Comprehensive solution for georeferencing of humanitarian demining tools

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(2) V.M. Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine, Kyiv, Ukraine

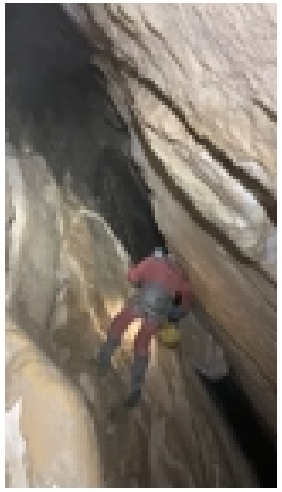
(3) Robotec.ai, Warsaw, Poland

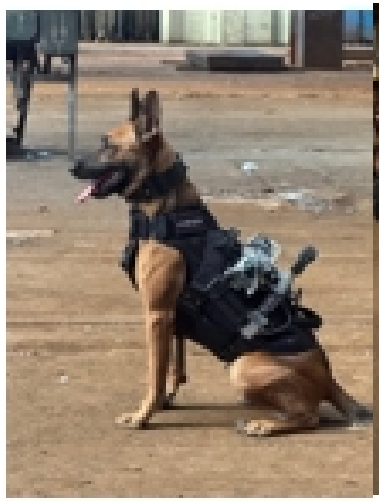
(4) Technical University of Darmstadt, Department of Civil and Environmental Engineering Sciences, Darmstadt, Germany

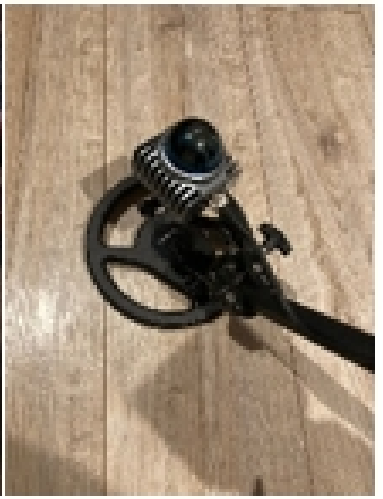
USB

Power cable

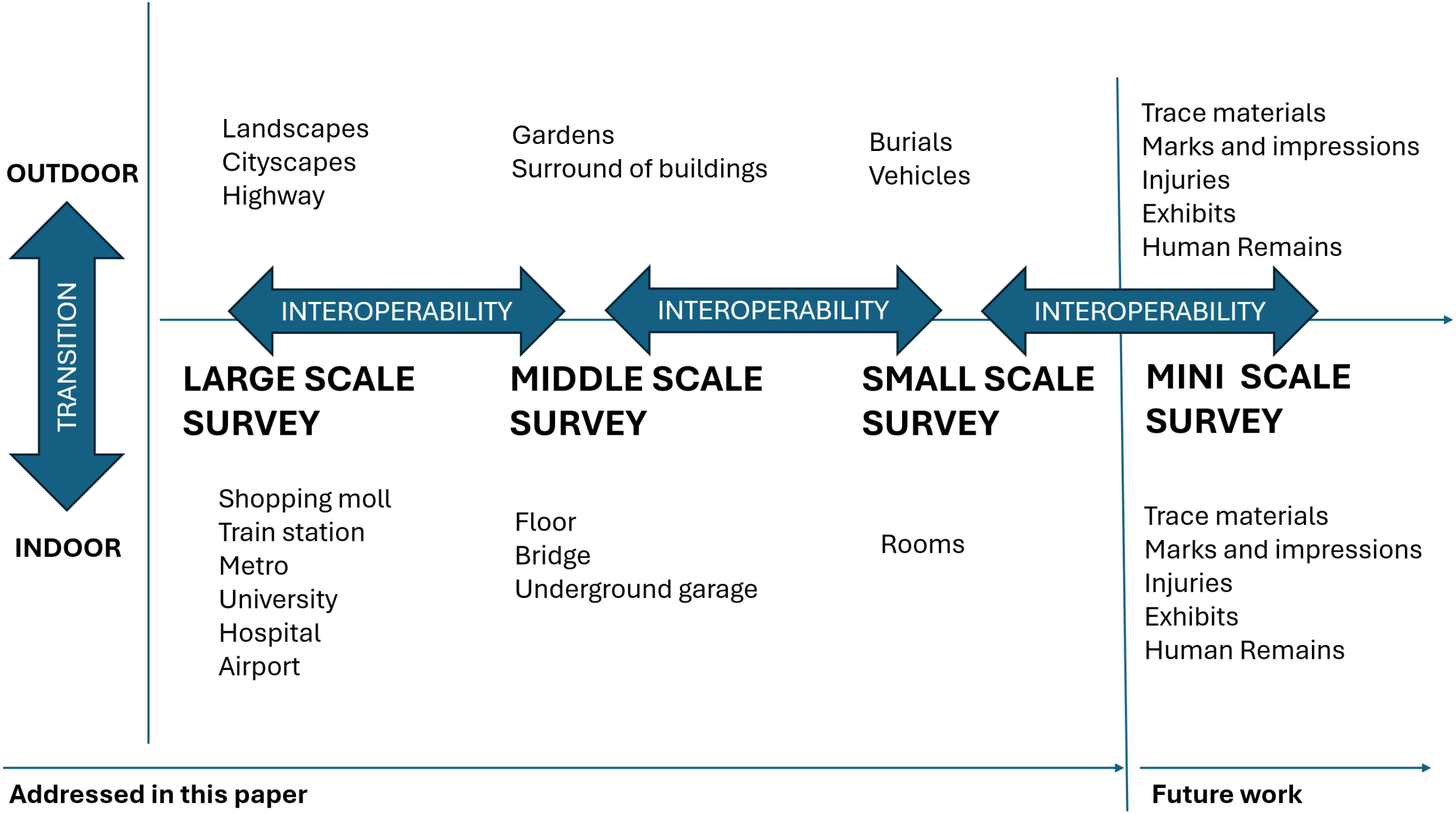
Power Bank

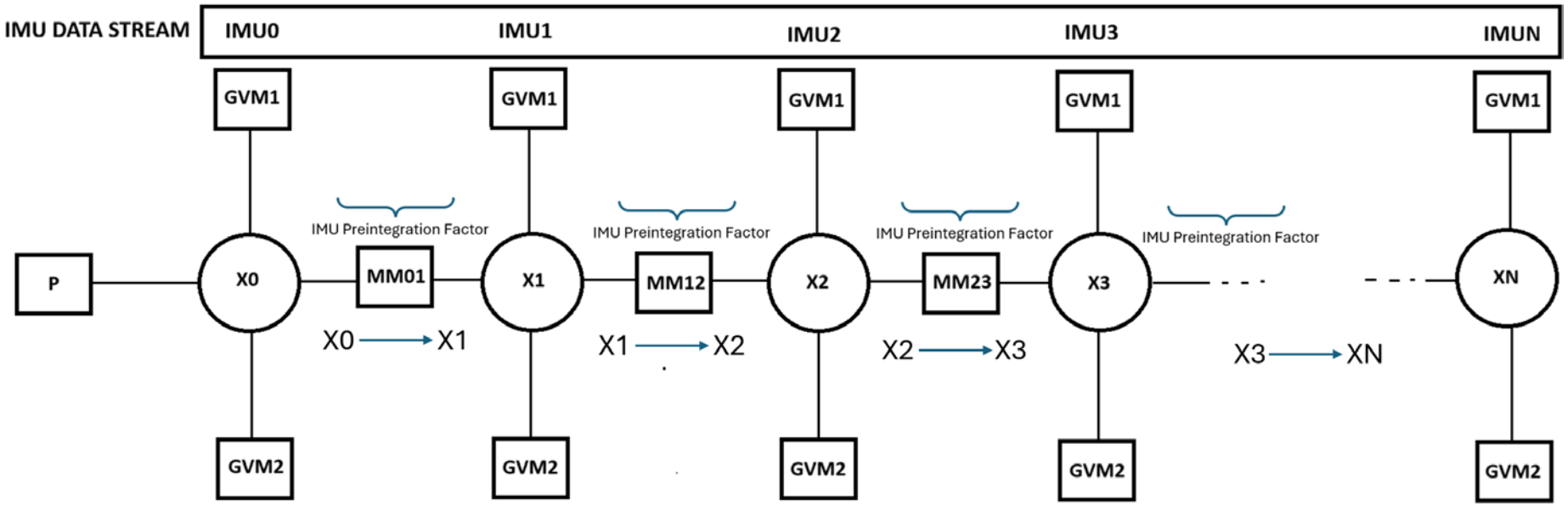







Tefal
343
tare


OUTDOOR
TRANSITION
INDOOR
Landscapes
Cityscapes
Highway
Gardens
Surround of buildings
Burials
Vehicles
Trace materials
Marks and impressions
Injuries
Exhibits
Human Remains
INTEROPERABILITY
INTEROPERABILITY
INTEROPERABILITY
LARGE SCALE SURVEY
MIDDLE SCALE SURVEY
SMALL SCALE SURVEY
MINI SCALE SURVEY
Shopping moll
Train station
Metro
University
Hospital
Airport
Floor
Bridge
Underground garage
Rooms
Trace materials
Marks and impressions
Injuries
Exhibits
Human Remains
Addressed in this paper
Future work

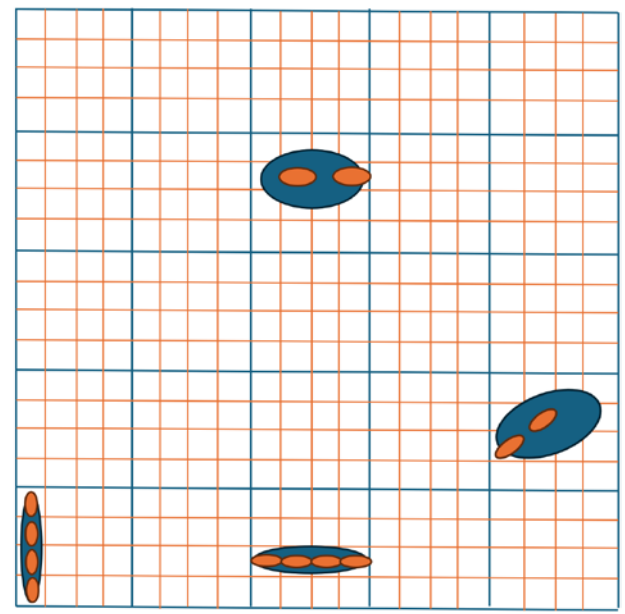


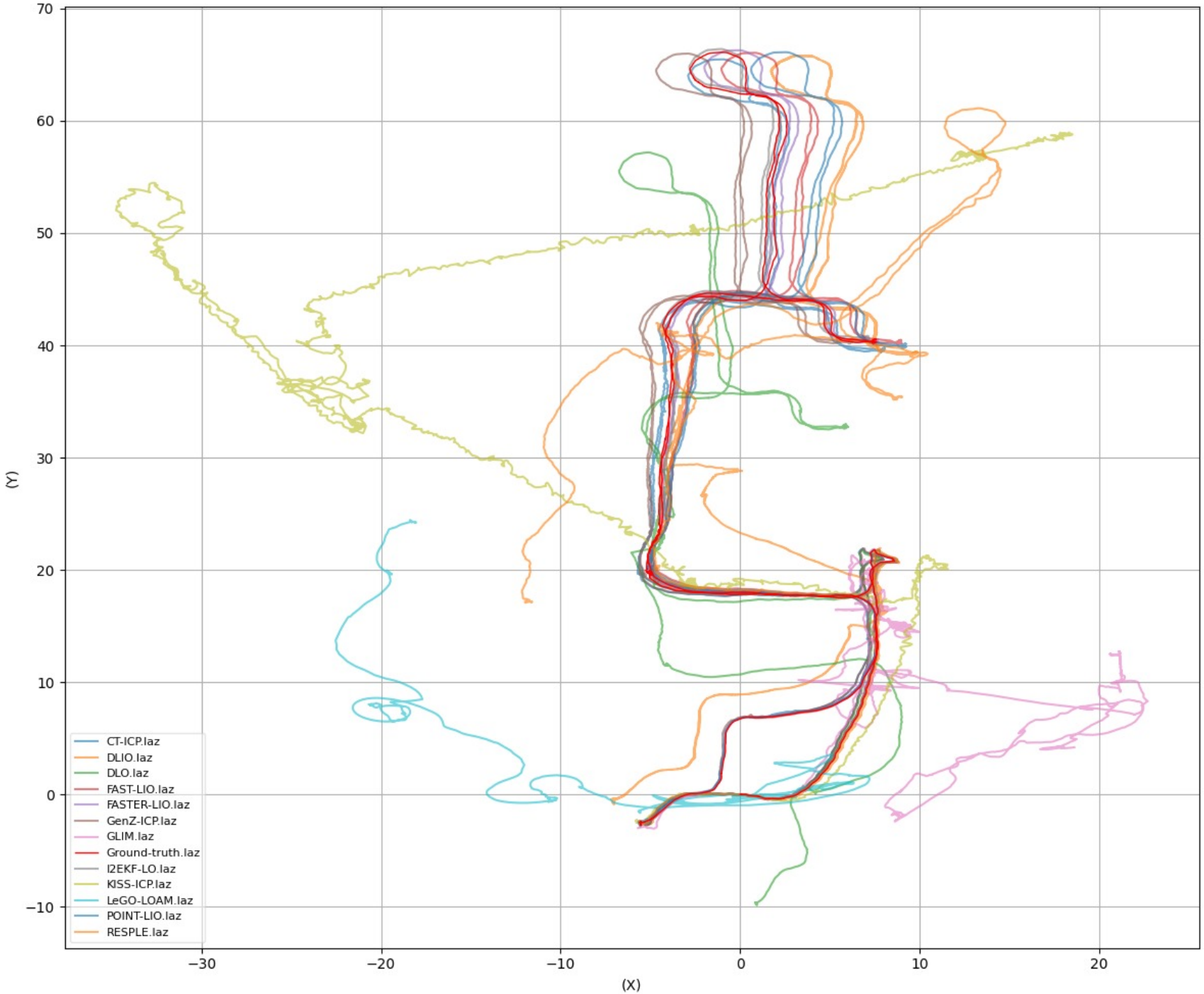
X0 → X1 Motion model (relative pose from X0 to X1)

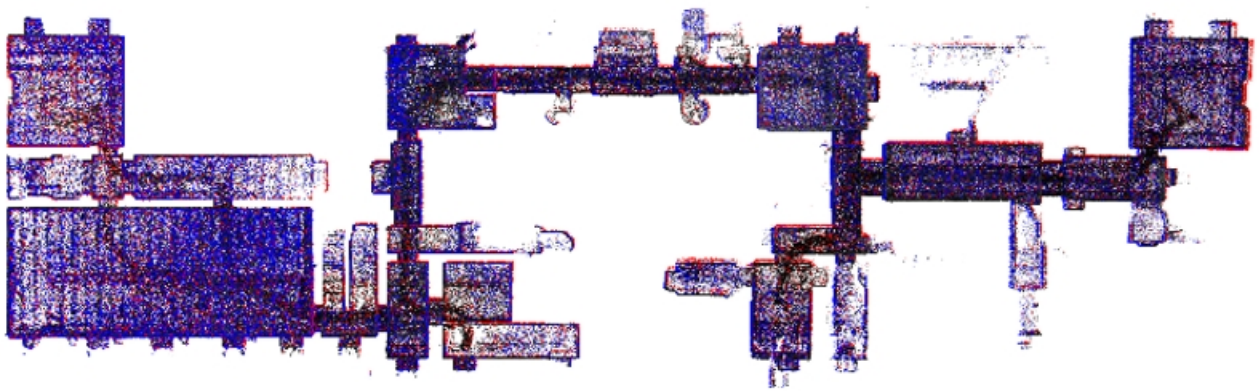
GVM1 Gaussian Voxel Map 1 (small buckets)

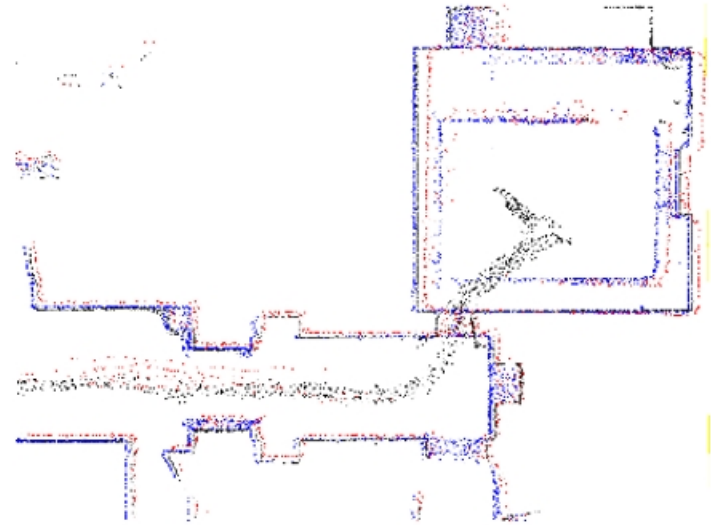
GVM2 Gaussian Voxel Map 2 (large buckets)

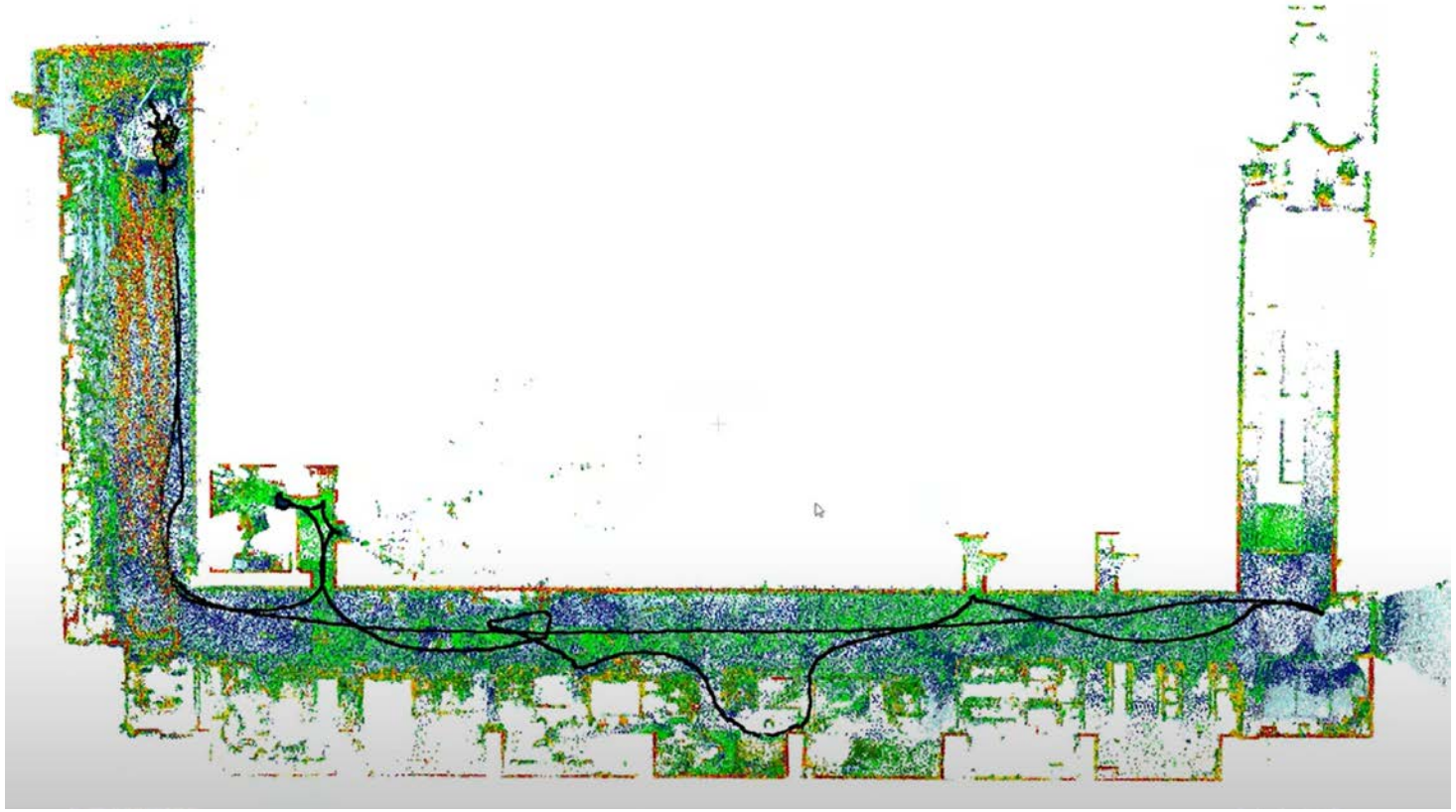
P Prior

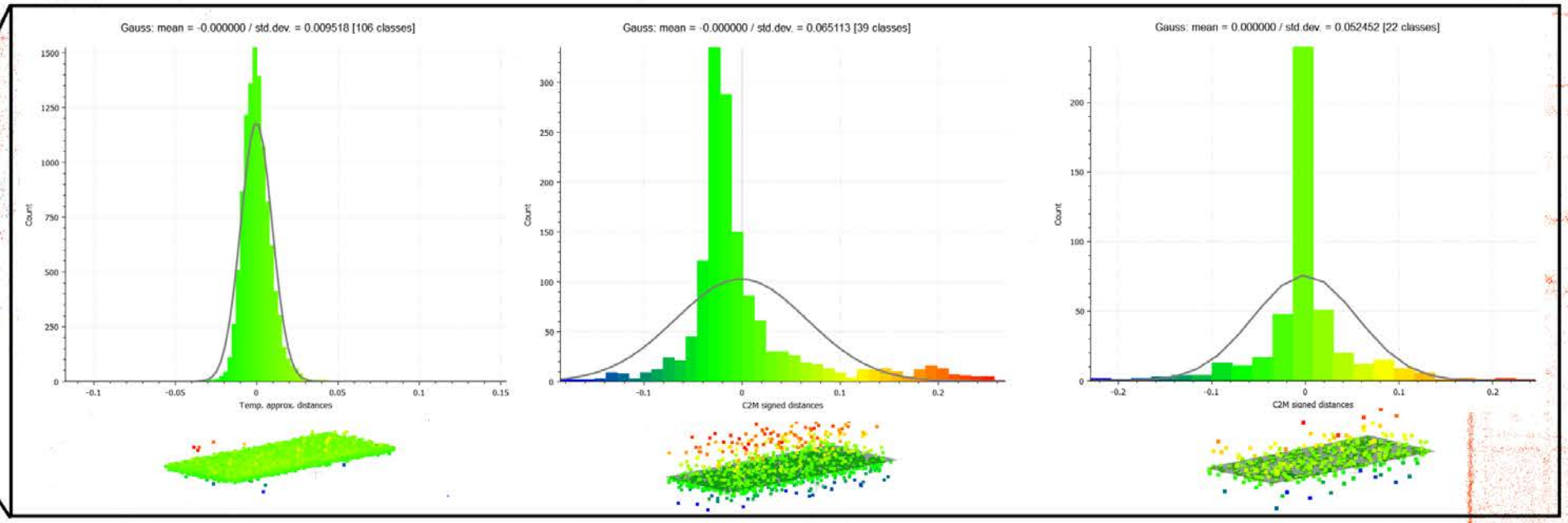



70
60
50
40
30
20
10
0
−10
(Y)
−30
−20
−10
0
10
20
(X)
CT-ICP.laz
DLIO.laz
DLO.laz
FAST-LIO.laz
FASTER-LIO.laz
GenZ-ICP.laz
GLIM.laz
Ground-truth.laz
I2EKF-LO.laz
KISS-ICP.laz
LeGO-LOAM.laz
POINT-LIO.laz
RESPLE.laz

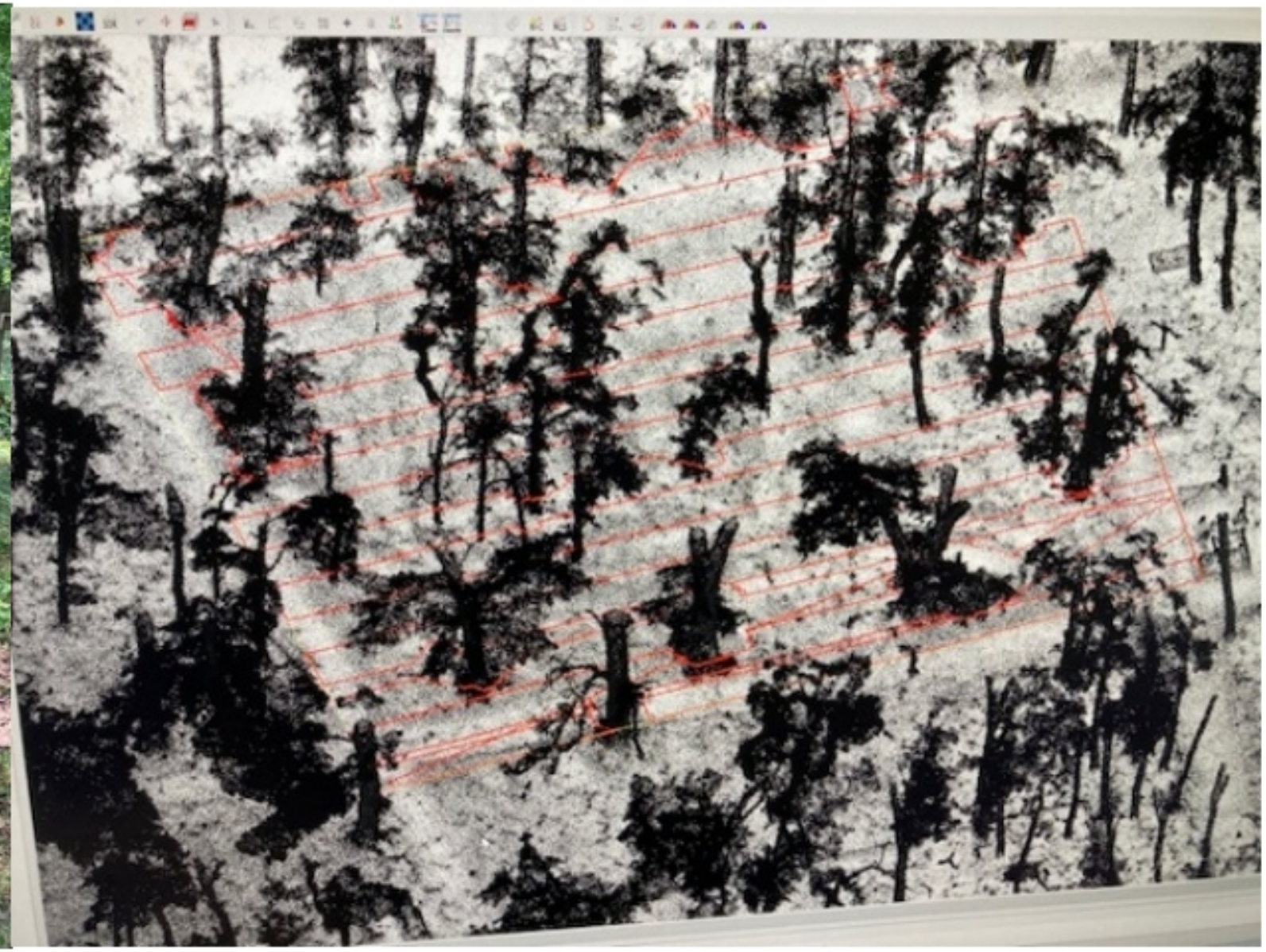


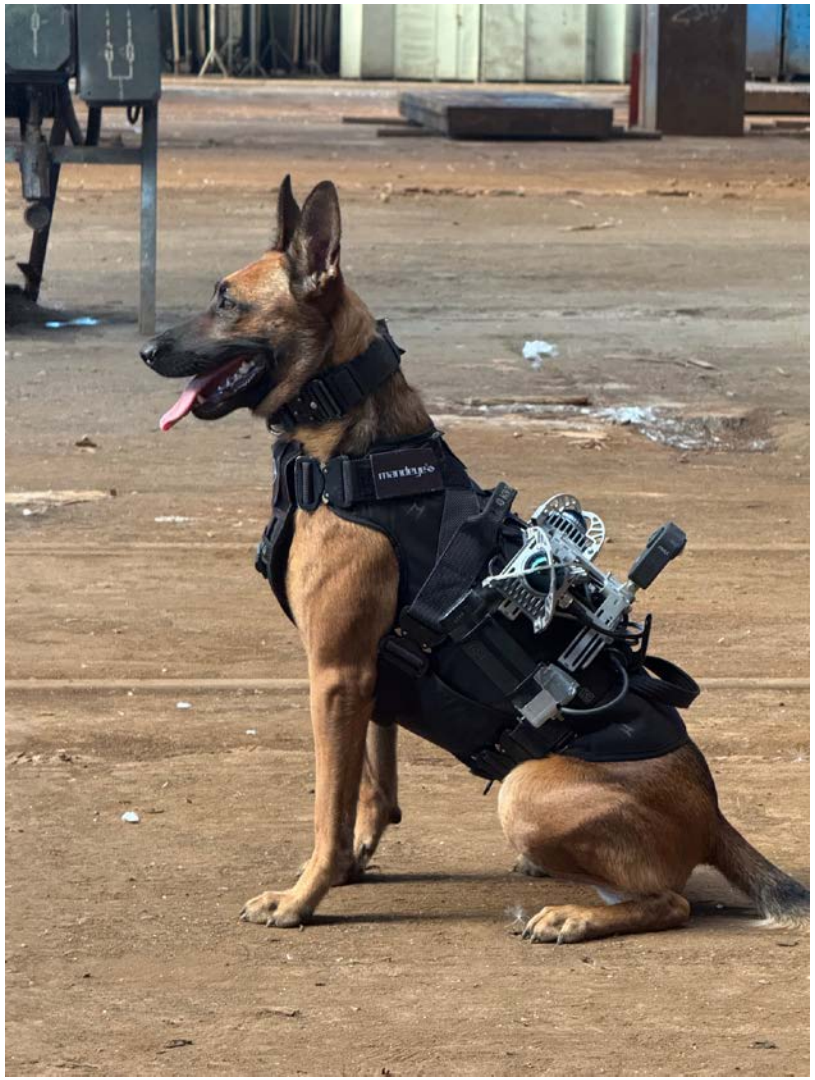


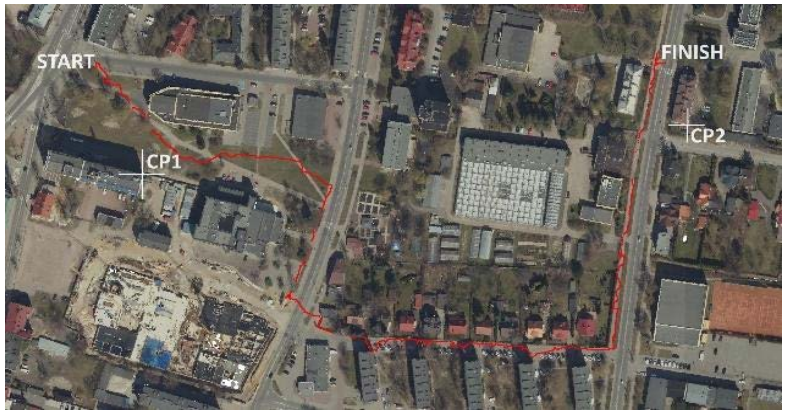


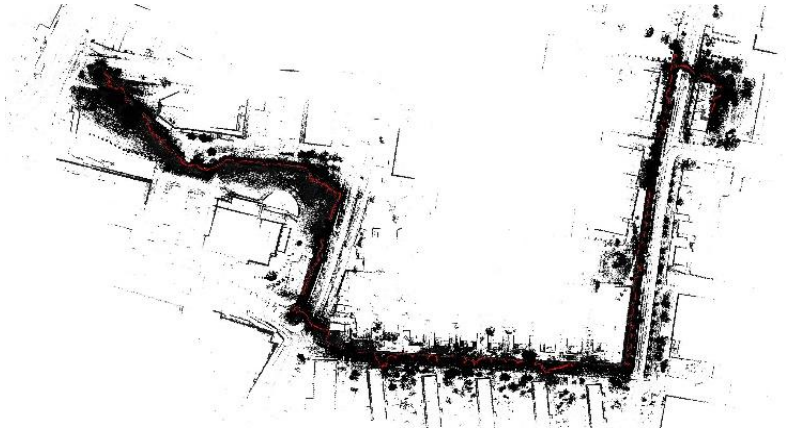


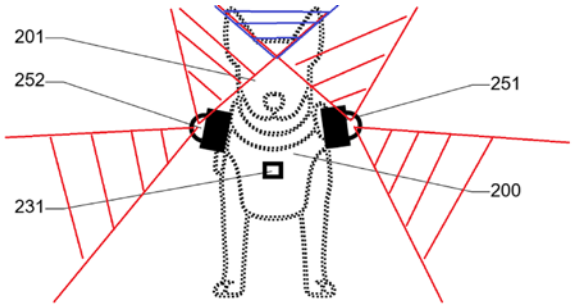
OUR **FAST-LIO** **FASTER-LIO**

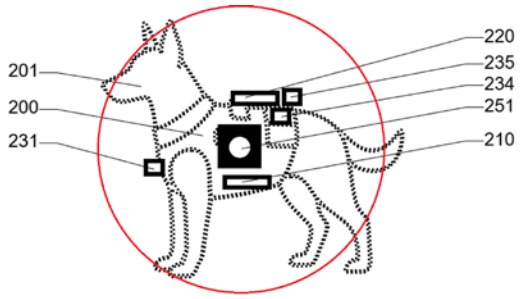





START
FINISH
CP1
CP2



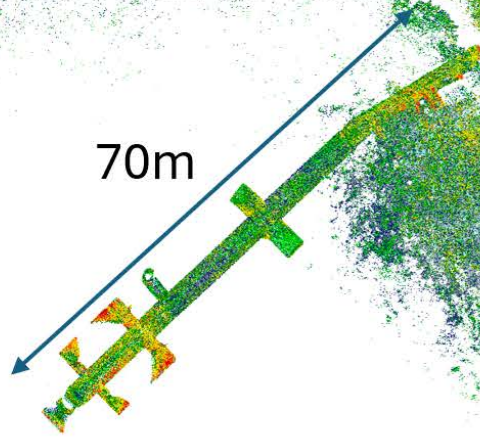

201
252
251
231
200

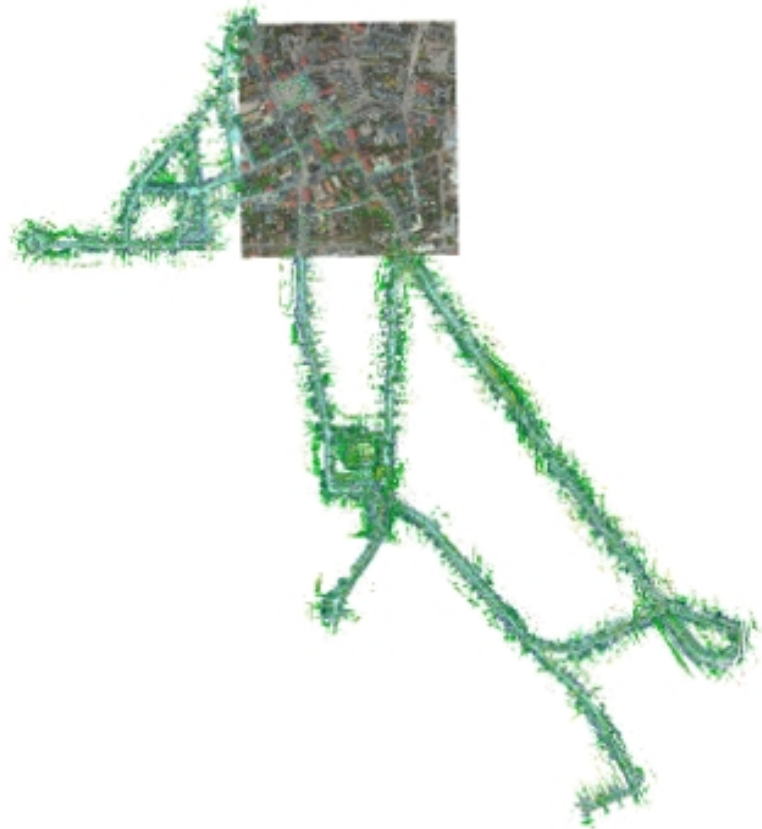

201
200
231
220
235
234
251
210

300m

FOREST

TUNNEL

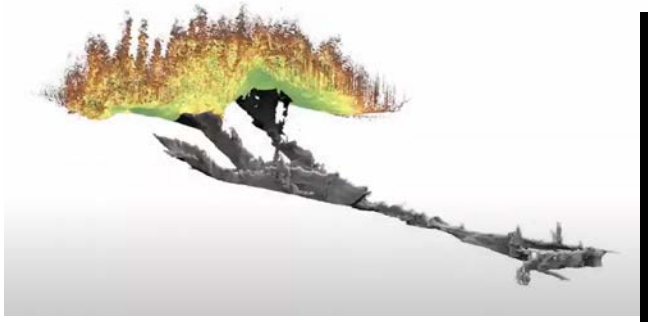


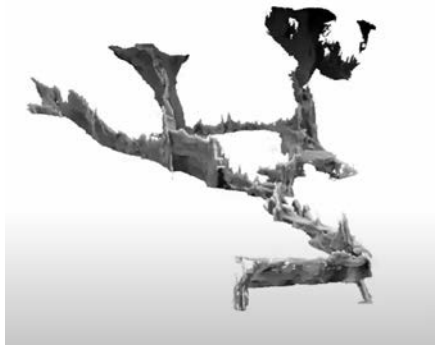


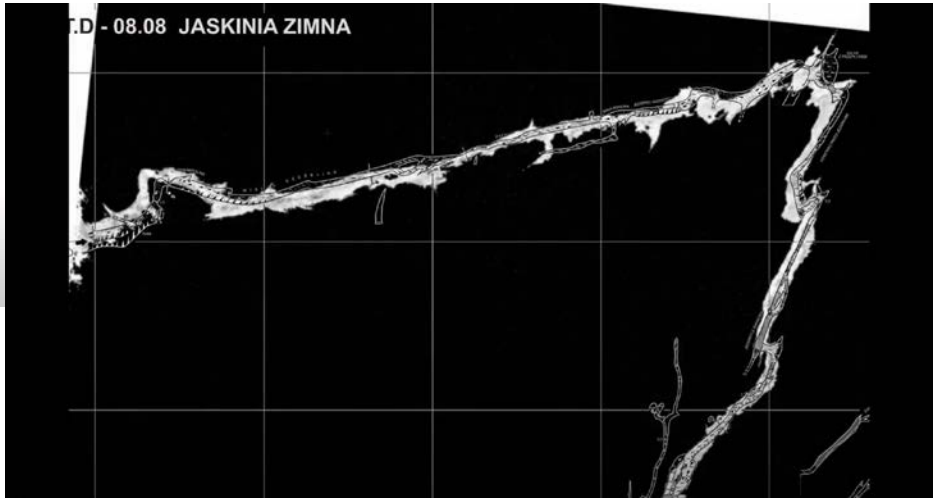

Mokra Prawa
okra
Ruda
MIEDNIEWICE
TOPOLA
Park miejski w
Skierniewicach
Rynek w Skierniewicach
Miedniewice
Skierniewice
Muzeum Historyczne
Skierniewic im. Jana
Pamiętna
Balcerów
Rawiczów
Ludwików
Podtrzcianna
Dębowa Góra

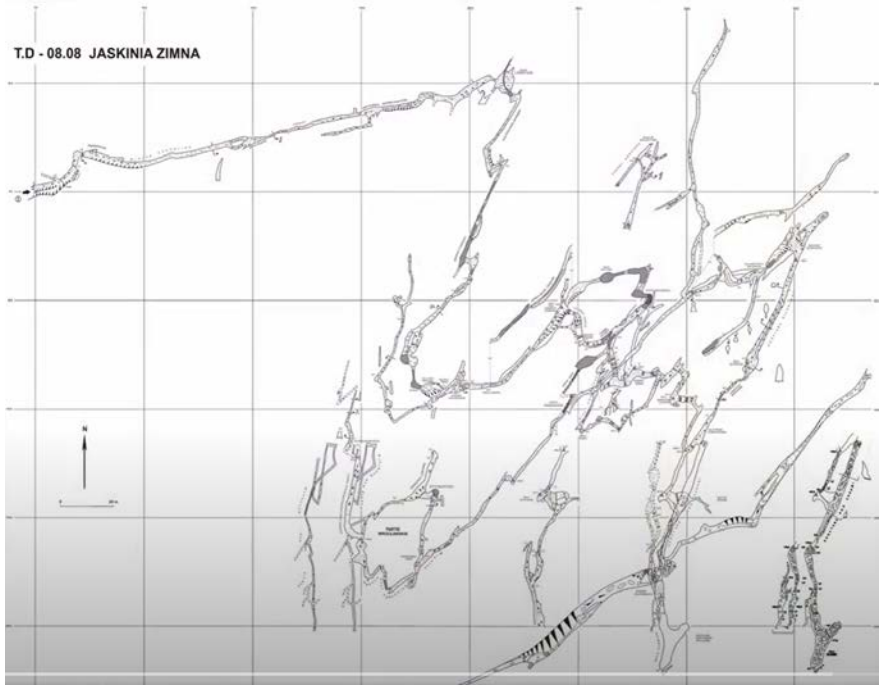

Romunia - Pestera Ferigi


STATIC
CONTINUOUS
POWER
COPY DATA
mandeye

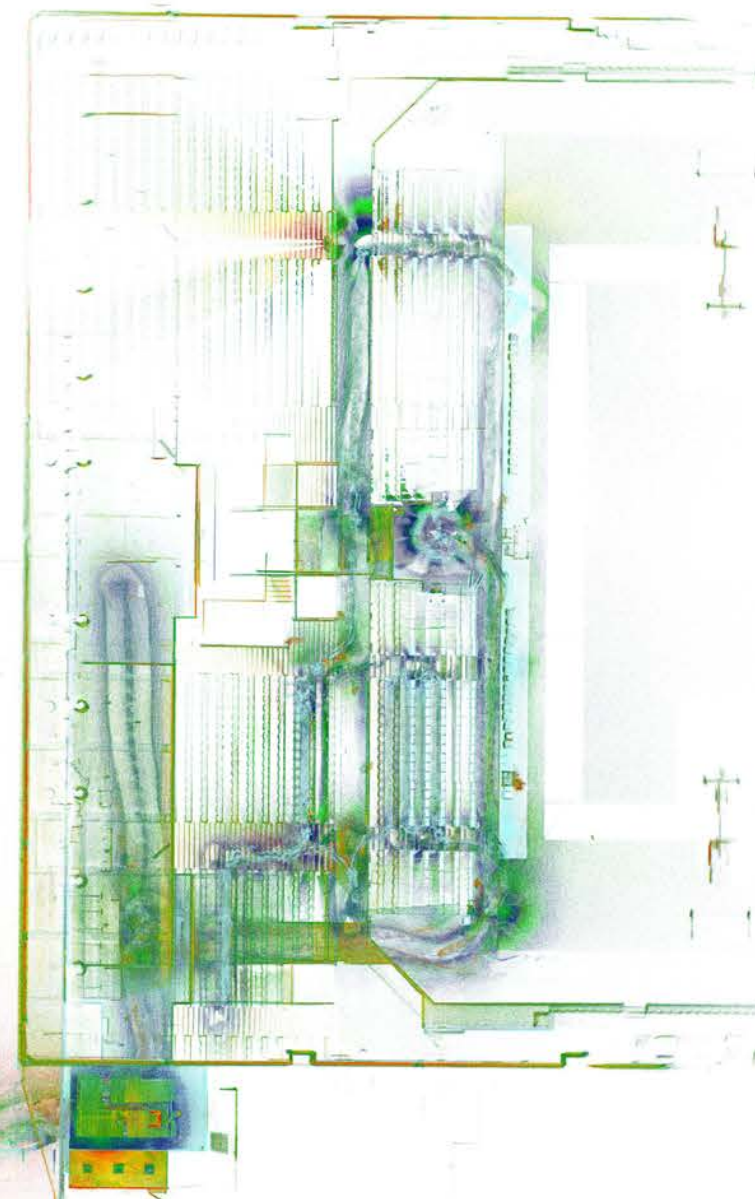


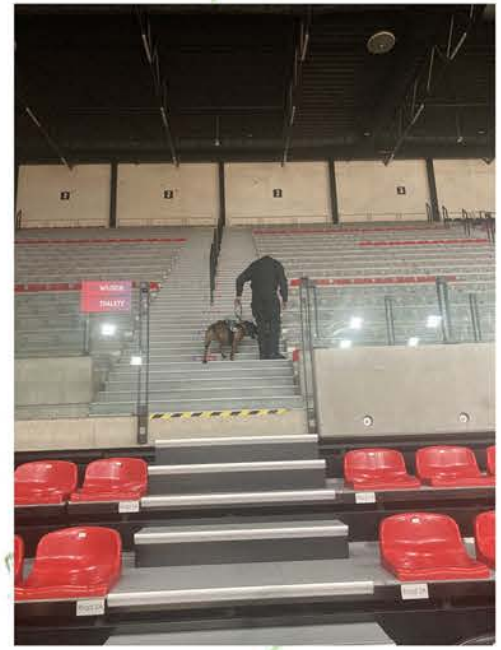


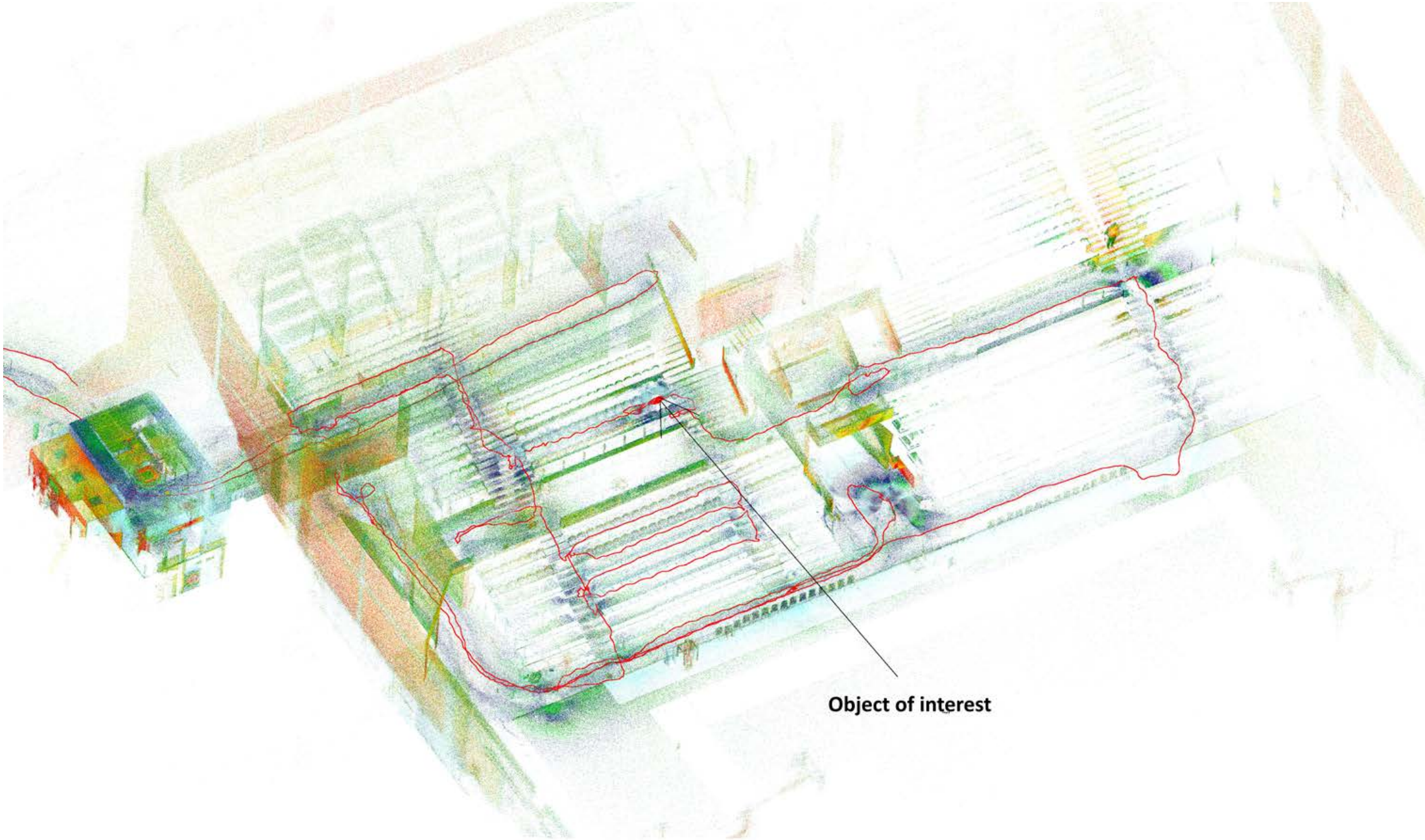

T.D - 08.08 JASKINIA ZIMNA

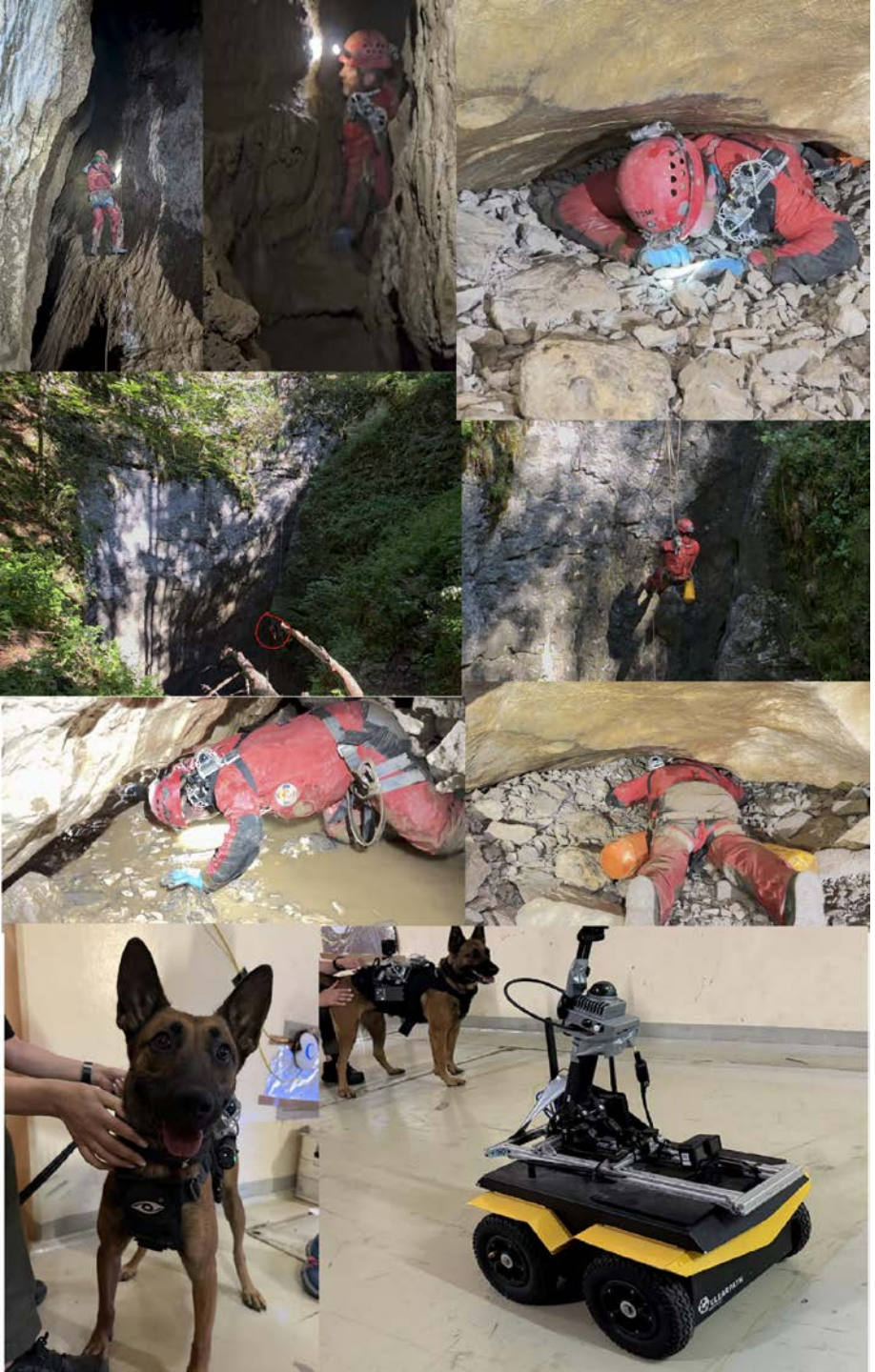

T.D - 08.08 JASKINIA ZIMNA


Arena Ostrów






Object of interest



github.com/MapsHD/HDMapping