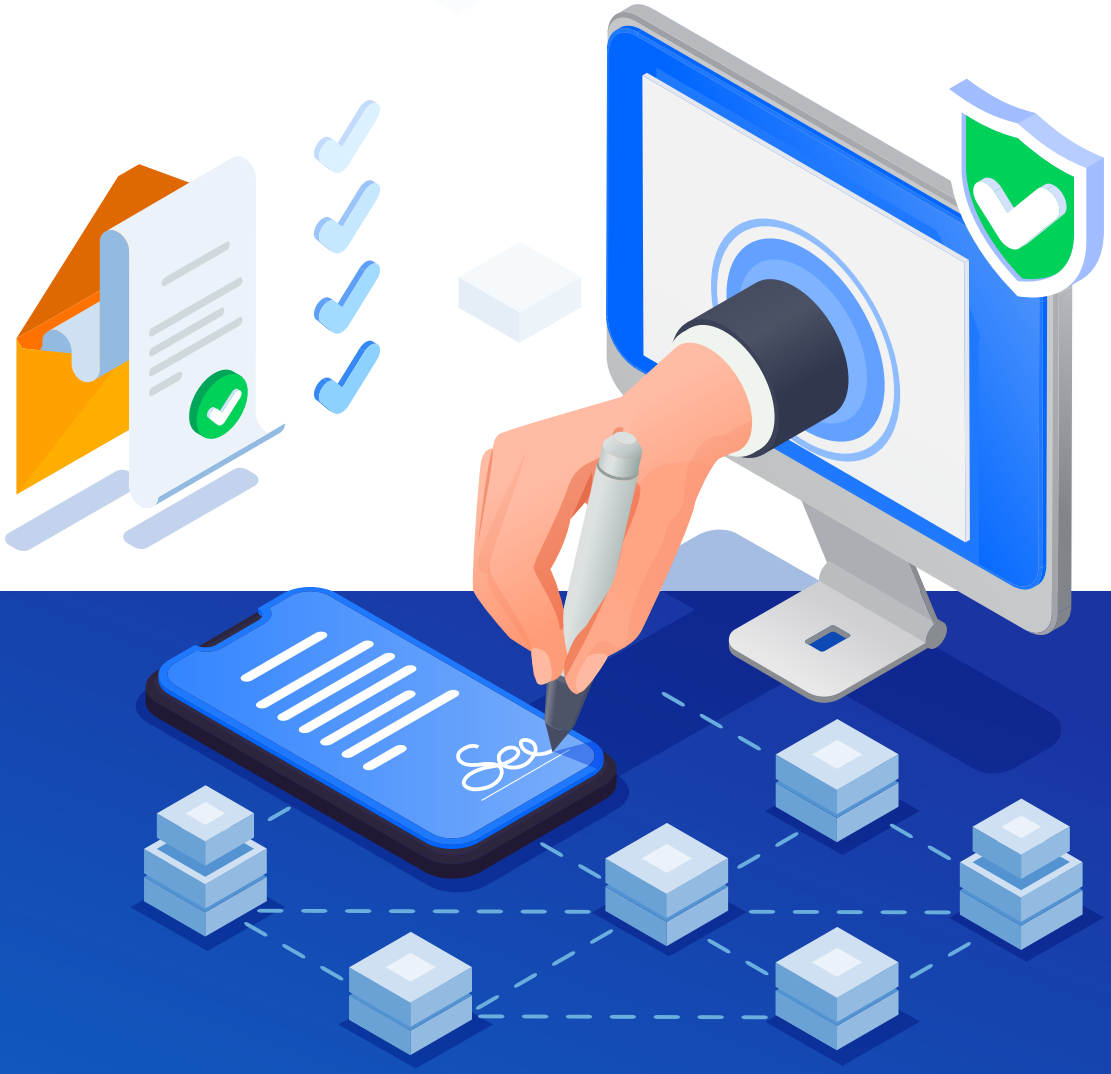
QBurst



Intellectual Property and License Management Application

An IP and license management application designed to collect, manage, and analyze data on vehicle parts, SEP technologies, and supplier contracts.

Overview

An intellectual property (IP) and license management application that proactively manages third-party rights and mitigates legal risks. It helps the client minimize license costs and reduce the risk of legal action in various markets.

Client Profile

Headquartered in Germany, our client is the research and development center for the world's largest manufacturer of premium and commercial vehicles. The center focuses on research, IT engineering, and product development.

Business Requirement

The client wanted to collect data of vehicles, parts and components, standard essential parts (SEP) technologies used, daily usage volume of parts, and suppliers for production plants.

They wanted to use this data to generate reports and create a consolidated view of licensing data, such as identifying the supply chain with the lowest license cost, obtaining discounts from license aggregators, and tracking licenses already paid for within the supply chain.

QBurst Solution

We developed an IP and license management system designed to collect, manage, and analyze vast amounts of data related to vehicle parts, SEP technologies, and supplier contracts. The system ensures optimized database performance and supports informed decision-making regarding licensing costs and compliance.

- SEP-related parts information is received as a CSV file from a proprietary system and imported into an Oracle database.
- Production plant, consumer, and forecasting data are imported from a proprietary MySQL database using an Oracle job every day.
- Information relating to vehicle parts and supplier contracts are imported from an in-house vehicle product management system through a highly-optimized multi-threaded GoLang job on a weekly basis.
- Data relating to vehicles, software and hardware parts, control units, and ECUs are collected from the primary data source which is the on-premise vehicle data warehouse.
- Relevant SEP data is regularly imported into the Oracle database through scheduled jobs, ensuring the information is up-to-date.

The system additionally collects information from another main data source which is the product development team. It enables the product engineers to update information about parts, components, SEP technologies, licenses, and supplier purchases to the system via an internal website. A separate website is provided for the suppliers to enter data and licenses related to their contracts.

Key Features or Highlights

Reports and Analysis

- The system generates various reports for product development engineers, SEP consultants, and business analysts. These reports include data on SEP-relevant parts, hardware and software used in vehicles, part-supplier information, components in parts, and ECU-related data.
- Data analysis is the core of the application along with license reports calculated using optimized Oracle queries and algorithms. Materialized views from the on-premise data warehouse are essential for these calculations.

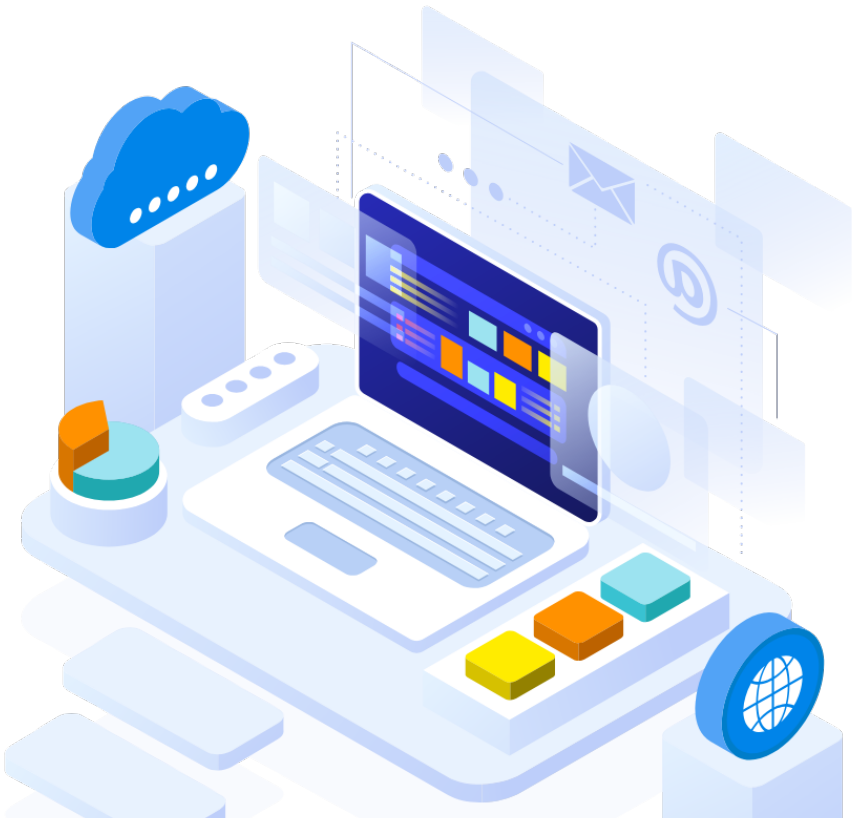
- The system uses dynamic query generation for different SEP-related reports, enabling data query and filtering based on specific needs.
  To handle high volumes of data, this is optimized by carefully designed queries backed by indices.

Data Privacy and Protection

The quantity of data handled is huge and the responsibility to protect data and privacy is also critical. The application is tagged confidential within the organization and data is stored on-premise on Oracle database. The application has a separate “anonymization” job that runs on a monthly basis to remove data of product engineers and other stakeholders who are no longer associated with the organization and “anonymize” the data related to them. This job will convert references to those users as “anonymous” users so that SEP-relevant data is still available after serving legal requirements.

Technologies Used

- Java
- Spring Boot
- Golang
- Oracle Procedure Scripts
- ReactJS
- Oracle Database
- Docker
- Azure DevOps
- Trivy
- SonarQube
- Black Duck
- Helm
- Selenium



Business Benefits

- **Comprehensive Live Reports:** The system helps evaluate detailed live reports for SEP-relevant parts, hardware, and software used in vehicles.
- **Supplier-Specific Insights:** Provides access to live reports on supplier-specific data, components used in parts, and ECU-related data.
- **Supply Chain Overview:** Offers a clear overview of SEP technologies used at the hardware, software, and vehicle levels across different supply chains.
- **Vehicle Category Analysis:** Helps to analyze SEP technology usage at the vehicle level and across various vehicle categories.
- **Accurate License Fee Calculation and Cost-Effective Supply Chain Selection:** The system enables the client to calculate license fees payable to owners of SEP technologies used in parts. Additionally, it helps them select supply chains for vehicle models with the lowest licensing costs.
- **Double Licensing Detection:** The system Identifies instances where licenses have already been paid for by suppliers.
- **License Discount Opportunities:** Generates reports for license aggregators to secure potential license discounts.
- **Dynamic Legal Reporting:** The system creates dynamic reports to address legal questions from license owners quickly and accurately.