Implementing IRIS, a data management system for the Dutch waterboards

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Agenda

Waterschap Rivierenland

IRIS data management system

Data conversion using FME

CAD to GIS conversion example

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Water board Rivierenland

- The oldest form of democratic government (dates back to 13th century)
- Arise by natural circumstances, the need to organise.

- Today water boards:
- Public authorities with a predetermined, limited task related to water management

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Water board Rivierenland

201.000 ha
38 municipalities
950.000 inhabitants
1.070 km dikes
7.000 km water courses
39 wastewater treatment plants
538 km pressure pipelines
575 km roads
700 employees

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Water board Rivierenland

- Tasks:
  - Flood control
  - Water management (quantity and quality)
  - Wastewater treatment
  - Musk rats

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Iris datamanagement system

- History: two different systems, Intwis and GisZes.
- Iris is further development based on Intwis
- Scope IRIS on tasks flood control, watermanagement and wastewatertreatment
- Projectwise implementation at waterboard Rivierenland

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Iris datamanagement system

- Project
  - Workpackages: testing, configuration, training, communication and CONVERSION!
  - Workpackage conversion
    - Hired Erik Jan Bodewitz from Vicrea
    - Using FME
    - Sources

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Data conversion using FME

Reading formats:

ESRI Shape
ESRI file geodatabase
ESRI binary grid raster
Oracle Spartial object
Oracle Non Spatial
AutoCAD (DWG)
Excel spreadsheet

Access database
GeoTiff raster
Comma separated file
Lidar pointcloud (test)

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Data conversion using FME

Writing formats:

ESRI SDE geodatabase

Oracle Spartial object

Oracle Non Spatial

Oracle Georaster

ESRI shape (preprocessing and cleaning)

Tekst and CSV files (logging)

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Data conversion using FME

Transformation challenges:

- Format transformations
- Non Spatial → Spatial
- 2D data → 3D data and 4D data
- Geometry type conversions
- Matching dataset relations
- Data validation
- Georeferencing data (CAD to GIS)

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CAD to GIS example

Datasets:

- AutoCAD drawing (DWG): cross-section of dike
- ESRI file geodatabase: centerline of dike
- Excel spreadsheet: location intersection of cross-section and centerline (X and Y)

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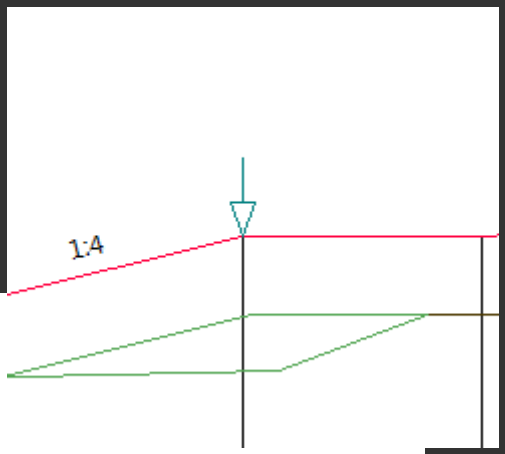
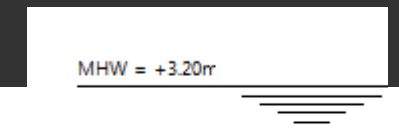
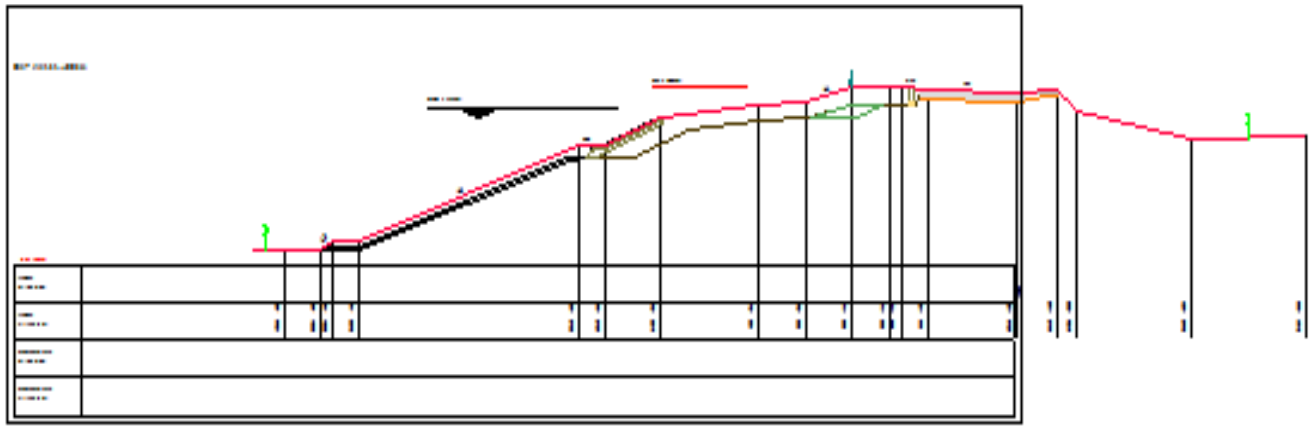
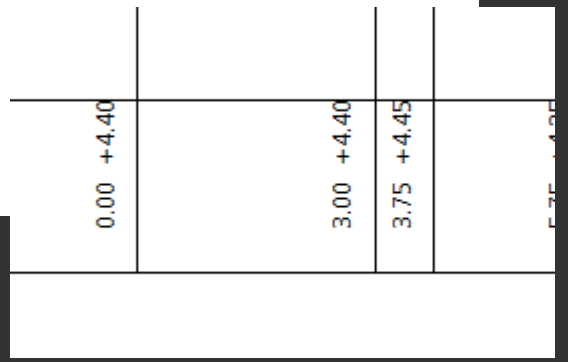
CAD to GIS example









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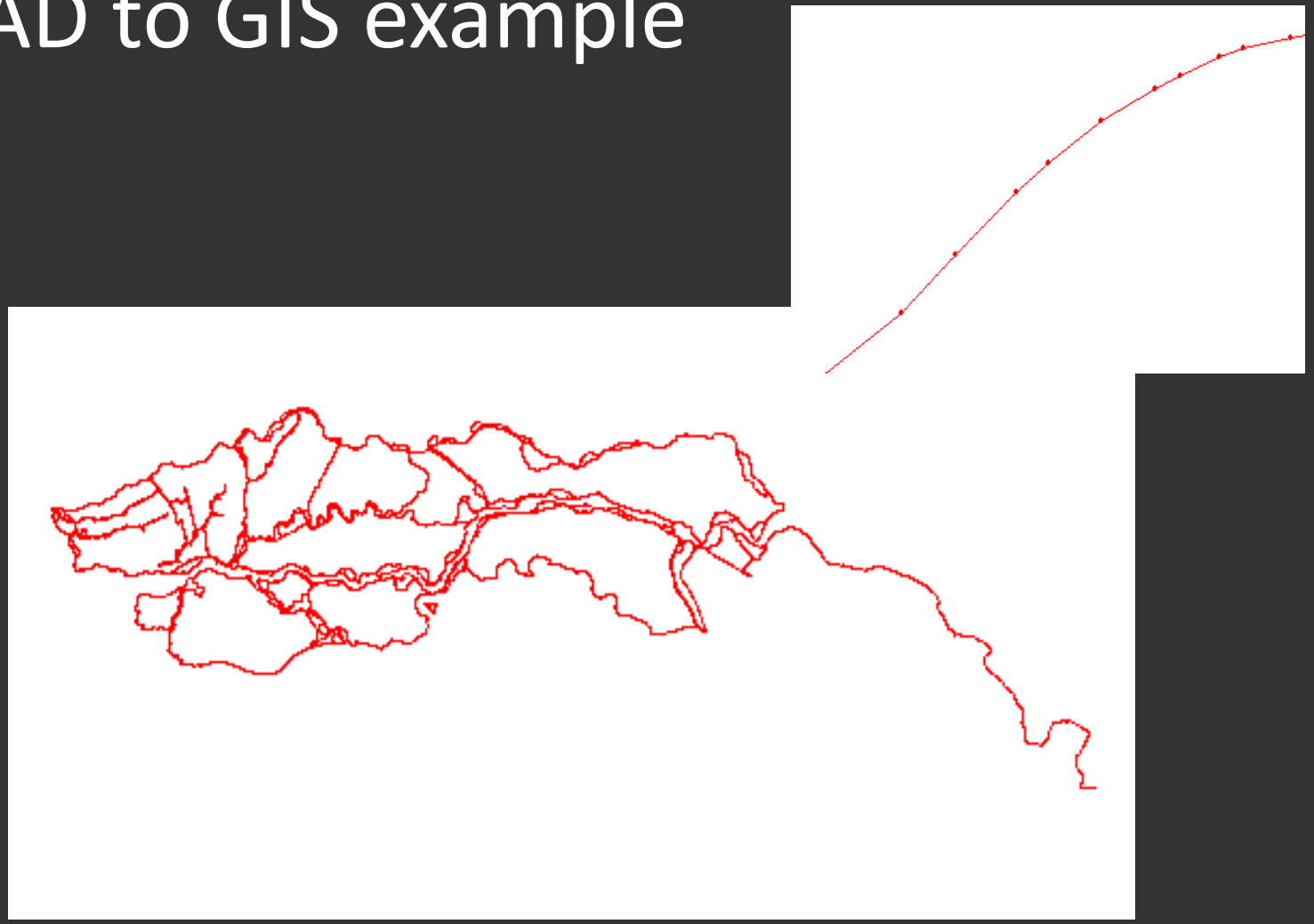
CAD to GIS example



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CAD to GIS example

Excel spreadsheet containing:

- Name of cross-section
- Name of dike
- X and Y of intersection

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CAD to GIS example

Transformation challenges:

- Reading over 2500 DWG files
- Georeferencing the cross-section (from L to X and Y)
- Reading the attributes from the drawing
- Validation and logging

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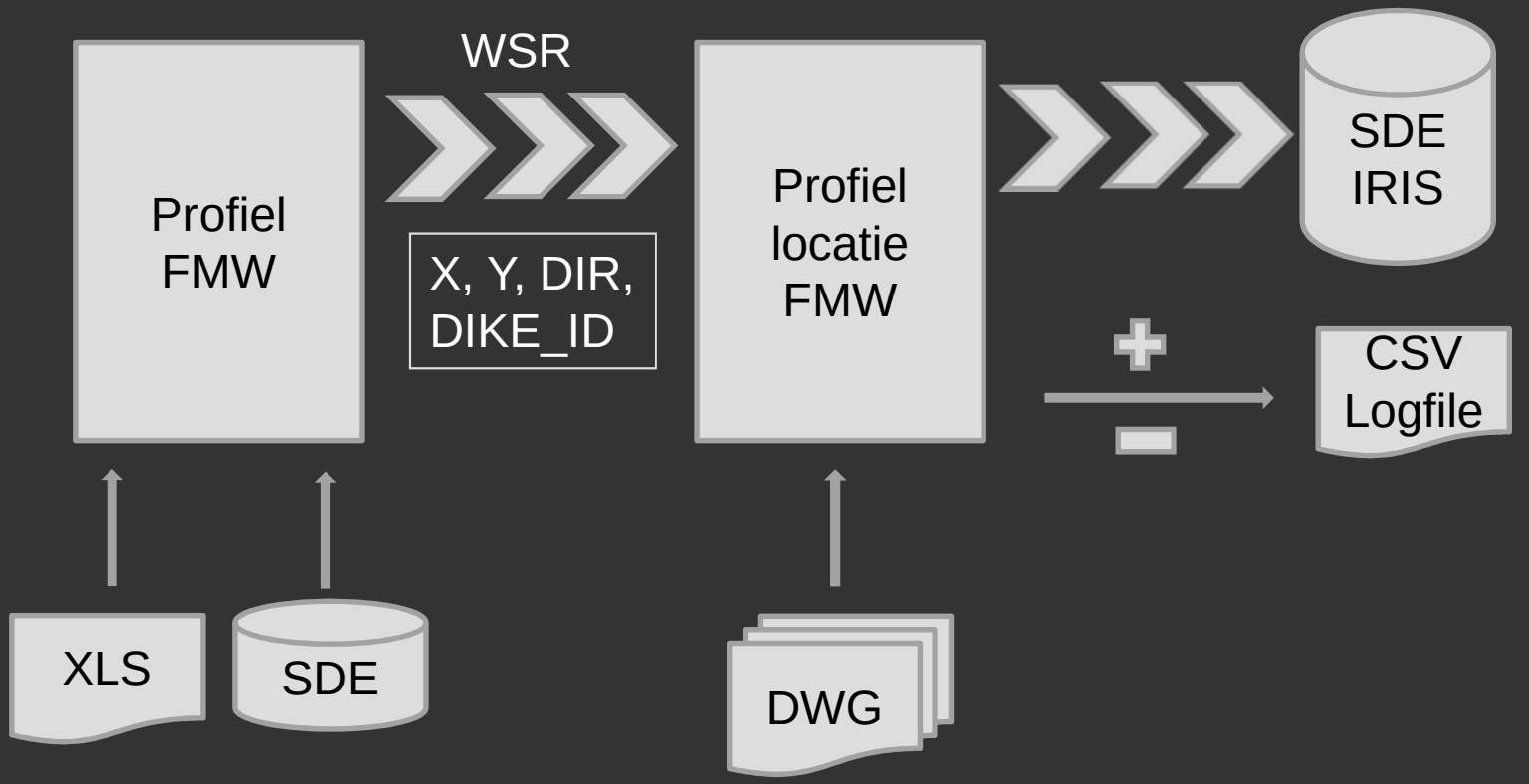
CAD to GIS example



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CAD to GIS example

Profiel.FMW:

- Read XLS and SDE:centerline
- Calculate Direction of profile
- Get Dike_id from database
- Start Profiellocatie.FMW with WorkSpaceRunner
- Log success (?) from WorkSpaceRunner

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CAD to GIS example

Profiellocatie.FMW:

- Read AutoCAD profile drawing
- Recalculate each point of line (X, Y, Z)
- Get attributes from tekst in drawing
- Store in IRIS database

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Thank You

Questions?

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