# IAS-DX

Integrated Assessment System for Deep Excavations

**POLNORIS 2026**

International R&D Partner Search

Poland | Norway | Iceland | Liechtenstein

**3 YEARS**
Continuous independent research

**32 ASSETS**
14 rail | 4 road | 6 bridge | 8 building

**4 MODULES**
DOCC | SETTLE | OSCAR | MATCH

**36 MONTHS**
Proposed research programme

## IAS-DX engineering decision chain

**INPUT** Source data → **DOCC** Evidence and context → **SETTLE** Deformation analysis → **OSCAR** Structure response → **MATCH** Technical control → **OUTPUT** Risk-informed actions

## WHAT ALREADY EXISTS

- Established research framework developed independently over approximately three years.
- Engineering evidence from four construction projects; database of 32 infrastructure assets.
- Four complementary methods: DOCC, SETTLE, OSCAR and MATCH.
- Research publications (Zenodo) and 15 research/inventive entries in ORCID.
- Polish patent applications P.456717 and P.457093; related research programme MARLENA.
- Conference activity: HAROS 2026, Tunnel Turkey 2026, WDM 2026, ICSGE 2027 and RIC 2027.
- Paper accepted for the 20th Nordic Geotechnical Meeting, Oslo (NGM 2027).

## NEXT STAGE UNDER POLNORIS

- 36-month R&D; programme to develop a scientifically validated, operational IAS-DX application.
- Monitoring and sensor-data integration, 3D deformation analysis and numerical modelling.
- Structural vulnerability and reliability assessment, risk-informed monitoring and alerts.
- Independent international and field validation using real infrastructure cases.
- Digital application engineering, testing, demonstration and research dissemination.

## PROJECT LEAD

Magdalena Florczak, MSc Eng. - IAS-DX author and Scientific Lead. More than a decade of engineering experience (STRABAG, ARCHICOM, TRAKCJA); currently working at Port Polska (CPK) in railway and underground infrastructure. Registered in the European Commission Expert Database (EX2026D1551544).

## RESEARCH PARTNERS SOUGHT

Polish Project Promoter: eligible research institute or other qualifying research organisation for consortium coordination and substantive research.

Donor State Research Partner(s): organisation(s) from Norway, Iceland or Liechtenstein for geotechnical research, monitoring, numerical modelling, field validation and digital systems.

**Join the next stage of IAS-DX**

Planned Polish R&D partner: Irena Sendler Foundation | Seeking Project Promoter and Donor State partners

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