

## Export Control Compliant Data Warehouse and Portal for Aircraft Engine Manufacturer

### Client Profile

A global leader in jet engine technology, this company specializes in the production of world class turbofan engines for the light business jet market. It operates as part of a multi-national joint venture consisting of several organizations.

### Business Challenge

The technical data related to the research, design, assembly and service of the engines consists of structured and non-structured data housed in multiple disparate systems, each subject to the export control laws of their respective country.

Much of the data related to the engines requires an export control license before it can be shared with or exported to any person or organization outside the country of origin.

Responding to requests from regulatory agencies, internal and external, was a complex and time consuming process consisting of multiple inter-company requests and associated access approvals.

A lack of data granularity in some systems prevented users from being aware that historical or technical data existed.

The client needed a way to centralize data from all partners to provide search, retrieval and reporting capability while also ensuring each member company remained in compliance with their respective export control policy.



The challenge in this architectural design was conditioned upon the export requirements and security restrictions based upon the end user's profile. In the event of high profile data, only specific users with a profile matching the approved license(s) were permitted to access that data.

### Business Solution

#### Key requirements

- Users must be able to discover basic metadata about all records that exist in the system even when not authorized to retrieve the actual record
- Must provide full text multi-language search of both structured and non-structured data
- Must provide each member company with the capability to load data into the data warehouse while maintaining compliance with their export control policy
- Must enforce data security at the database to ensure integrity of export controls regardless of client or tool used to access the database.

## Business Solution cont'd.

Radix Bay designed and developed solution architecture leveraging Oracle Database and Microsoft SharePoint Server technologies to provide a centralized data warehouse and a secure portal that met the client's requirements.

Oracle was chosen as the platform for the data warehouse because it had out of the box features to meet the majority of the requirements like Full Text Search, Fine Grained Security and the ability to integrate with the clients existing Active Directory service using Kerberos for the database authentication.

Oracle Virtual Private Database technology provided the ability to secure data down to the individual column or document level based on configurable export control policy rules and user profile data.

Oracle's PL/Sql programming interface allowed us to secure the application code using a similar rule based system.

Oracle Text provided an advanced high performance and feature rich search experience including relevance ranking, multiple search domains, thesaurus and multi-language support.

Microsoft SharePoint was a logical choice for the portal platform and was easily integrated with the Oracle backend to provide a rich user experience including enterprise search capability and purpose specific dashboards. Sql Server Reporting Services was used for the reporting capability.

## Benefits Delivered

- Joint-venture members can now tag data with export policy profile at the time the data is loaded into the data warehouse effectively granting or denying access in advance based on users detailed profile.
- Users are now able to rapidly locate and retrieve data regardless of source system.
- Users can find descriptive metadata about relevant records or documents even if they must be granted authorization before they can access the actual data.
- Client now has the ability to perform analysis and reporting on data across company boundaries, opening up new opportunities in areas of process improvement, quality control and improved customer experience.