

EPTS Performance Test Report

January 16th, 2020

Catapult Vector (LPS)

This report details the performance test carried out in accordance with the test protocol for Electronic & Performance Tracking Systems

Product details

Manufacturer	Catapult
Product Name	Vector
Serial number	
Firmware version	
EPTS Type	LPS

Test details

Date	10th October 2019
Location	Camp Nou, Barcelona
Submission deadline met	1 hour post testing
Number of antennas (LPS)	24
Certification Expiry Date	23-01-2022

Fulfilment of test requirements

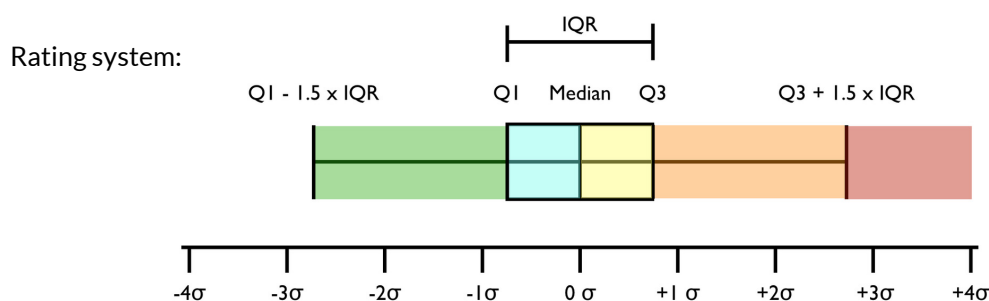
Test block	Capture & Submission
Circuit	√
2 v 2 Game	√
5 v 5 Game	√
Sprints	√
Full Pitch Coverage	√

Data processing

Process	Comments
Data export	No issues with file format provided for each player
Time stamp	Consistent 10 Hz format provided.
File matching	Files matched using cross-correlation method. Files required separate synchronisation for velocity and position,

Analysis interpretation

Measure	Definition
Root mean square difference (RMSD)	A commonly used measure of accuracy based on the sample standard deviation (σ) of the differences between the manufacturer and Vicon system. A large sample of RMSD values from GPS, LPS & Optical manufacturers comparisons were used to set the ranking criteria.
Data points	Varies depending on the quality of Vicon capture, as only the highest quality data is used for compared with Vicon comparative purposes.



Legend:

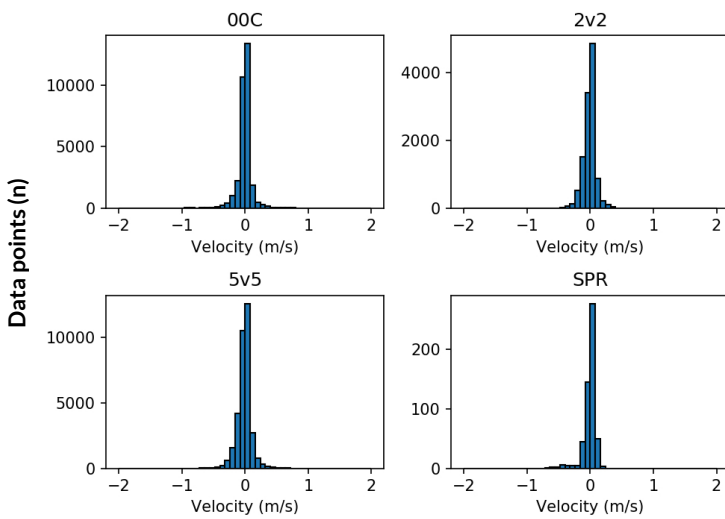
- Well-above industry standard
- Above industry standard
- At industry standard
- Below industry standard
- Well-below industry standard

Rating by FIFA Velocity Band

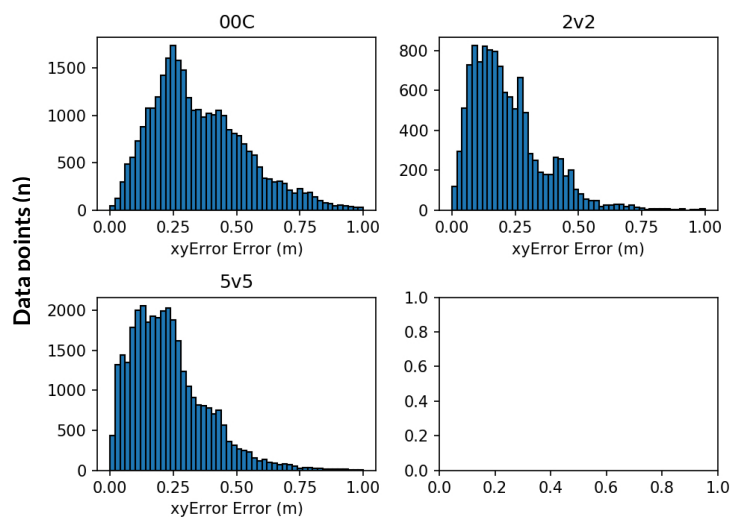
	0-7 km/h	7-15 km/h	15-20 km/h	20-25 km/h	25+ km/h
Velocity RMSD (m/s)					
Position RMSD (m)					

Legend	Well-above	Above	Standard	Below	Well-below

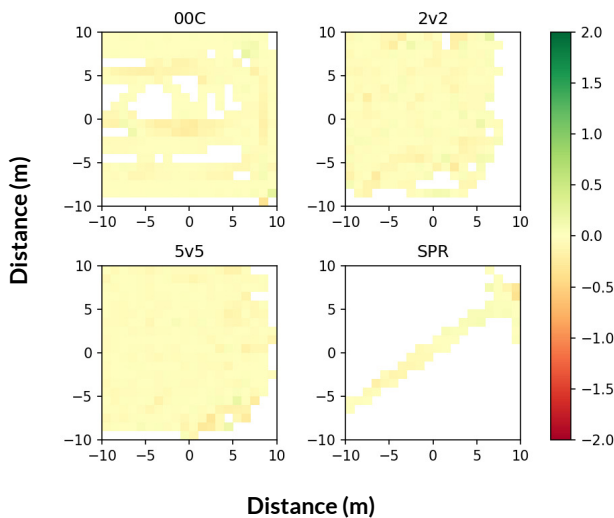
Histogram of Velocity Differences (m/s)



Histogram of Position Differences (m)



Mean velocity difference to Vicon (m/s)



Mean position difference to Vicon (m)

