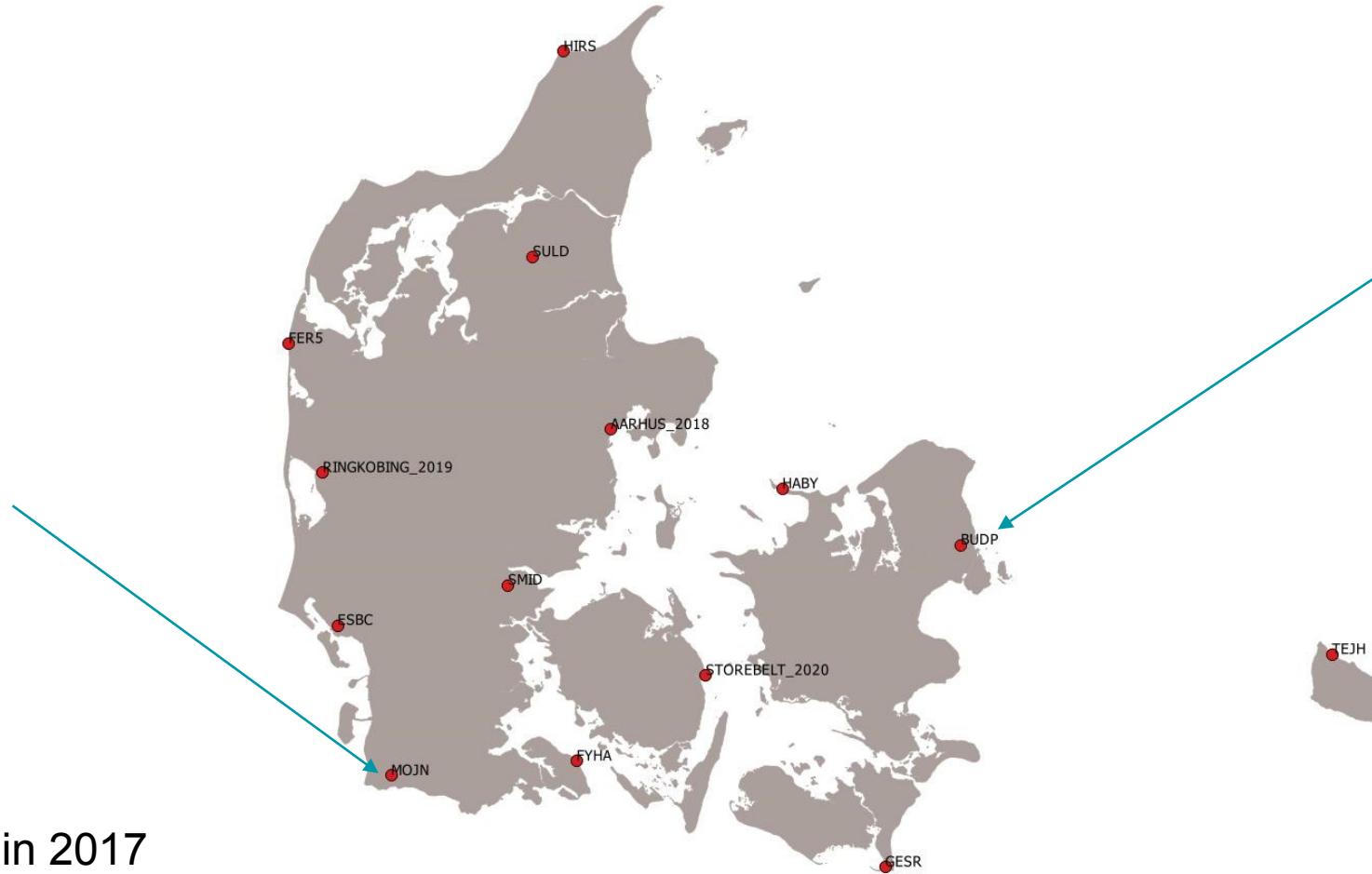
	2010	2011	2012	2013	2014	2015	2016	2017
MGL	880 km	687 km	1374 km	2050 km	1314 km	1250 km	1000 km	154 km
MTL	1427 km	931 km	31 km	1 km	0 km	9 km	126 km	807 km



GNSS CORS Upgrade



New Class A station in 2017



New twin station i 2017

Towards a 5 mm geoid model (DTU Space)

- Verifying existing data:
- Gravimetry: Verify old data for biases etc.
- Levelling: New lines along the west coast and GNSS surveying to eliminate less accurate data
- Test geoid based on 120 high accuracy levelled GNSS points (the 5D-network)
- Focus on coastal areas
- Airborne gravity survey of Kattegat between Denmark and Sweden
- Precise test geoid in Aarhus for the **TAPAS** project

TAPAS - 1

Testbed in Aarhus for precision Positioning and Autonomous Systems

New dense GNSS/RTK-network in Aarhus as testbed for GNSS research, Ready in September 2018!

“The foundation for a smart city”



TAPAS - 2

- An open research and development platform
- A SDFE initiative
- A DTU Space project
- In a partnership with Aarhus Municipality
- 11 new stations (11 class B)
- Septentrio receivers, Leica AR20 antennae
- GEO++ software, GNSSmart
- The golden goal: 1 cm accuracy RTK
- Opens platform 2018Q4

Nationwide deformation monitoring based on Sentinel-1

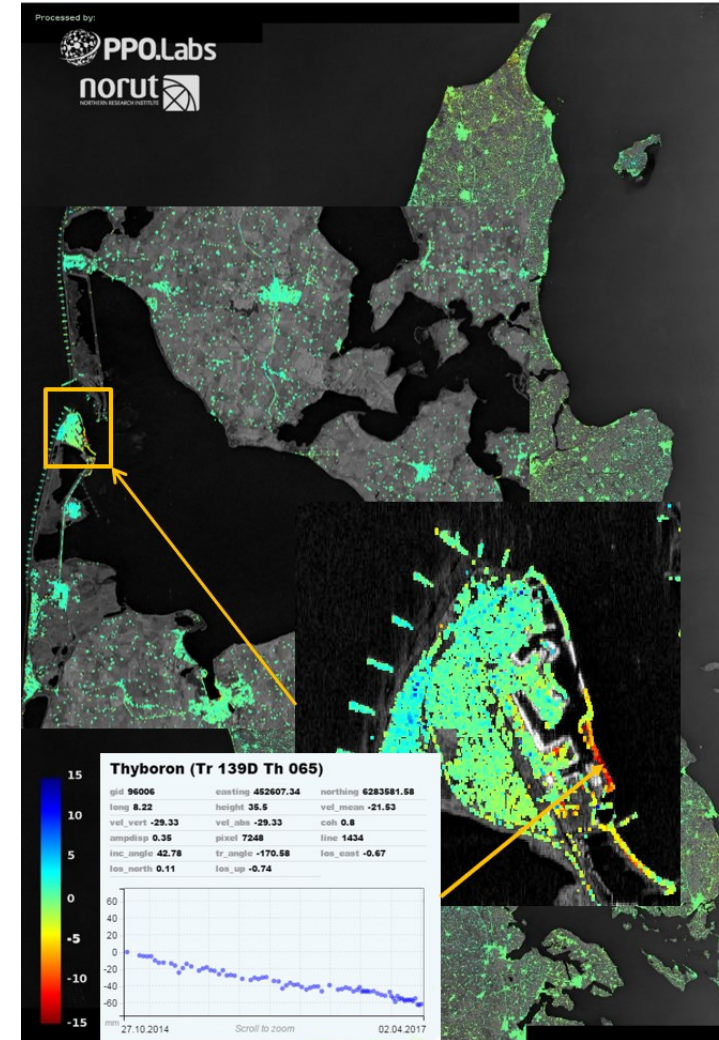
EU tender for nationwide deformation map (stand-still: May 15th – 25th 2018)

Approx. 80 % of Denmark will be covered in 2018 (the rest expected in 2019)

Chosen use-cases aimed at exploring potential benefits:

- planning of geodetic surveys and infrastructure
- climate change adaptation
- utility sector; water & wastewater
- etc.

Goal: To facilitate a decision on the establishment of a possible operational service for nationwide deformation monitoring in Denmark as an improvement to a potential future European Ground Motion Service



New transformation software

- PROJ is our new transformation workhorse
- SDFE is the main sponsor of PROJ release 5
- The SDFE activities have led to much enhanced interest in participating and contributing – see e.g. <https://gdalbarn.com>
- The new features in PROJ bring transformations of geodetic accuracy into the world of GIS

GNET

16 DTU/SDFE GNSS stations

43 stations funded by NSF 2007-2015

Goal: Keep GNET running!

Maintenance 2018 funded by NSF+SDFE

SDFE applies for future funding of all 59 stations

(DK Finance Act 2019)

Negotiations with NSF concerning the responsibility for GNET

