

UniDAC made switching between database engines a breeze for the Derelict and Ownerless mines project



About the customer

The [\(D&O\) Mines Project](#) was funded by the Department of Mineral Resources (DMR). Generally the scope of the project entails the D&O mine database management and maintenance; Specialist studies on the D&O mines and closure of dangerous mine openings.

Country

South Africa

Product used

UniDAC

Arnoldus Francois Smit started to use UniDAC at the Council for Geoscience, Pretoria on the Derelict and Ownerless Mines Project using the non-spatial Firebird database engine. As part of this project, he had to create several ad-hoc applications to read an Oracle, SQL Server and an MS Access database to extract existing data for loading into the new FireBird database. [UniDAC](#) made this switching between database engines a breeze because he only had to select the appropriate UniDAC provider.

UniDAC proved to be an impressive data access solution in an application to process natural hazards data for a leading South African university. Data was generated using Monte Carlo simulations based on the location and patterns of historically observed data. Based on each record's latitude and longitude, appropriate formulas can then be applied in the calculation of associated vulnerabilities and risks. The design of the application is suitable risk calculations of geophysical, meteorological and hydrological natural hazards such as fire, floods, seismic hazards and risk. Industries that could potentially benefit from such an application is the insurance and reinsurance industries, disaster management agencies and civil and mining engineering companies.

The project required that spatial data be stored in a PostgreSQL database with PostGIS extensions. Using Delphi's Parallel Programming Library (PPL), a test run of the application read 1.92 billion spatial records at a tempo of 213.8 thousand records per second and processed 19 billion records in 4 hrs and 36 minutes. The processing was done on a desktop PC with a 4 core, 8 thread processor (Intel Core i7 3770).

UniDAC attracted the developer's attention because of these key points:

01

Ease of use

02

Access to multiple databases

03

High-speed data access

"UniDAC makes this switching between database engines a breeze because I only have to select the appropriate UniDAC provider."



Arnoldus Francois Smit
Freelance Software Developer

Results achieved

213,8K

records read per second

19 billion

rec. processed in 4h 36m

UniDAC helped to complete a seemingly impossible task of processing the volume of seismic data involved. The initial MATLAB program could process only the seismic data for one building in a run. The program that was built using parallel processing techniques and UniDAC drivers to interface with PostgreSQL, processed the seismic data of 18000 buildings in 4 hours, 36 minutes.

Key features Arnoldus Francois Smit is excited about

Effortless access to any popular database

The application developed using UniDAC components, can read Oracle, SQL Server and MS Access databases to extract existing data and load into the new FireBird database.

Better than any other Delphi data access solutions

UniDAC components are a complete replacement of any other Delphi data access tools, such as IBOjects, IBX, dbExpress and Borland Database Engine (BDE).

Exceptional read/write speed

A test run of the application read 1.92 billion spatial records at a tempo of 213.8 thousand records per second and processed 19 billion records in 4 hrs and 36 minutes.