



Latvijas Ģeotelpiskās
informācijas aģentūra

National Report

Latvian Geospatial information agency

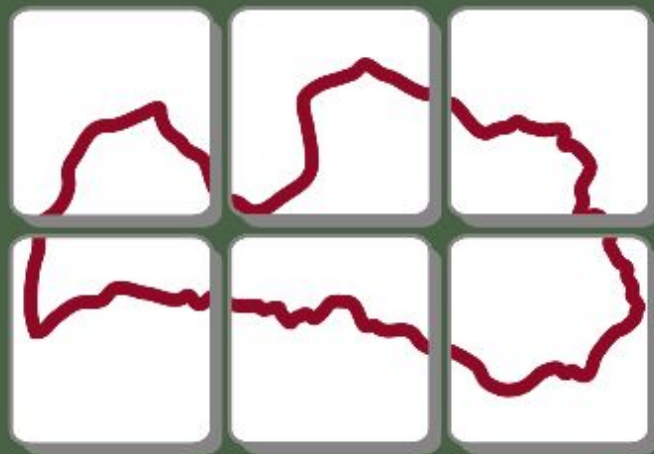
NKG General Assembly

Vilnius
16.09.2026.

Vents Zusevics
Expert
Department of Geodesy
National Group Chair

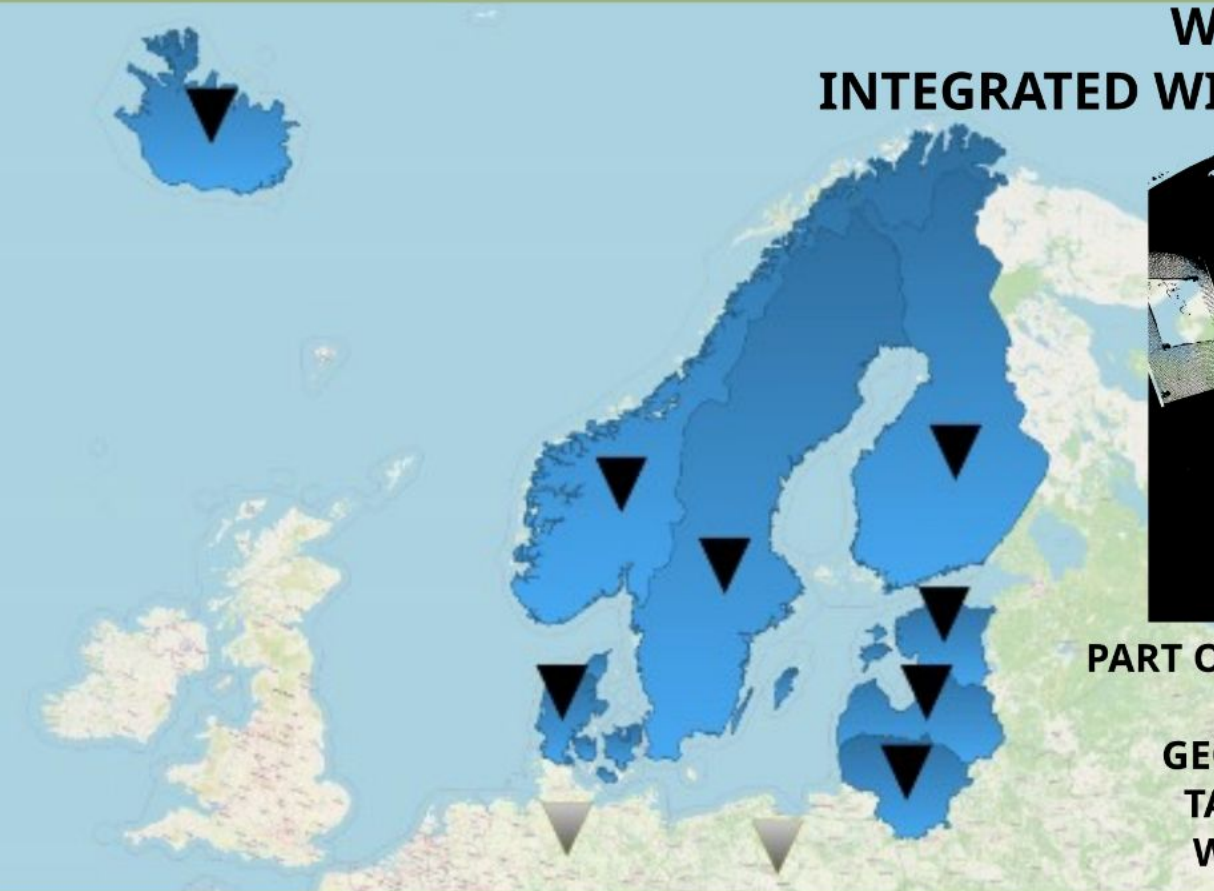
LATVIAN GEOSPATIAL INFORMATION AGENCY

**NATIONAL AUTHORITY OF GEODESY AND
MAPPING**



**LATVIJAS ĢEOTELPISKĀS
INFORMĀCIJAS AĢENTŪRA**

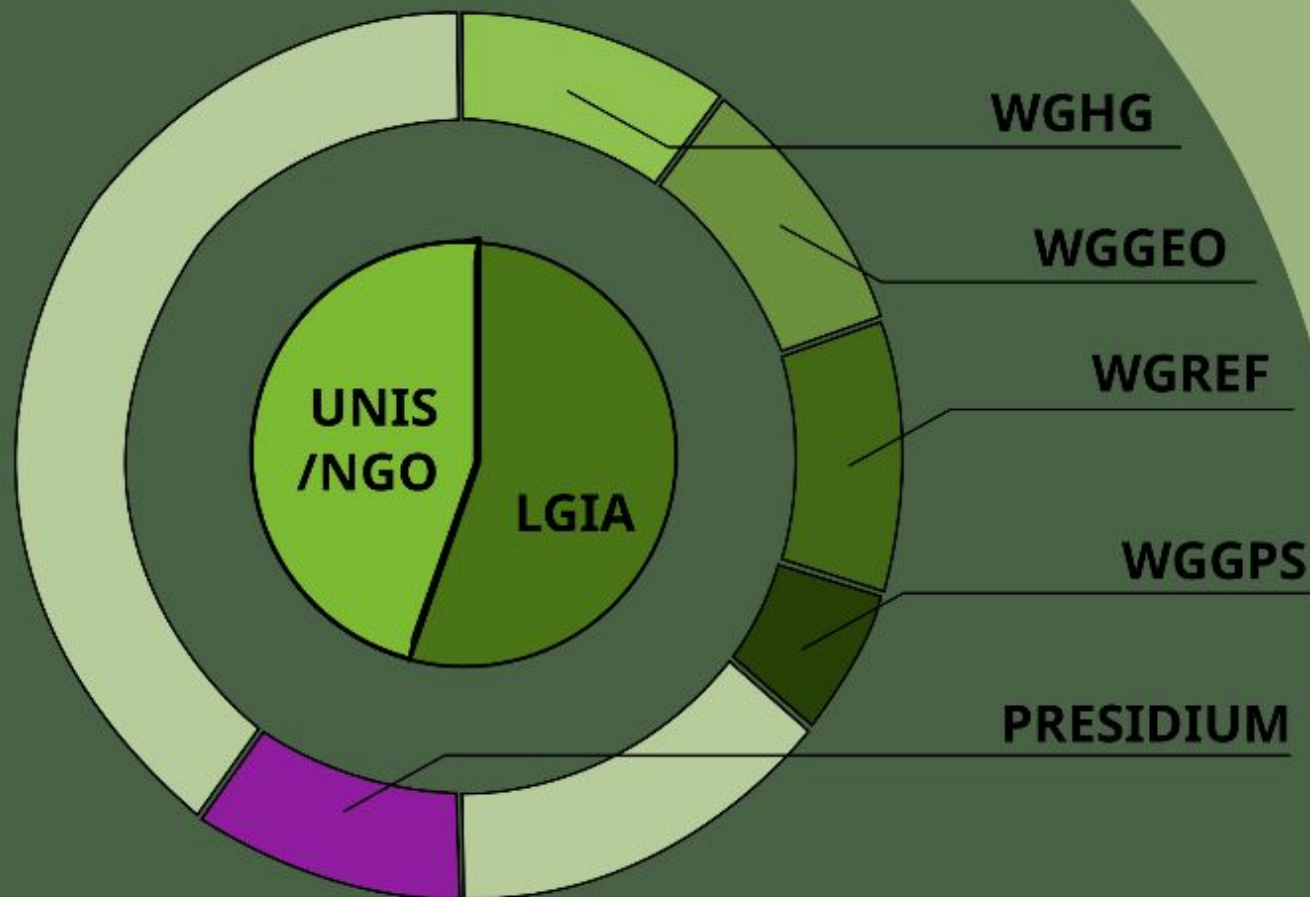
**ON THE FRONTIER OF EUROPE
WITH A SIGHT TO THE WEST
INTEGRATED WITHIN BALTIK SEA REGION**



PART OF THE NATIONAL DEFENSE POLICY

**GEOPOLITICAL SITUATION DEMANDS
TASKS AND STRUCTURE TO BE MADE
WITH SECTOR OF DEFENSE IN MIND**

LATVIAN NATIONAL GROUP



**- NKG REGIONAL
SUBDIVISION**

**COORDINATES
COOPERATION
OF MEMBERS
IN LATVIA**

**DOMESTIC
MEETINGS
BIANNUALLY**

**30 MEMBERS
AND GROWING**

**ACTIVE IN ALL FOUR
WORKING GROUPS**

UPKEEP OF DOMESTIC RF



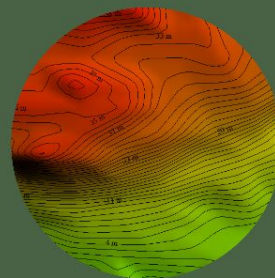
**LINKING DOMESTIC AND GLOBAL
REFERENCE**



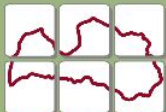
PUBLIC OUTREACH



**INVESTIGATING THE
GEOPOTENTIAL FIELD**

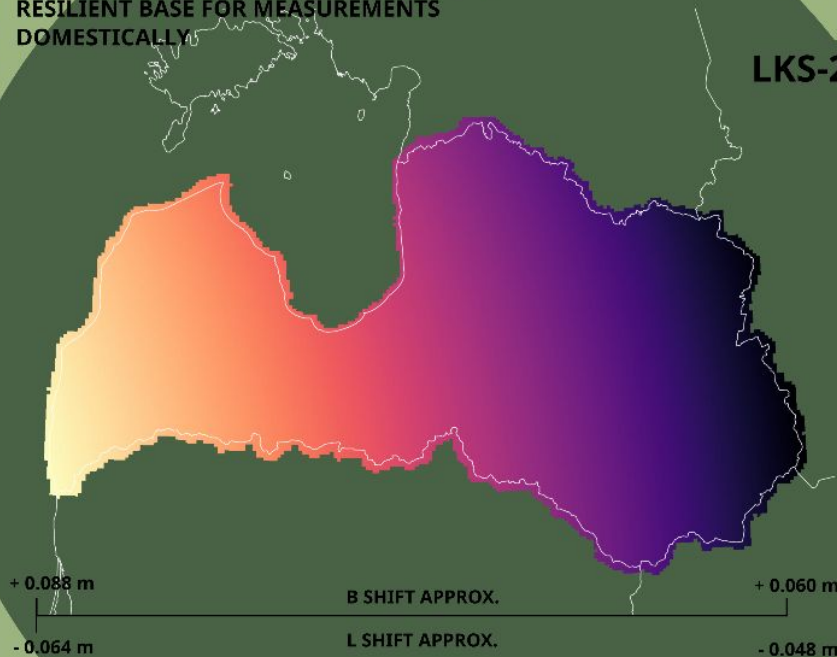


STATE GEODETIC REFERENCE FRAME



LATVIJAS GEODETISKĀS
INFORMĀCIJAS AĢENTŪRA

PROVIDING PRECISE, TRUSTWORTHY AND
RESILIENT BASE FOR MEASUREMENTS
DOMESTICALLY

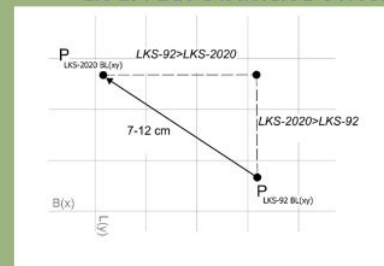


LKS-2020 COORDINATE REFERENCE SYSTEM

REPLACING PREVIOUS RF LKS-92

A MODERN REALIZATION OF ETRF

IN EFFECT STARTING 01.10.2026.



LEGAL FRAMEWORK DEVELOPED
WITHIN AGENCY -

GEOSPATIAL INFORMATION LAW

REGULATIONS REGARDING THE
GEODETIC REFERENCE SYSTEM AND
THE TOPOGRAPHIC MAP SYSTEM

LatPOS RTK NETWORK

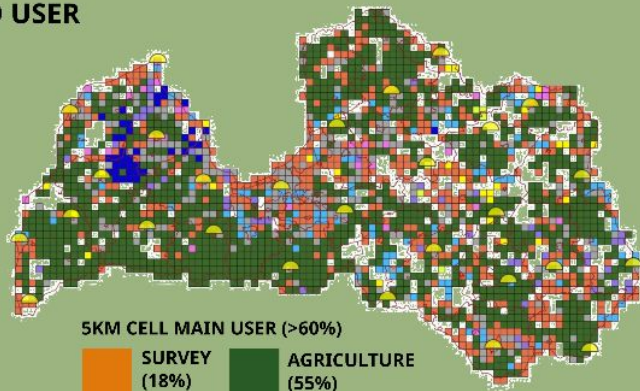
RTK PRECISE POSITIONING TO END USER

RTK, RTK-BeiDOU, RTK-4GNSS

~350 NEW USERS ANNUALLY
(3250 IN TOTAL)

SERVICE FREE OF CHARGE
TO END USERS

RECENT MOVE TO SFTP,
INCREASED SERVER POWER



THE GREAT NETWORK



4D NETWORK

PRECISE HEIGHT AND
COORDINATE VALUES

FORCED CENTERING

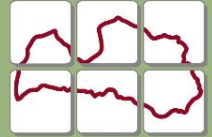
20 SITES ESTABLISHED
30 MORE ON THE WAY



INTERNATIONAL ADHERENCE



CONNECTING NATIONAL FRAME
TO INTERNATIONAL SYSTEM



LATVIJAS ĢEOTELPISKĀS
INFORMĀCIJAS AĢENTŪRA

LATREF GNSS NETWORK

5 LONG-TERM BASE STATIONS

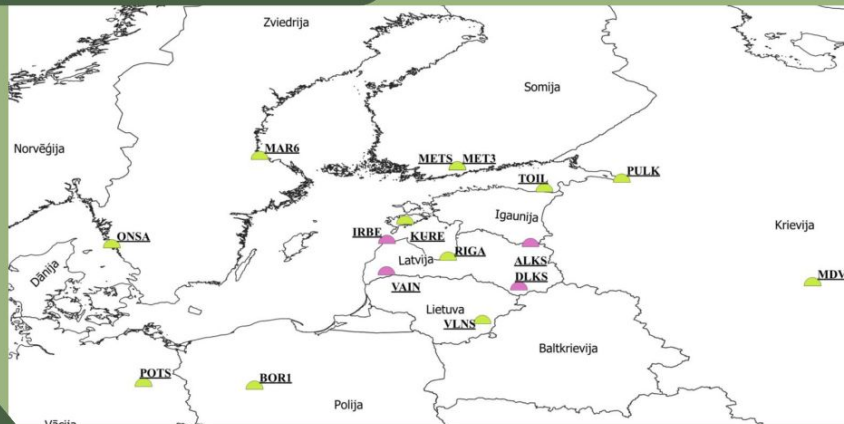
MAINTAINING THE LINK BETWEEN
GLOBAL AND NATIONAL NETWORKS

ALSO DEFINES COORDINATE SYSTEM LKS-2020



AS PART OF EUREF PERMANENT NETWORK

**MARCH 22 2026 - ALKS AND DLKS
INCLUDED IN EUREF PERMANENT
NETWORK
CURRENTLY ALL 5 LATREF STATIONS
REPRESENTED**

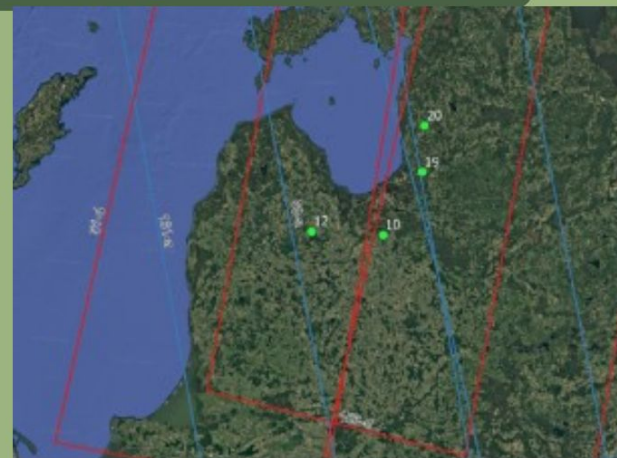


INSAR INFRASTRUCTURE TESTS

**CORNER REFLECTORS
MANUFACTURED, DESIGN BY
LANTMATERIET**

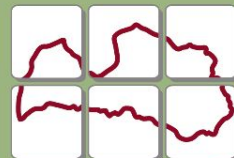
TEST MEASUREMENTS IN LATE 2025

**REFLECTIONS VISIBLE, BUT CR
ORIENTATION NEEDS TWEAKING**



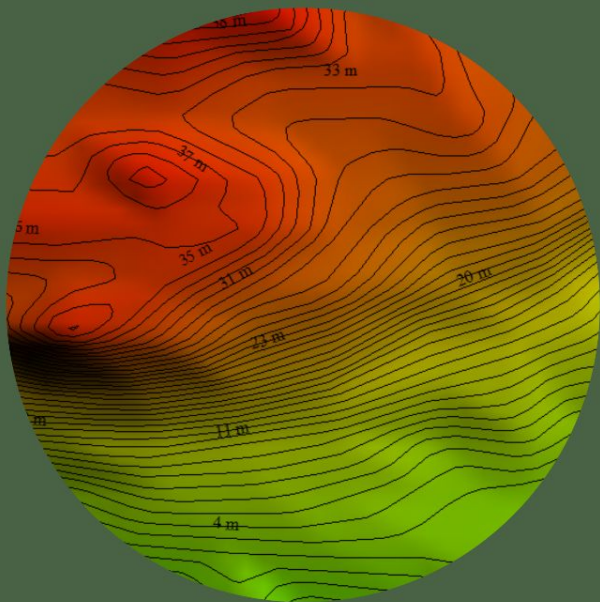
GEOPOTENTIAL SURVEY

MAPPING, MODELLING AND ANALYZING
THE GEOPOTENTIAL FIELD IN LATVIA



LATVIJAS GEOTELPISKĀS
INFORMĀCIJAS AĢENTŪRA

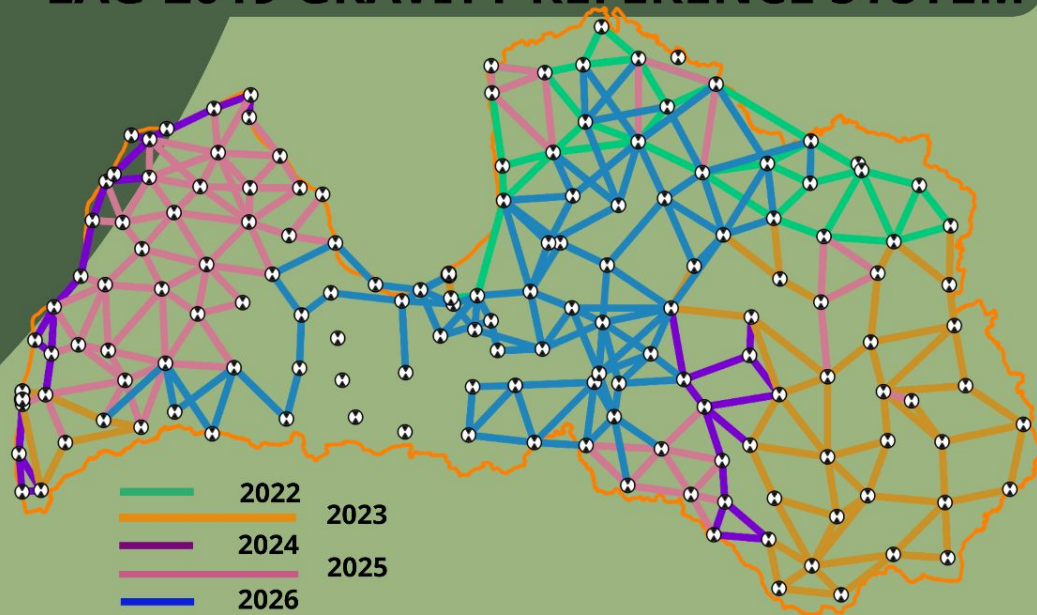
LAG-2019 GRAVITY REFERENCE SYSTEM



FG5X-221 BASE STATIONS (FGI)
STATIONS ALIGNED WITH LATREF AND SLR
STATIONS

CG6 TIES, CAMPAIGN ONGOING
ADJUSTMENT RESIDUAL SD $5\mu\text{GAL}$

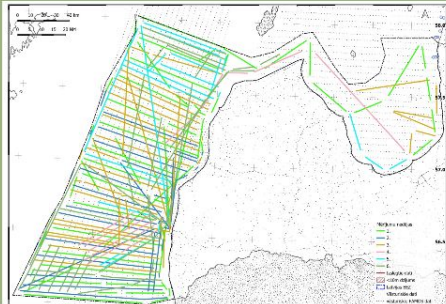
ESTABLISHED WITH ITGRF GUIDELINES AND
DEVELOPMENT IN MIND.



**BALMARGRAV REZEKNE CAMPAIGN
2023 IV-VI**

**X-OVER SD 0.1mGAL (n ~ 1000)
LANTMATERIET ZLS MARINE
GRAVIMETER
REFERENCE IGIK A10/LGIARELATIVE
TIES**

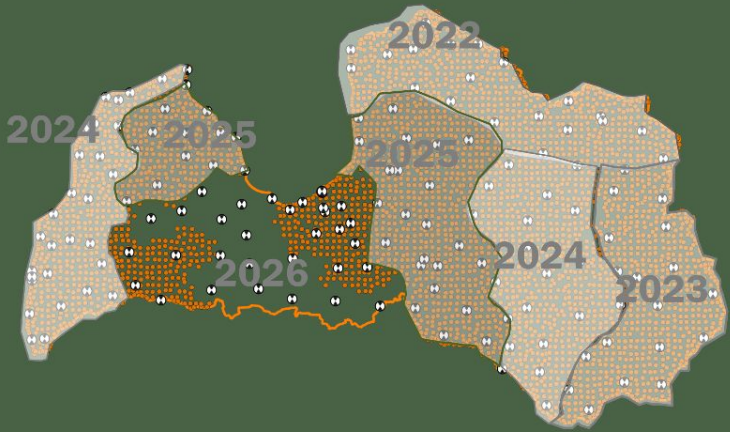
**HISTORICAL DATA OFFSET DETECTED
BASIS FOR A NEW, PRECISE MARINE
GEOID**



GEPOTENTIAL SURVEY CAMPAIGNS

**MAINLAND RELATIVE GEOPOTENTIAL SURVEY
2022-ONGOING**

**4KM DATA STEP
SCINTREX CG-6 & CG-5 GRAVIMETERS
INTERLOCKING LOOPS, DRIFT CONTROL STATIONS
POINT VALUE REPEATABILITY SD 50µGAL**



**COASTAL SURVEY
2024 VIII**

**AIDED BY NATIONAL GUARD
SURVEY IN RUGGED TERRAIN OFF GRID
DATA PROVIDES CONNECTION BETWEEN
MARINE AND LAND SURVEYS**

STRUVE'S GEODETIC ARC

UNESCO WORLD HERITAGE STATUS FORVAR 2 LATVIAN SITES -
JACOBSTADT AND SESTU-KALNS

OUTREACH BY STRUVE COUNCIL IN LATVIA:

INFORMATIVE EVENTS (SCIENCE PICNICS)

HISTORICAL EVENTS (CYCLING TRIPS)

LONG TERM COOPERATION WITH LOCAL STRUVE SCHOOLS

STRUVE'S PUZZLE

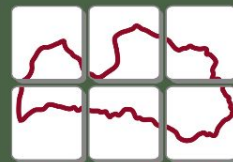
RADIO APPEARANCES

EDUCATIONAL VIDEOS



EDUCATING THE PUBLIC

POPULARIZING NATIONAL ACHIEVEMENTS IN
SCIENCE AND ENGINEERING



LATVIJAS GEOTĒLPISKĀS
INFORMĀCIJAS AĢENTŪRA

PUBLIC OUTREACH

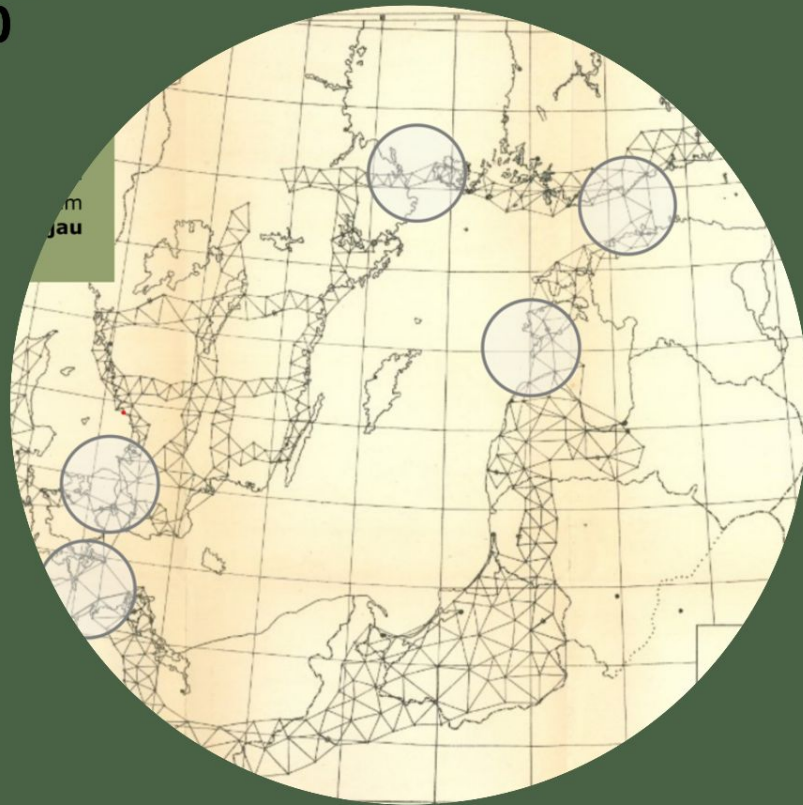
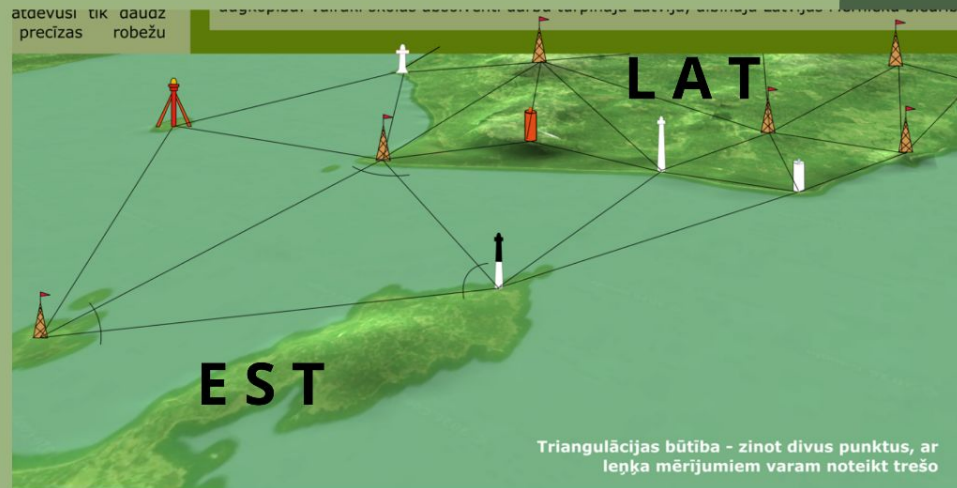


BALTIC GEODETIC COMMISSION '100

CENTENNIAL EVENT

CELEBRATING AND REPEATING HISTORICAL MEASUREMENTS
ACROSS SEA STRAIT: BALTIC GEODETIC RING

POP-UP CONCEPT

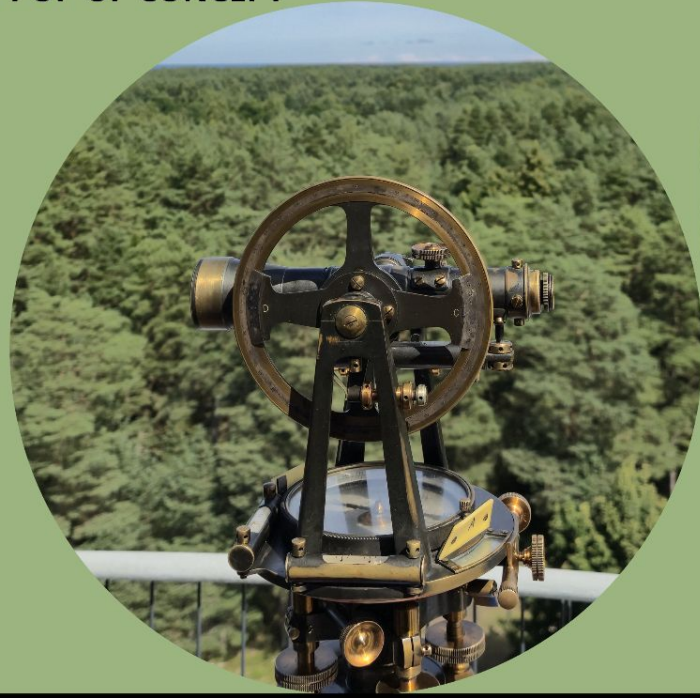


BALTIC GEODETIC COMMISSION '100

CENTENNIAL EVENT

CELEBRATING AND REPEATING HISTORICAL MEASUREMENTS
ACROSS SEA STRAIT: BALTIC GEODETIC RING

POP-UP CONCEPT



Industriālajam mantojumam Lībiešu krastā

—BALTIJAS ĢEODEZISKAJAM RIŅĶIM 100—

24. JŪLIJĀ 12.00 - 16.00

Ģeodēzija - zinātne, kas pēta un apraksta Zemi un tās formu

Baltijas Ģeodēzijas riņķis - 20.gs. sākuma industriālās mantojuma Lībiešu krastā. Noņemotie precīzi un vienotie ģeodēziskie mērījumi Baltijas jūras vaļēti.

Igaunijas un Latvijas tīklu savienošanai mērījumi tika veikti pie Irbes Sauruma, izmantojot līdz 30m augstus kolka torņus un līkātus, vairākus mērījumu vietas saglabojot līdz mūsdienām.

OVĪŠI

KOLKA

Kolkas ragā un Ovišu bākā
12.00 - 16.00

Iepazīstī vēsturiskos instrumentus un kā mērījumu veica pirms simt gadiem

Izmantojot tālskati, uzskaidrī Igaunijas salas redzamos orientierus

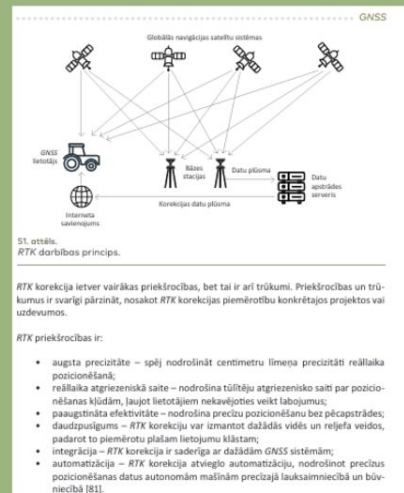
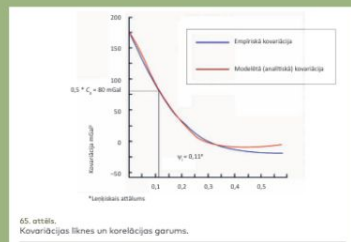
Iepazīstī Zemes zinātnes piedaloties izglītības spēlē

PRACTICUM OF GEODESY

**METHODS AND PRINCIPLES OF GEODESY EXPLAINED
FROM FIELD WORK TO DATA PROCESSING AND ANALYSES TO SURFACE MODELLING
20 YEARS OF AGENCY'S PRACTICAL EXPERIENCE BOILED DOWN TO 225 PAGES**

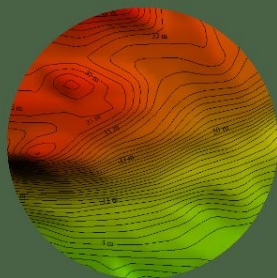
**FOR:
PRESENT AND FUTURE COLLEAGUES
INDUSTRY NEWCOMERS AND SPECIALISTS
UNIVERSITY STUDENTS
POLICY MAKERS
OUTSIDERS**

PUBLISHED IN OCTOBER 2025

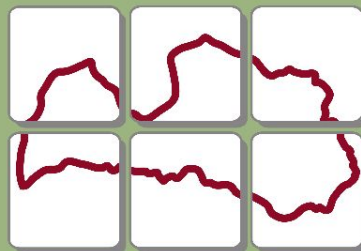


ĢEODĒZIJAS PRAKTIKUMS





AČIŪ!



LATVIJAS ĢEOTELPISKĀS
INFORMĀCIJAS AĢENTŪRA