CERVUS

HIVE 2.5

Rapid, actionable analytics from training & experimentation in Live, Virtual, and Constructive environments

WHAT IS HIVE

Hive is a secure and portable end to end data analytics platform which can be run in classified on-premise or cloud environments. Hive does this by:

- **EXTRACTING** data concurrently from large scale **Live, Virtual and Constructive** military training simulations through DIS, HLA, VCCI or custom integrations.
- **Cleaning** and **TRANSFORMING** data into a standard data structure and stored for optimum query performance.
- Providing actionable real-time **INSIGHTS** through an extensive metrics library using NATO functional task breakdowns. Exercise data can be viewed through multiple lenses including organisational, aggregate, time series or geospatial.

E: info@cervus.ai
W: www.cervus.ai
T: +44 117 457 2250

WHY CHOOSE HIVE

Hive is currently being used in training and experimentation projects supporting UKMOD (British Army, RAF), NLMOD (Royal Netherlands Army), and Austrian Bundesheer to measure and evaluate Live, Virtual, and Constructive training and experimentation.

Hive ingests data from a wide variety of sources including VR Forces, JTLS Go, VBS4, Steelbeasts, as well as live simulation systems (TES).

NEW IN HIVE 2.5

- New common data schema.
- Enhanced data streaming- enabling multiple streams to be processed concurrently.
- Improved REST API.
- DIS V7 support.
- HLA ingestion.
- UI/UX enhancements inc. drag and drop widgets for dashboard tailoring.

Case Study

Virtual Reality in Land Training – Exploring Training Measurement and Evaluation with the British Army

Building a prototype analytics capability for Army Collective Training

Between 2019 and 2022, the British Army awarded contracts to Bohemia Interactive Simulations (BISim), QinetiQ Training & Simulation, and Cervus, to demonstrate the art of the possible using virtual reality, the latest VBS release (VBS4), machine learning , cloud computing, and advanced analytics for the Army's Collective Training Transformation Programme (CTTP).

Problem

There is recognition that the Army needs to better instrument collective training to capture, analyse and provide better feedback faster. The employment of Hive in VRLT begins to evaluate novel TME data capture and analysis tools and in turn, inform the emerging CONEMP. The Defence Innovation Unit funded the VRLT Pilot as part of efforts to disrupt traditional acquisition systems. Army HQ staff worked directly with industry partners to integrate in service technologies (i.e. Defence Virtual Simulation (DVS)/VBS4) with Commercial off the Shelf (COTS) and innovative products. The resulting systems were then put into the hands of the user.

Approach

A process of spiral development was employed by Cervus to stimulate the innovation process. A baseline Virtual Reality (VR) system was developed which enabled the participants to be trained and process/technical derisking to occur. In the following sprints, we developed and honed Training Measurement & Evaluation (TME) delivery and explored a variety of innovations, building off the Hive platform.

Hive enabled the demonstration of:

Metrics and Data Collection

- A suite of performance metrics which were derived from the existing Collective Competency Objectives to provide a logical 'golden thread' between training objectives and analytical outputs.
- Use of new and emerging performance measures to assess the development of collective knowledge skills and attitudes (KSA).
- Integrated data from novel collection and analysis systems into the overall KSA collection schema to develop more objective and non-intrusive measures to report on team performance.
- The integration of Hive to DVS via a DIS interface.
- Developed specific DVS Applied Programming Interfaces (APIs)

Data Storage and Analysis

- Loaded all the data onto cloud storage (to replicate G-Cloud) and then hosted our analytics engine to automate analysis.
- Hive's ability to conduct Tactical Communications Information Flow Analysis – experimenting with automated voice to text transcription and Machine Learning to codify communications activities and exchanges.
- "Ghosting techniques" which are prevalent in sports team analytics. We did this to investigate the use of constructive models to produce simulated outcomes against which training audience performance can be compared, given the same plan and terrain.

Reporting

- Developed Functions in Combat and KSA dashboards to support the development of new After-Action Review processes

CERVUS