# TRIPLE: Transforming RDF Interoperability with Solid Pods for Next Level Experience

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The Resource Description Framework (RDF) provides a powerful way to access data resources, but it is currently underexploited due to significant barriers limiting its use to a select few researchers. RDF’s knowledge graphs are generally not sufficiently described, making it very difficult to ascertain what to query and how to do so. In addition, execution times for complex queries are often very long and difficult to optimise. Finally, the query results are often difficult to integrate with private data. The TRIPLE project will address these challenges to bring existing and future RDF resources to a broader group of researchers by developing innovative solutions on four fronts. 1) We will store private (unpublished) data in Solid Pods, an emerging technology enabling decentralised private vaults to host private RDF endpoints, execute federated SPARQL queries and cache data and results. 2) We will optimise federated queries spanning public and private SPARQL endpoints allowing users to query multiple resources from within their Solid Pod. 3) We will adapt state-of-the-art RDF documentation tools and make them available for all SPARQL endpoints, including Solid Pods. 4) We will develop data model visualisation, sets of standardised federated queries, and advanced query analysis and evaluation tools to help new users understand the data sources and run efficient federated queries. Finally, a demonstrator will show the impact of these advances when applied to a technically challenging use case of scientific relevance: the search for suitable organisms for bioremediation.