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Automatic Target Detection for 3D Ground-Penetrating Radar Data

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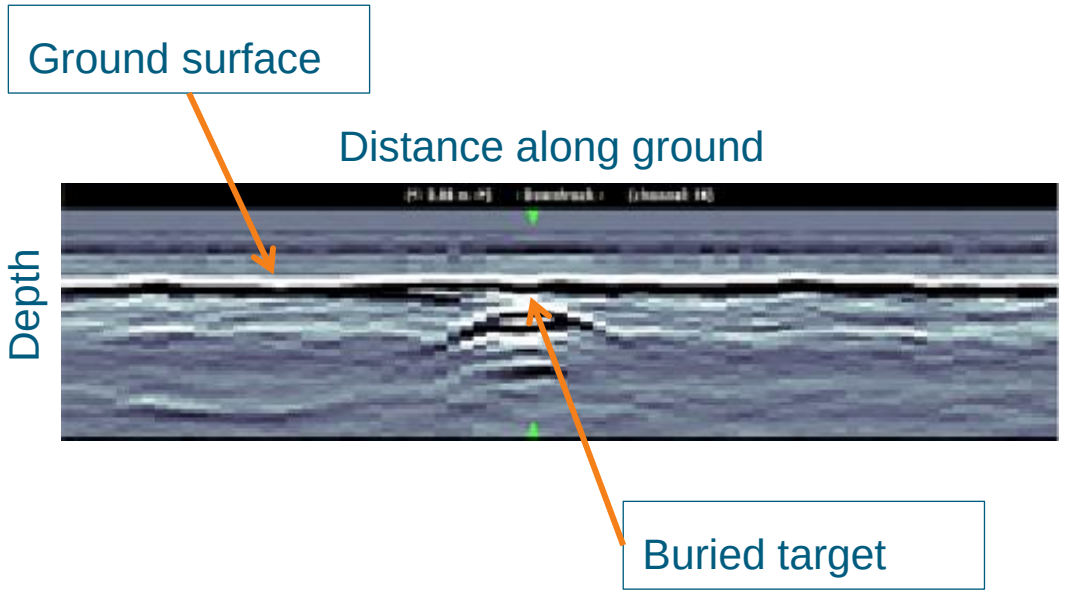
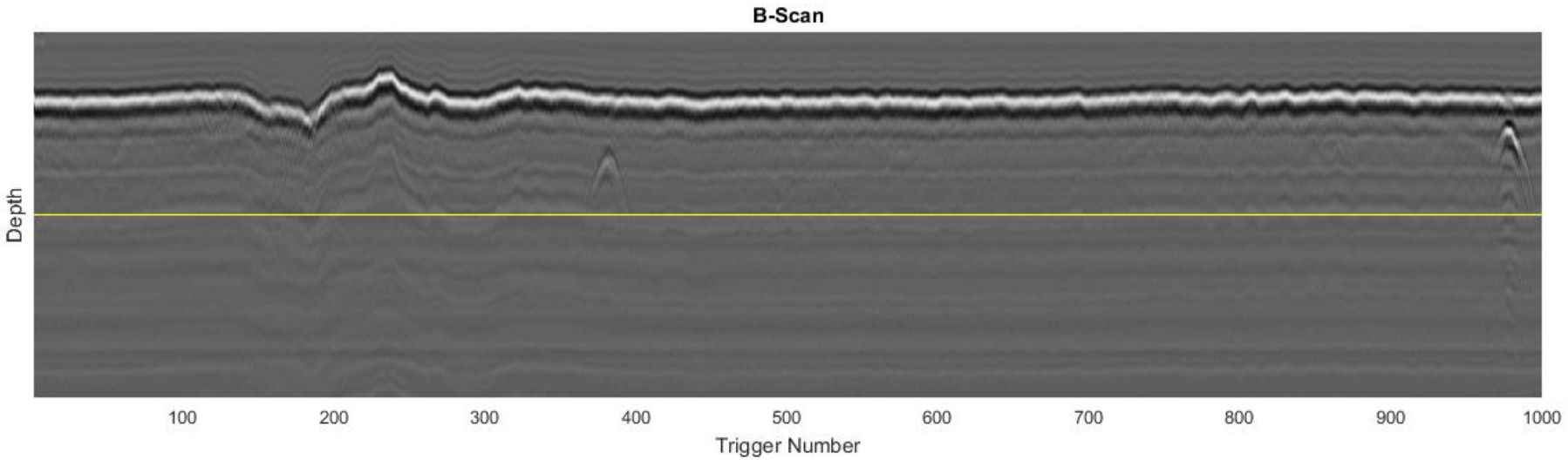
Ground-Penetrating Radar (GPR)



Vehicle Mounted GPR Array

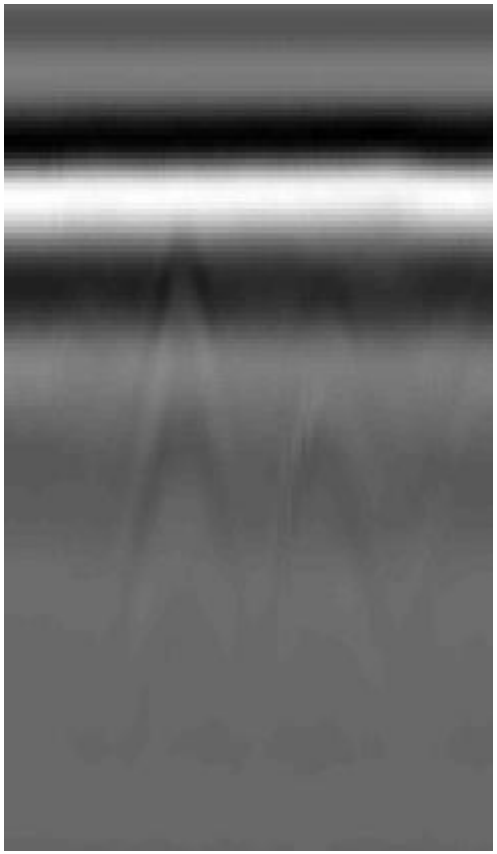
Problem

- Automatic detection and discrimination of targets



GPR Signal Features

- Amplitude
- Phase change
- Shape
- Background



Challenge

- Produce automated scheme to detect targets of interest
  - Objective
    - High probability of detection
    - Low false alarm rate
- Suitable for real-time operation
  - Using current and previous data
  - Sub-second output

Overview

- Dstl to provide
  - Vehicle mounted GPR array data (3D) collected over ground with buried targets
  - Target locations (ground truth)
  - Explanatory information
- UDRC develop detection/discrimination algorithms
- Dstl to evaluate algorithms on similar data

Timetable

- Data and explanatory notes provided
  - Please contact
    - Dr Nigel Davidson, ndavidson@dstl.gov.uk, 01980 951615
- Submission of algorithms
  - 31st March 2020
- Announcement and Prize
  - UDRC Meeting May 2020