

kadaster



National report Netherlands

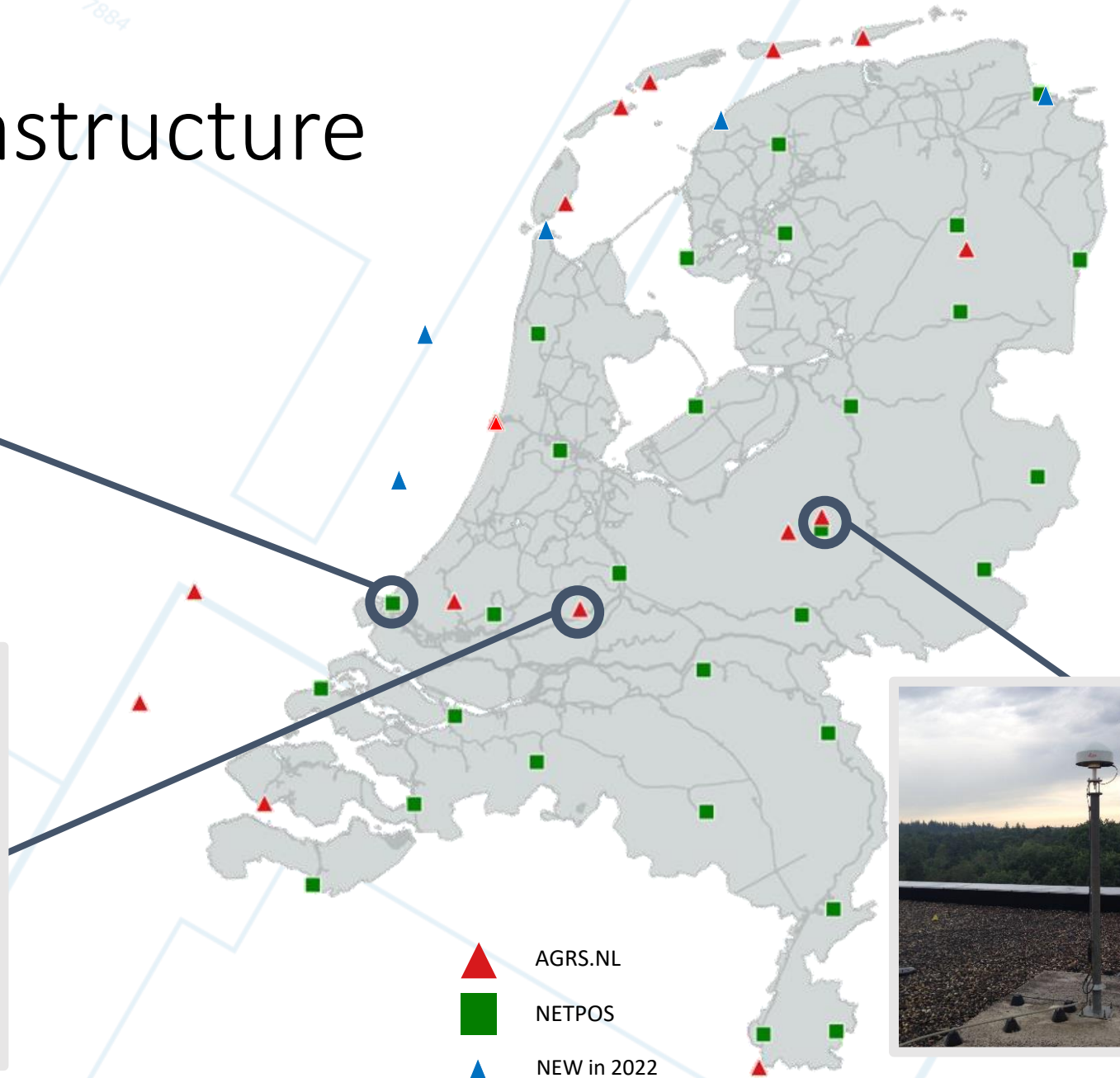
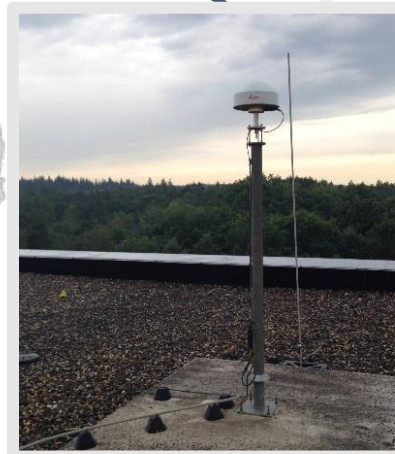
Lennard Huisman

Netherlands Partnership for Geodetic Infrastructure

Kadaster

November 2022 EUPOS Technical meeting

GNSS network infrastructure



GNSS network infrastructure

Footprints (kernet)

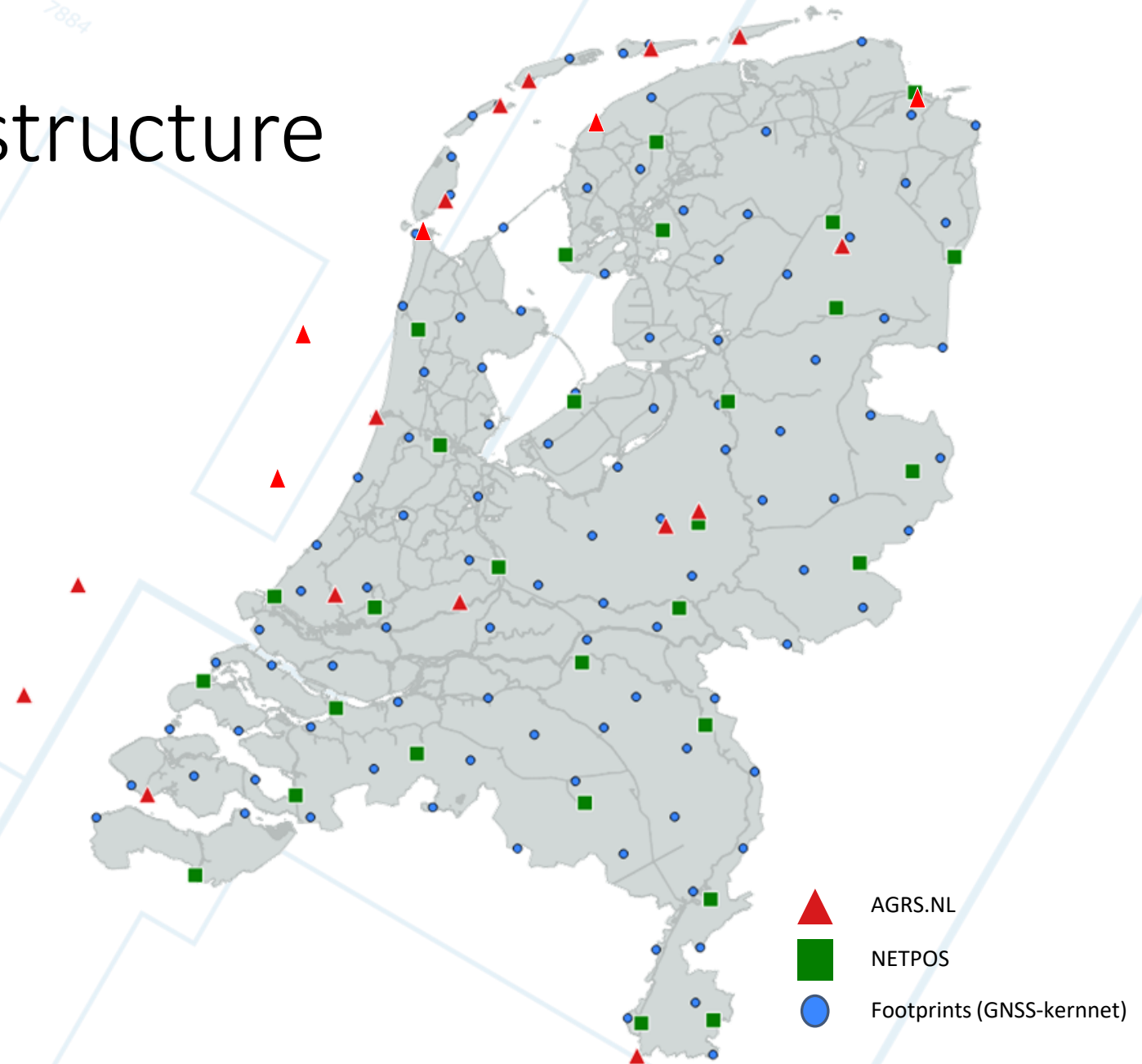
106 fysical points

GNSS levelling data

Valdiation of GNSS surveying equipment

Ground control measurements

Fall-back for RTK



Private GNSS networks

kadaster  **Rijkswaterstaat**
 Rijkswaterstaat
 Rijkswaterstaat
 Rijkswaterstaat

Certificaat van Goedkeuring

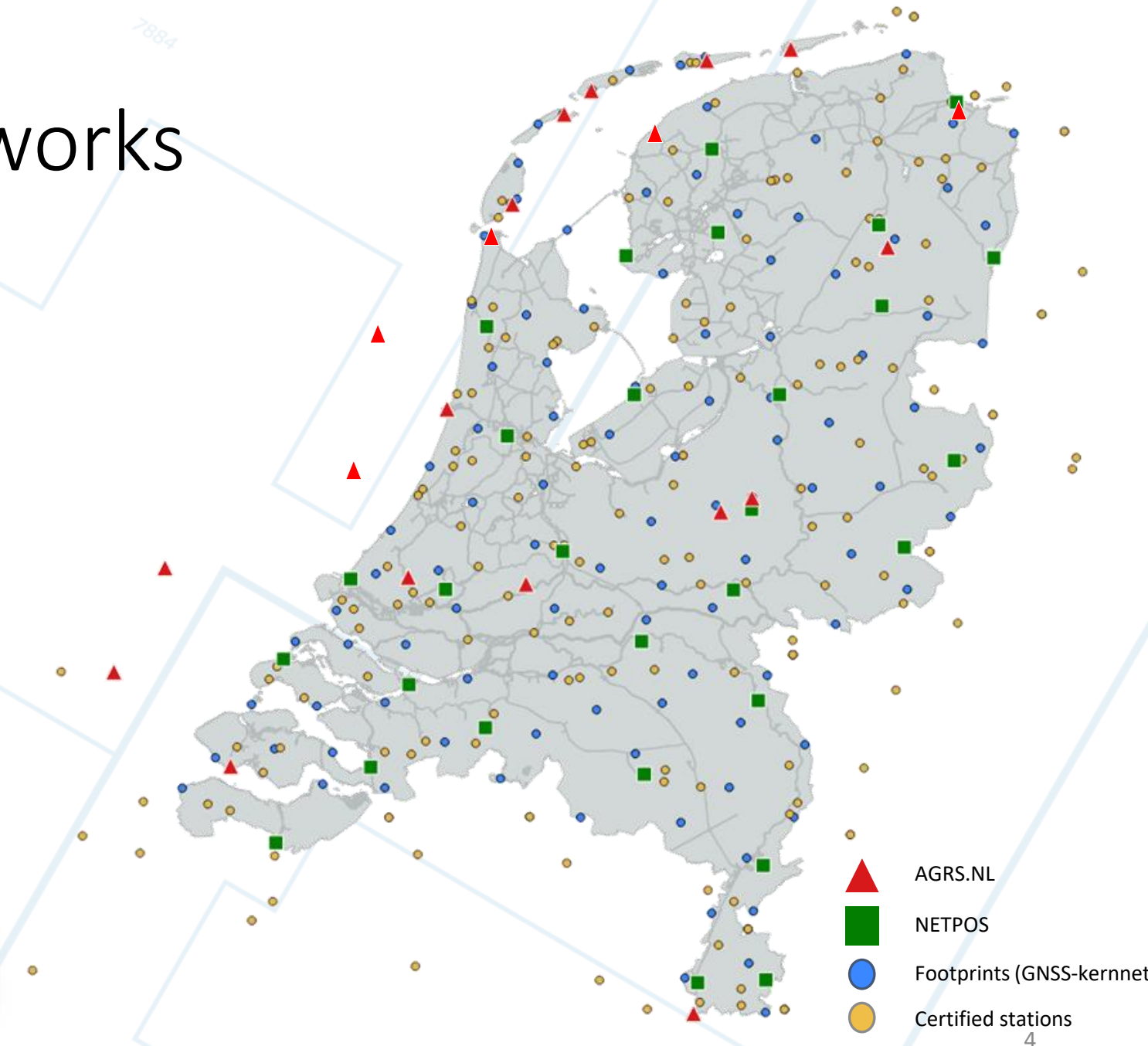
De Dienst voor het kadaster en de openbare registers (Kadaster) en de afdeling Data, Ontwikkeling en Advies van Rijkswaterstaat, als beheerders van de geodetische infrastructuur van Nederland samenwerkend onder de naam NSGL, verklaren dat de in onderstaande tabel opgesomde referentiestationen beoordeeld en in overeenstemming bevonden werden met de eisen die door Kadaster en CIV zijn vastgesteld. De genoemde referentiestation(s) passen hiermee binnen de geodetische infrastructuur van Nederland.




Stationinformatie		European Terrestrial Reference System (ETRS89)									
Station	Automatische	PCV	x	y	z	a	b				
DTEV	TPSCR_05	TPSH	Indiv.	3891366,9807	421912,4763	5019057,5453	52°14'13,75198"	6°11'36,78578"	64,8057		
GELD	TPSCR_05	TPSH	Indiv.	3967617,5700	385891,5090	4962329,0881	51°24'43,71855"	5°33'38,46770"	73,3799		
HOUT	TPSCR_05	TPSH	Indiv.	3916120,2988	354390,0488	5005091,7588	52°01'57,92822"	5°20'15,26746"	57,3574		
DOOT	TPSCR_05	TPSH	Indiv.	3932136,3634	280971,2732	4997247,3556	51°52'05,71568"	4°05'13,66780"	62,1323		
NOOS	TPSCR_05	TPSH	Indiv.	3964512,3680	310410,1020	4970033,4213	51°51'24,36836"	4°28'37,06949"	61,5869		
BEIL	TPSCR_05	TPSH	Indiv.	3834194,8872	437815,2123	5081237,0429	52°51'37,48853"	6°30'54,37356"	71,4733		
BALL	TPSCR_05	TPSH	Indiv.	3788609,1542	377331,1462	5100020,1931	52°28'29,58838"	5°41'31,67001"	54,6393		
ETJ2	TPSCR_05	TPSH	Indiv.	3788609,1542	402129,0778	4918045,1940	52°28'29,58838"	5°42'43,58473"	102,9397		
ROKX	LEIAR25_R4	LEIT	Indiv.	3770133,6109	448053,9873	5108092,1158	52°20'34,76798"	7°01'38,98323"	54,4510		
EMDE	LEIAR25_R4	LEIT	Indiv.	3787983,7916	460951,2346	5091000,7472	52°42'57,21138"	7°18'55,66267"	56,9974		
MEPP	LEIAR25_R4	LEIT	Indiv.	3840419,5304	493022,5084	5021524,7050	52°28'09,55399"	7°04'38,56795"	80,2896		
NORD	TPSCR_05	TPSH	Indiv.	3866977,5825	312169,8247	5017199,0720	52°30'15,29895"	4°28'07,71576"	80,6437		
MIJK	TPSCR_05	TPSH	Indiv.	3878086,4634	406592,9740	5077867,7034	52°06'31,75478"	6°04'58,04642"	58,4998		
DRAC	TPSCR_05	TPSH	Indiv.	3815431,7491	388559,3993	5005967,7894	51°18'46,35237"	5°40'21,34963"	84,0364		
EDU_	TPSCR_05	TPSH	Indiv.	3911792,0461	344648,7040	4955439,4247	51°48'40,46898"	4°30'44,93081"	81,3444		
TURN	TPSCR_05	TPSH	Indiv.	3938461,0323	321203,4556	4980896,7782	51°39'52,85683"	4°40'28,49271"	64,8852		
DORD	TPSCR_05	TPSH	Indiv.	3862716,9441	316030,3513	5048047,6332	52°39'52,85683"	5°23'50,91267"	80,4154		
HEER	TPSCR_05	TPSH	Indiv.	3824157,8098	361336,3666	5074614,8285	52°03'36,43454"	5°12'20,54317"	50,5542		
NAKK	TPSCR_05	TPSH	Indiv.	3881617,8191	353109,1271	5018109,3082	52°22'17,01858"	5°12'20,54317"	87,8498		
ALME	TPSCR_05	TPSH	Indiv.	3881617,8191	353109,1271	5018109,3082	52°22'17,01858"	5°12'20,54317"	87,8498		

Bewoudens de voortdurende, ongewijzigde en bevestigende werking van de referentiestation(s) en gebruikmakend van bovenstaande coördinaten is dit certificaat geldig van 30 november 2019 tot en met 30 november 2020.

Voor Kadaster en CIV
 Datum: 22 februari 2021
 Donus Kruse

Certificaat nummer: 20200601

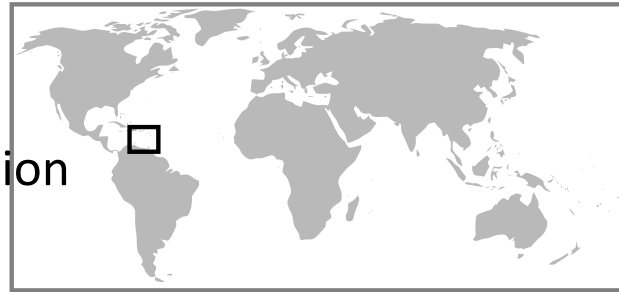


-  AGRS.NL
-  NETPOS
-  Footprints (GNSS-kernet)
-  Certified stations

GNSS network infrastructure - Caribbean

Kadaster responsible for 3 netherlands municipalities

- Modernisation GNSS-infrastructuur
- Maintenance physical network
- Time dependent coordinate transformation
- Single baseline RTK



Coordinate transformation

- Official transformation RDNAPTRANS™2018 between ETRF2000 and RDNAP
- Validity of old transformation ended October 1st 2022
- RDNAPTRANS™2018 fully compatible with PROJ.
- Also available as an API
- Validation service available for users to check software settings
- Software can be certified to use the trademark
- Several GNSS hardware providers, GIS software, geodetic software, etc. have certified their implementation

Secure connection to NTRIP caster

- Dedicated APN (production)
 - Private network without internet (mobile VPN)
- Server side TLS (testing)
 - Available in some hardware
- Client and server side TLS (under development)
 - Client certificate required for connection to NTRIP caster

kadaster



National report Netherlands

Lennard Huisman

Netherlands Partnership for Geodetic Infrastructure

Kadaster

November 2022 EUPOS Technical meeting