

## Executive Summary

World Rugby faced the challenge how do secure and ensure GDPR, HIPAA compliance on AWS Cloud, and complete a Greenfields development project, with Microservices API, pseudonymized data lake and migrating existing data.

## Customer Challenges

World Rugby faced the challenges of a Greenfields build for the Head Injury Assessment (HIA) Protocol. The HIA allows doctors to submit Head Injury assessments and manage players through the Head Injury lifecycle from when the injury occurs to managing the player through the Graduated Return to Play lifecycle ensuring player welfare. World Rugby Research collects de-anonymized and pseudonymized data for ongoing research purposes to improve the quality of the HIA protocol and related services.

The primary challenges of HIPAA and GDPR compliance of medical data, head injury history being critical to players' ongoing careers. In addition the InfoSec team apply security and compliance at the Irish Covid Tracer App level. This means that migrating data, securing the application

## Why AWS

*Storing Global Athletes Medical Data, GDPR Compliance on AWS*

World Rugby recognize AWS as the world leader in providing GDPR and HIPAA compliance services. AWS provides security, scalability and the best partnership to World Rugby.

## Why Koan

Koan was selected by World Rugby through competitive bids, based on our comprehensive approach to security and compliance on the AWS platform.

This project is currently in the second iteration. Due for Completion June.

## About World Rugby



**World Rugby is the global Rugby Governing Body with over 500 staff, the CMO and Medical Teams oversee the World Cup and Rugby both at the Elite and Club level. The goal of the organization is to increase Player Welfare.**

## Partner Solution

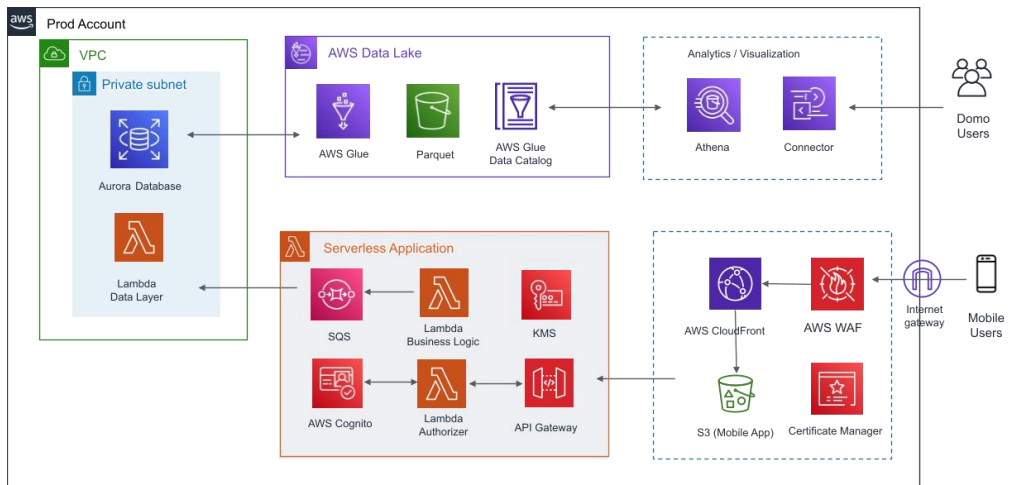
The APN partner solution goal was to implement an infrastructure solution that addresses World Rugby's implementation goals, security, compliance by using cloud-native development approaches and best-of-breed practice, frameworks and methodology

The APN partner solution involves multiple teams, building microservices API, authentication store, data stores, data lake using repeatable Infrastructure as Code. API Endpoints are fronted with API Gateway, and microservices become lambda workloads. Migrating existing data is performed through a separated AWS account, using AWS Glue jobs.

Additional streams include full stack development for an Administration Portal and Mobile Application.

## Architecture

Microservice tenets are to package lightweight containers, that center around APIs for interaction and collaboration, designed as loosely coupled microservices. Architected with a clear separation of stateless and stateful services. Services are deployed on self-service, elastic, cloud infrastructure and managed through agile DevOps processes and policy-driven resource allocation.



AWS Cognito is used to manage separated authentication, and Cognito Pools to enforce Access Control Layer (ACL), ensuring data security. Serverless architecture is used for the microservices API, with an Lambda authorizer.

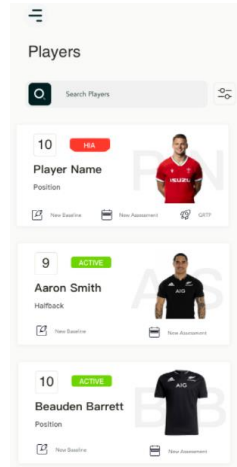
## GDPR and HIPAA Compliance

Koan have written the Data Production Impact Assessment (DPIA) and are working through the DPO process with World Rugby. Our microservices and data lake approach has already passed Security Audit from World Rugby Security Advisors.

## Results and Benefits

World Rugby has been enabled to undertake a large scale project that will bring HIA systems under World Rugby ownership, and partner with Koan Limited to build, manage, secure, and review ongoing compliance the set of applications.

## Outcomes



- The backend goals of data security, data lake and research users BI tools are being used - Pseudonymized data is provided for research
- Systems use Cognito Auth, and Microservices API, on Serverless APIs and Database
- Data Migration and GDPR Data Lake are completed
- Mobile application and admin portals are live and were used in the Women's World Cup 2022, and will be used in Men's World Cup later this year

## Next Steps

Koan have delivered streams on behalf of World Rugby including cloud native applications, infrastructure deployment, data migration, front end and GDPR compliant Data Lake. There are 25,000 active players in the system, and over 1,000 doctors using the application in global Rugby.

Koan and World Rugby will continue to collaborate on the AWS Cloud Native greenfields journey, and migrating World Rugby data into secure, GDPR and HIPAA compliant environments.

Koan and World Rugby are collaborating on a "Brain Health" project that will implement the FHIR protocol. This will be used by Health Practitioners globally to manage players post professional rugby, to review and neurocognitive functions.

## About Koan

Koan is an AWS and software development consultancy based in Wellington and Palmerston North. Koan has been building and deploying secure, compliant, enterprise applications for Global and New Zealand customers for 20 years. Koan is an AWS Advanced Tier Partner providing AWS Certified resources for DevSecOps AWS Migrations, Modernizations, Data Analytics.

