

Oh no you don't!
How the ITF protects the
integrity of tennis

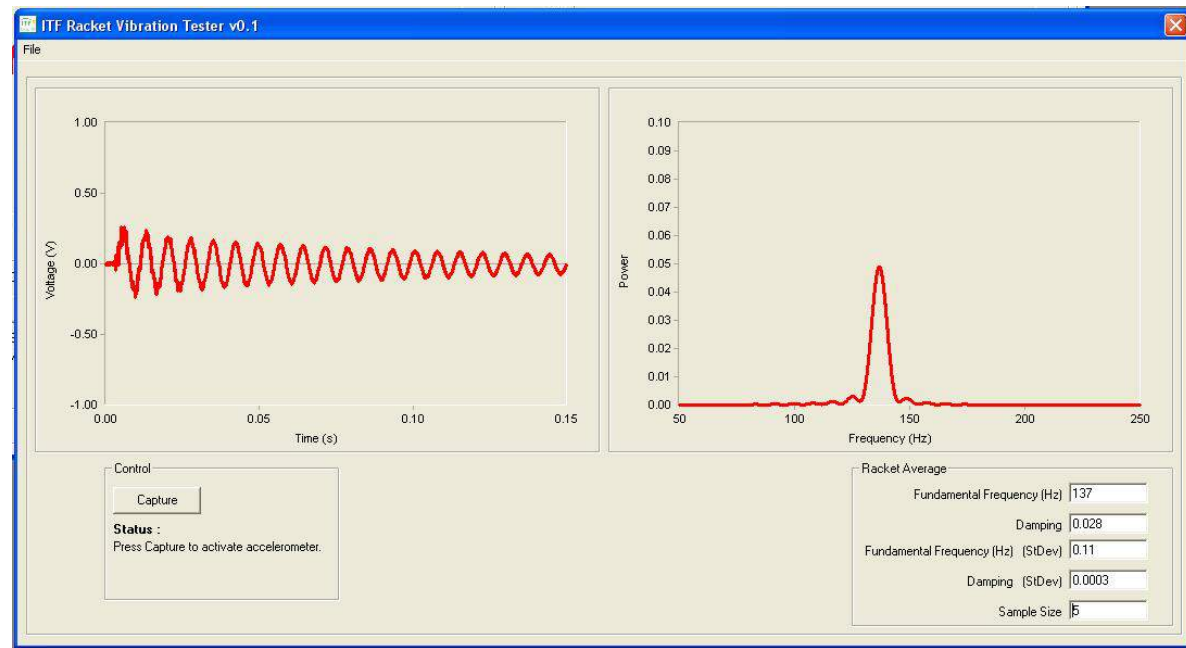
TIA UK meeting

16 March 2015

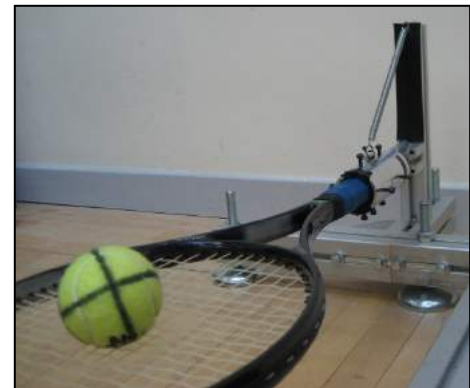
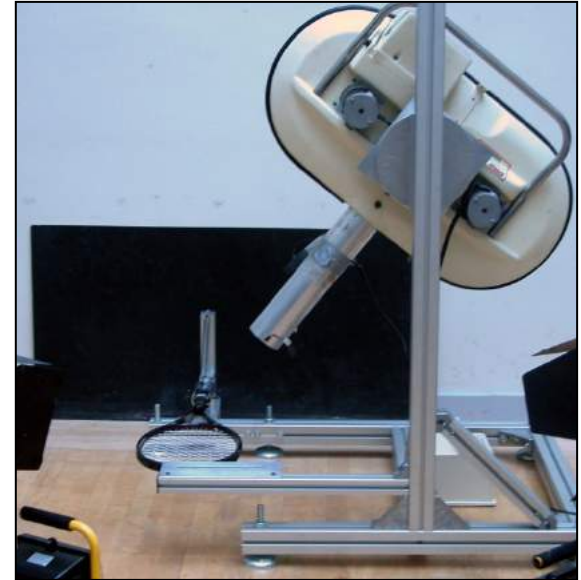
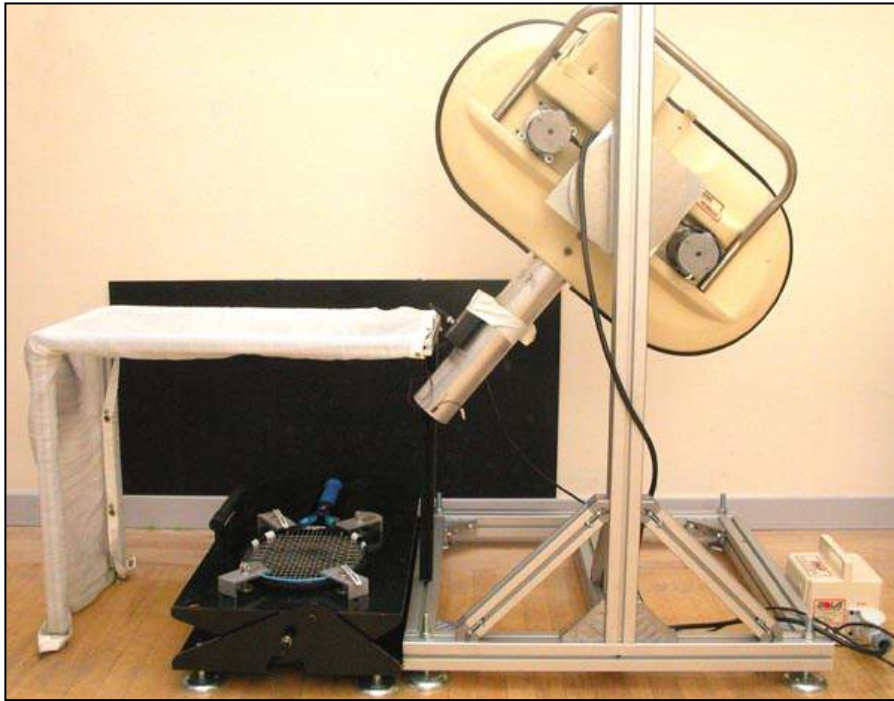
Rackets



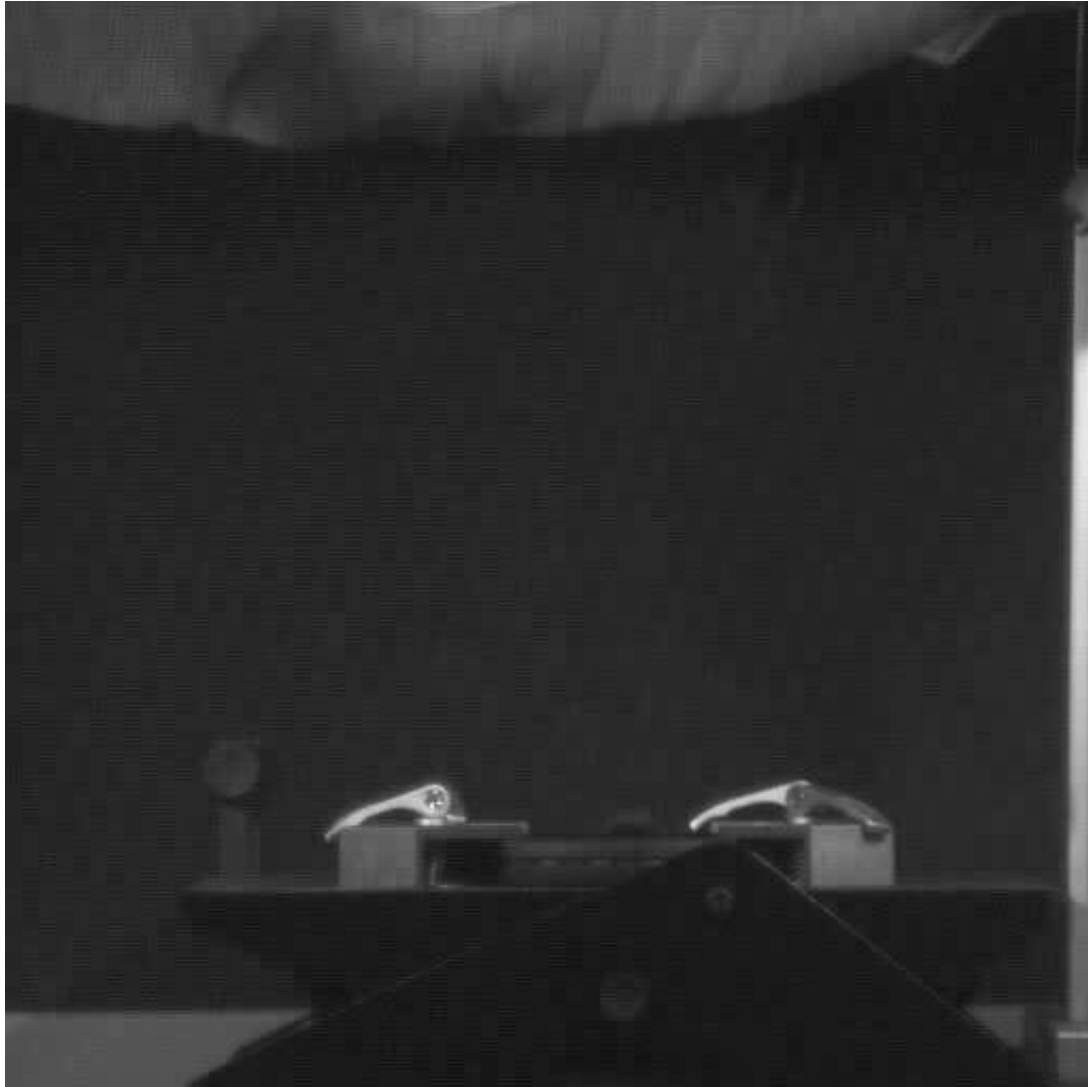
Racket power and vibration



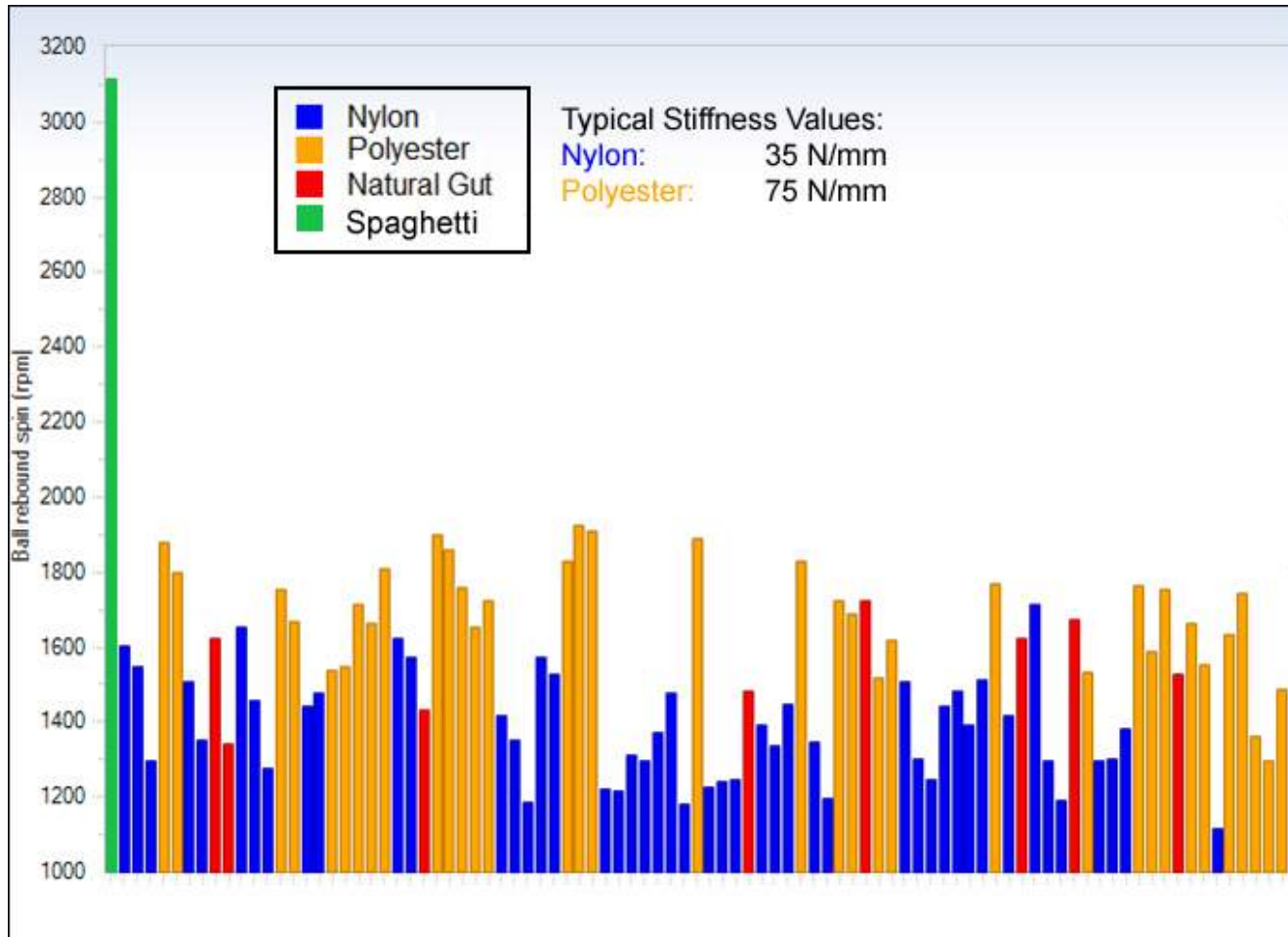
Racket spin and control



Spin



Spin and string type



Spin – the facts!



Spin – the facts!



Player analysis



Player analysis

Analysis



frame -305

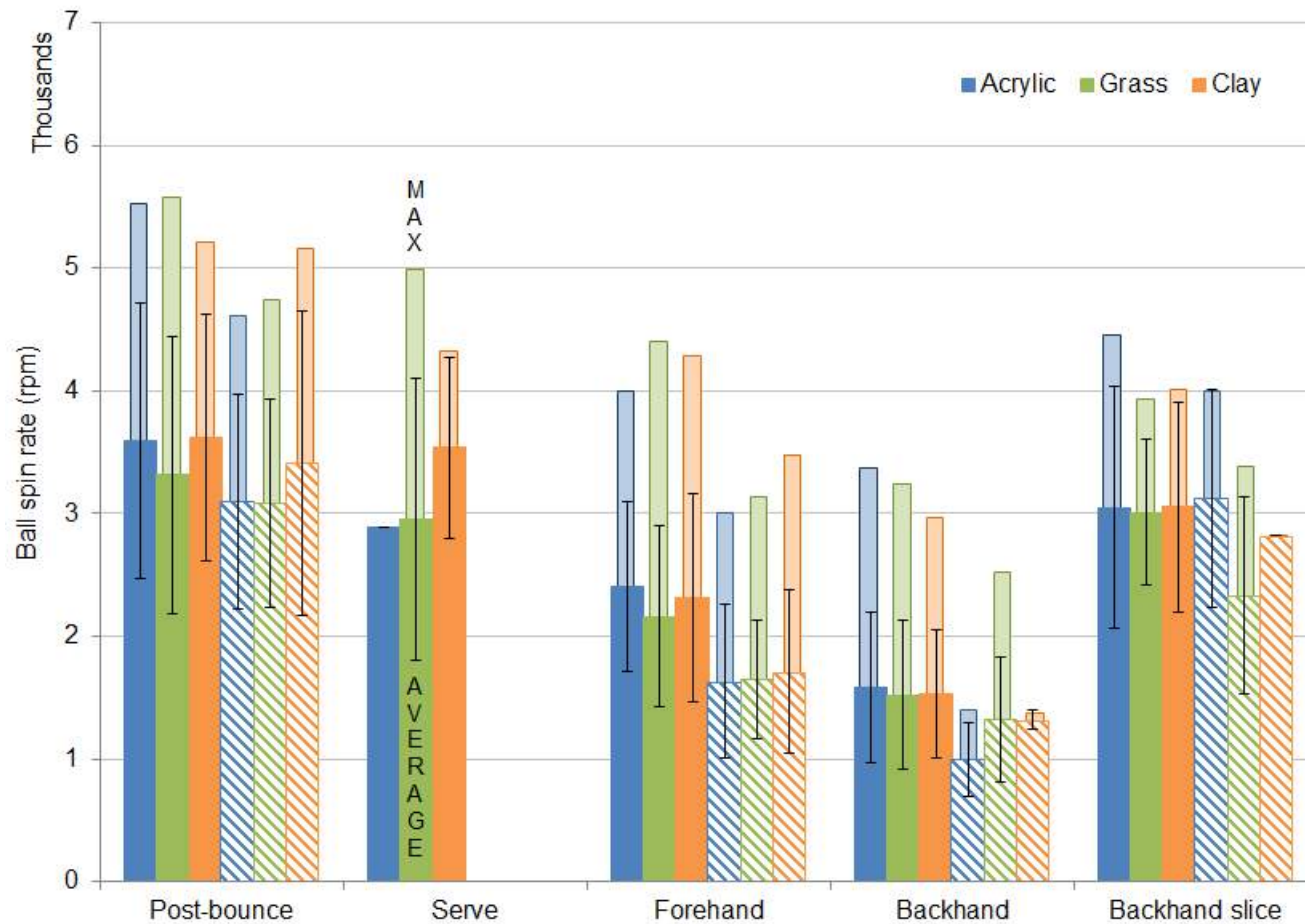
Status

Displaying results.
Calibrated and ready

Results

Speed = 22.6 m/s (50.6 mph)
Spin = 30 rev/s (1780 RPM)

'Real' spin data

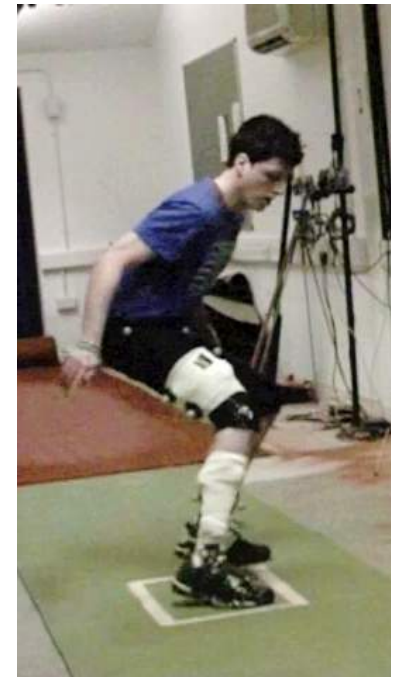


Surfaces



Shoe-surface interaction

- Foot fixed; braking achieved using knee flexion

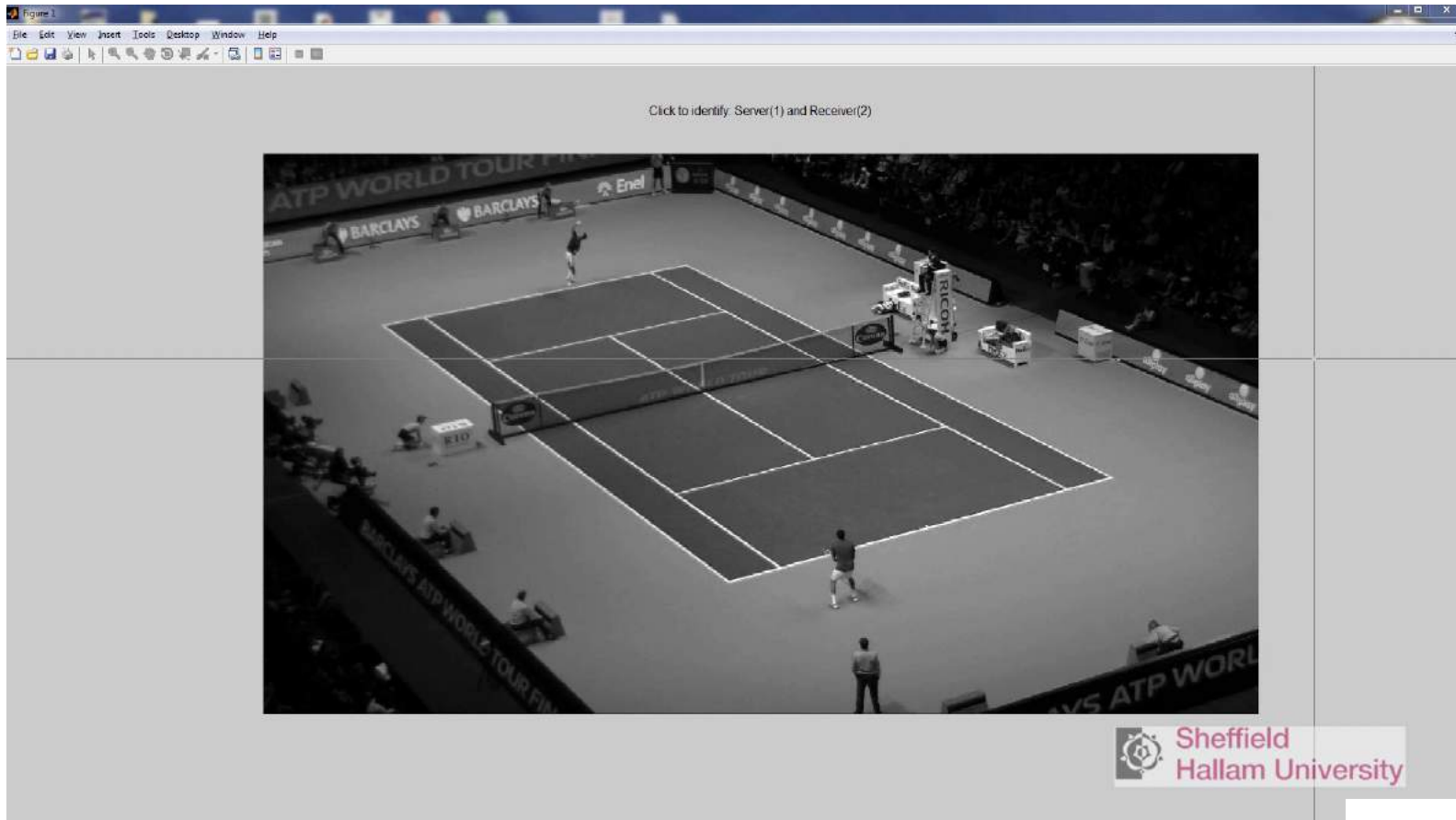


Shoe-surface interaction

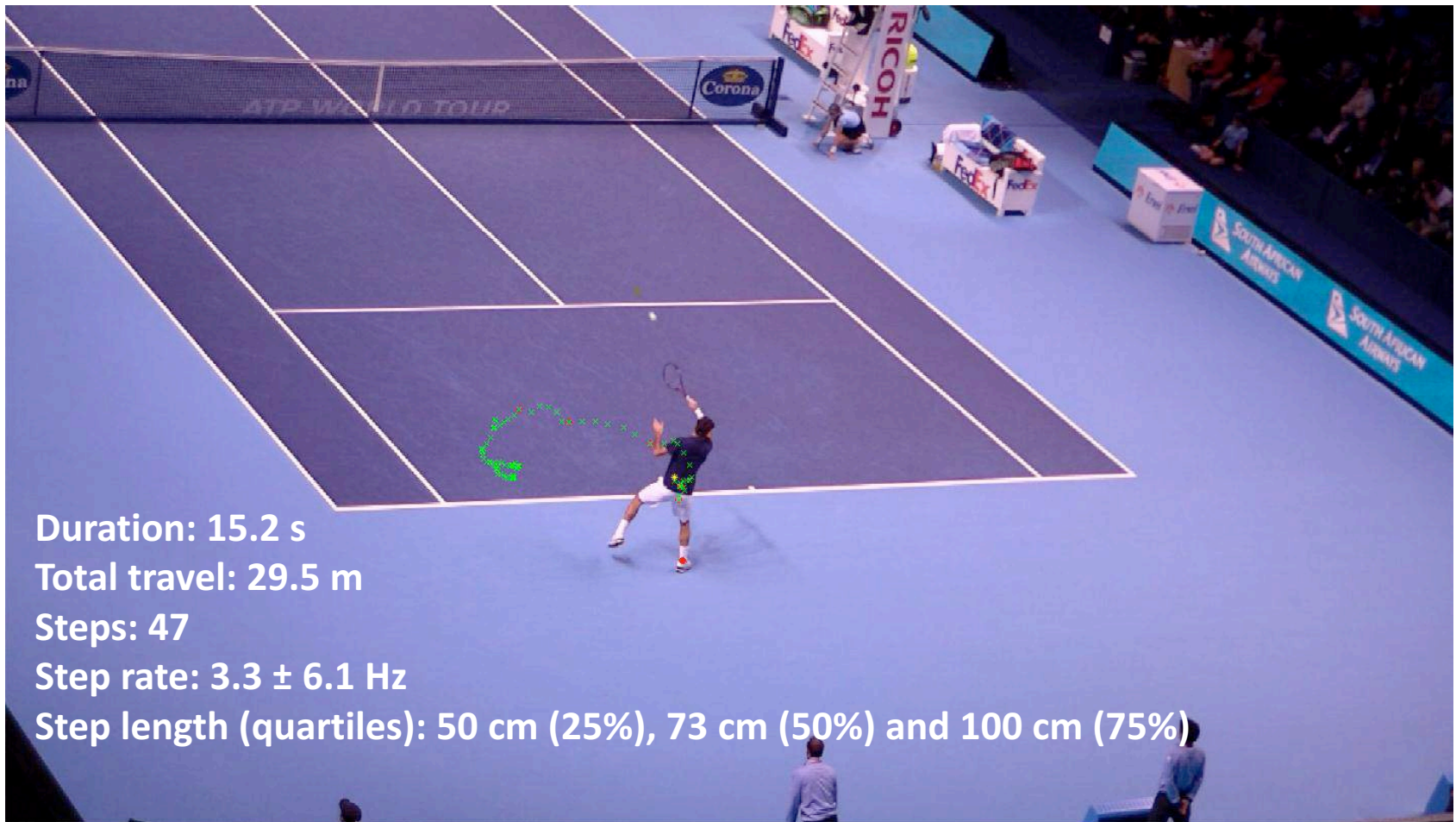
- Foot slides to achieve braking; less knee flexion



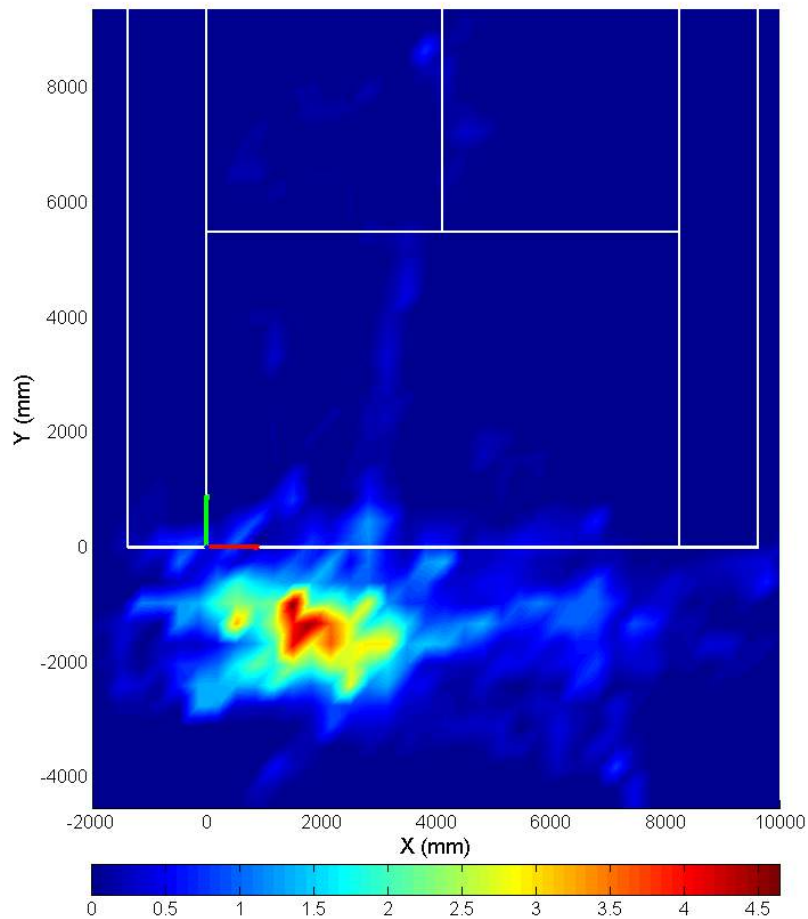
Rally Track



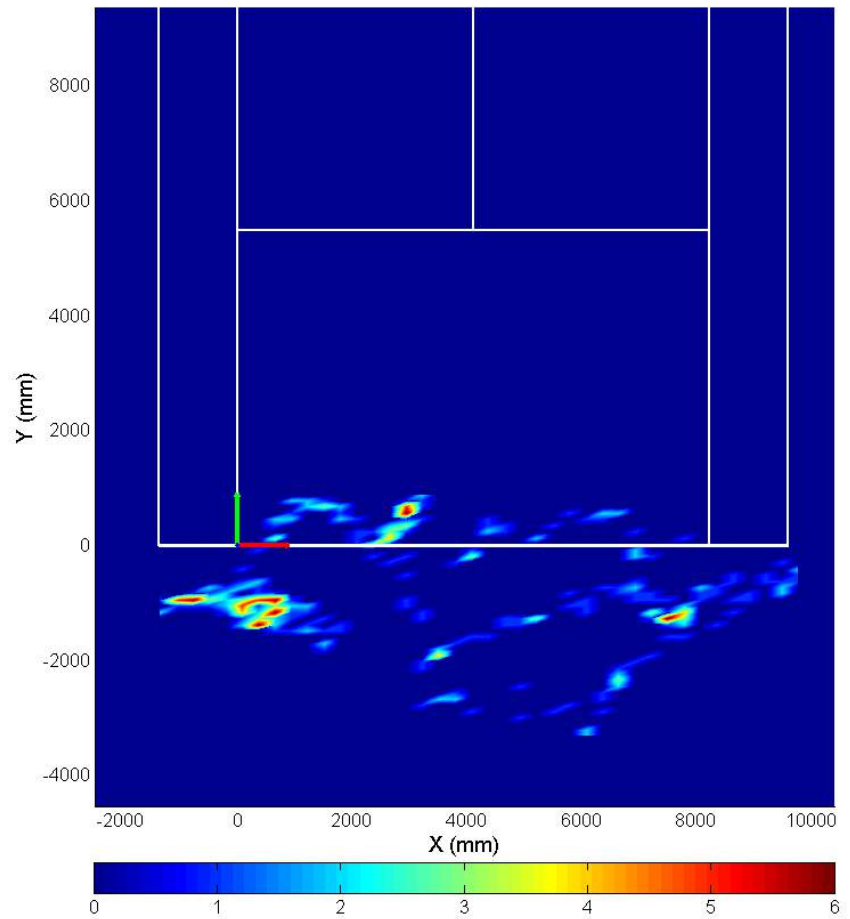
Point analysis



Occupancy maps



Time (seconds)

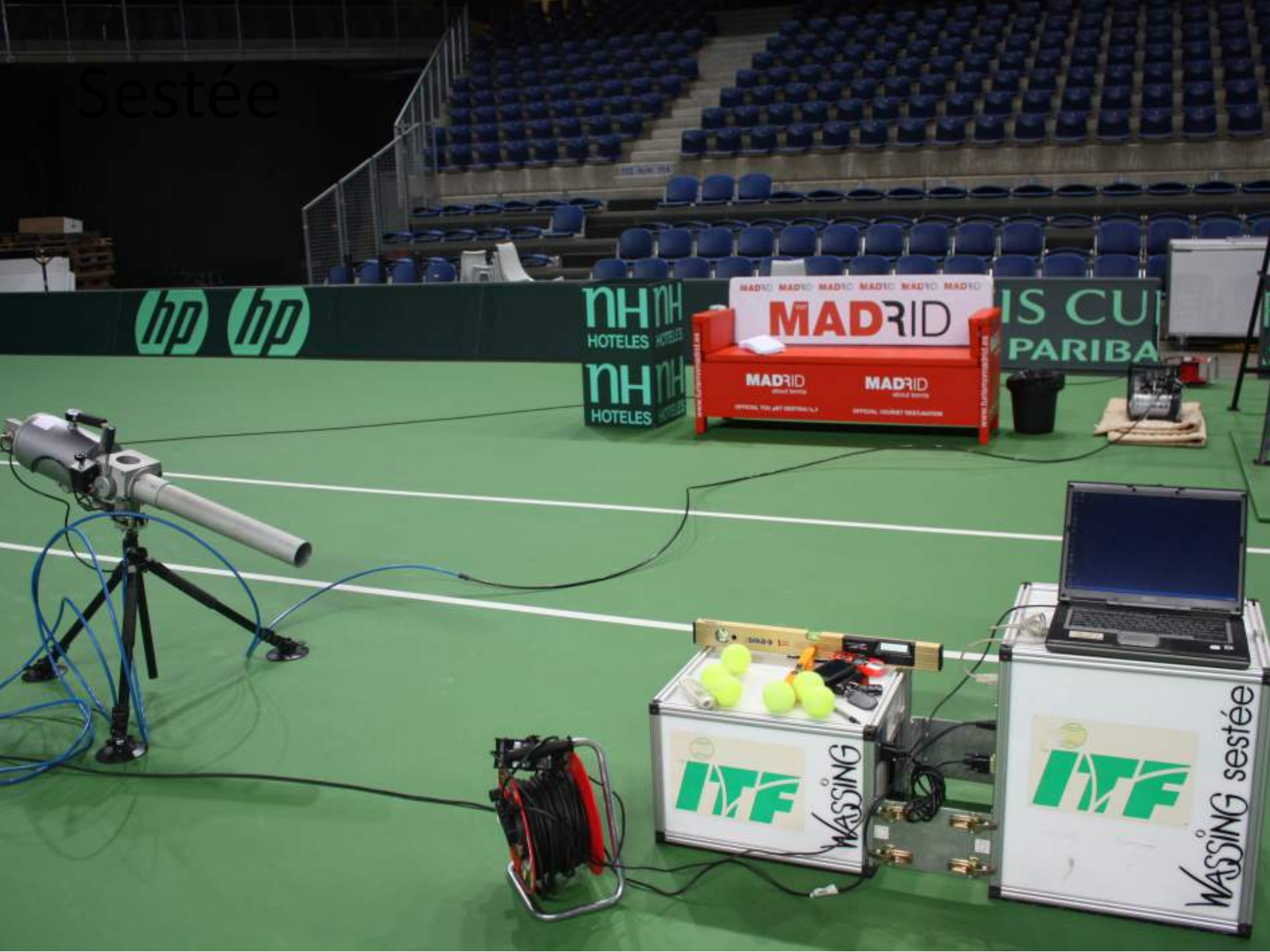


Step length (m)

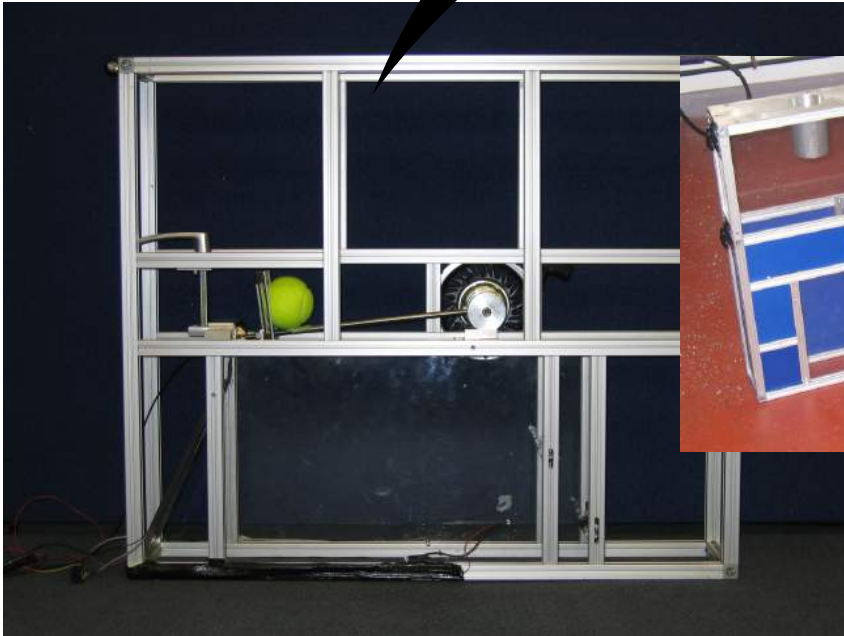
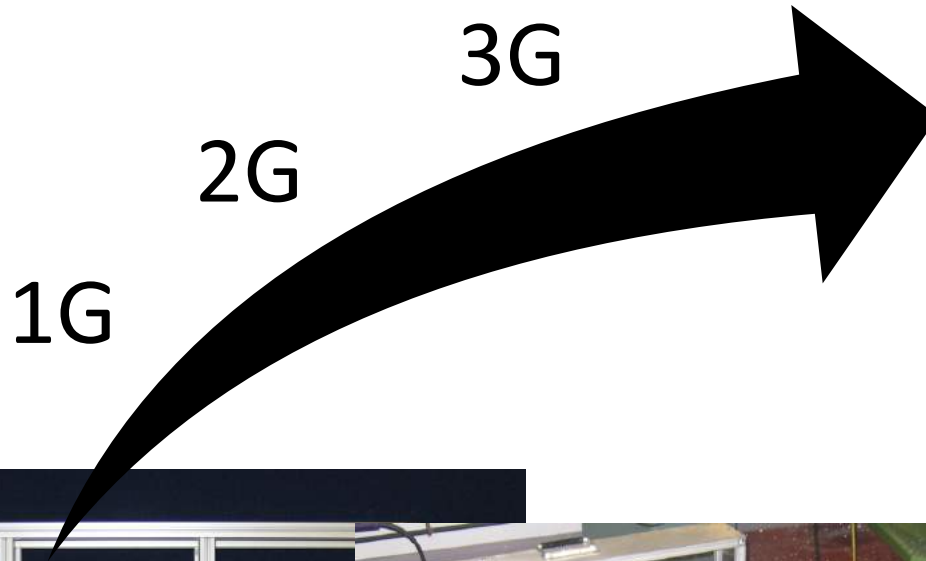
Court Pace Rating



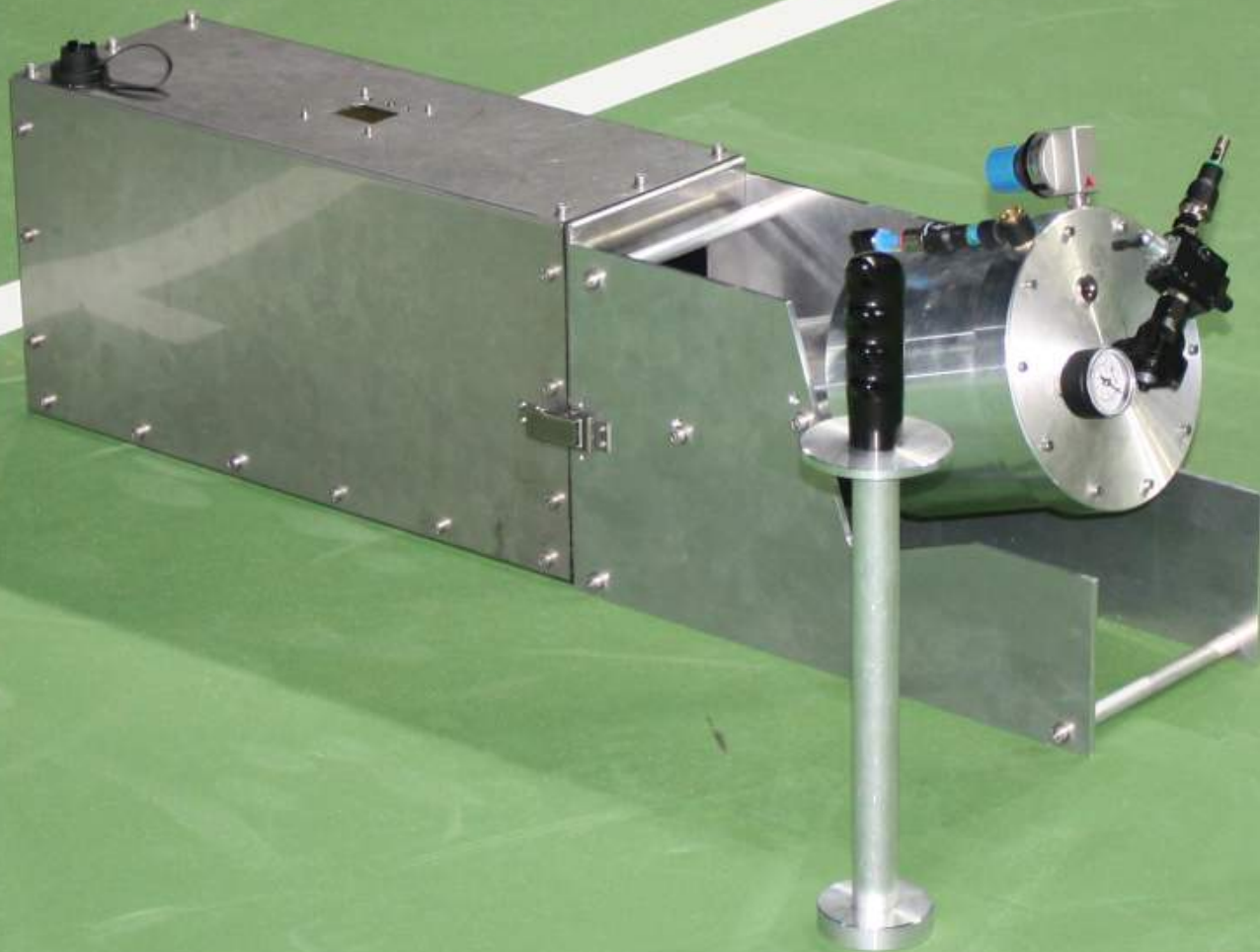
Sestée



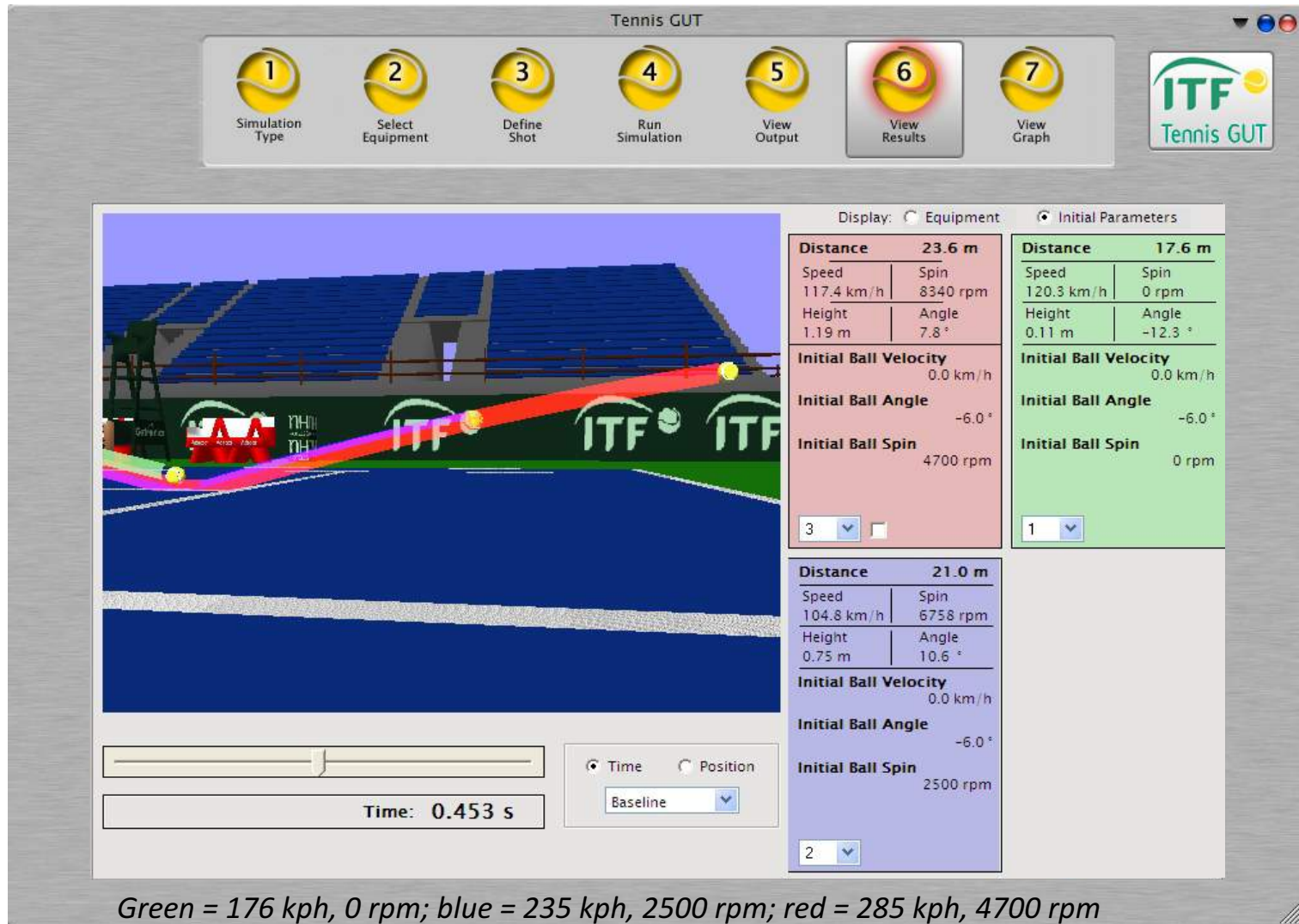
SPRite evolution



4G SPRite

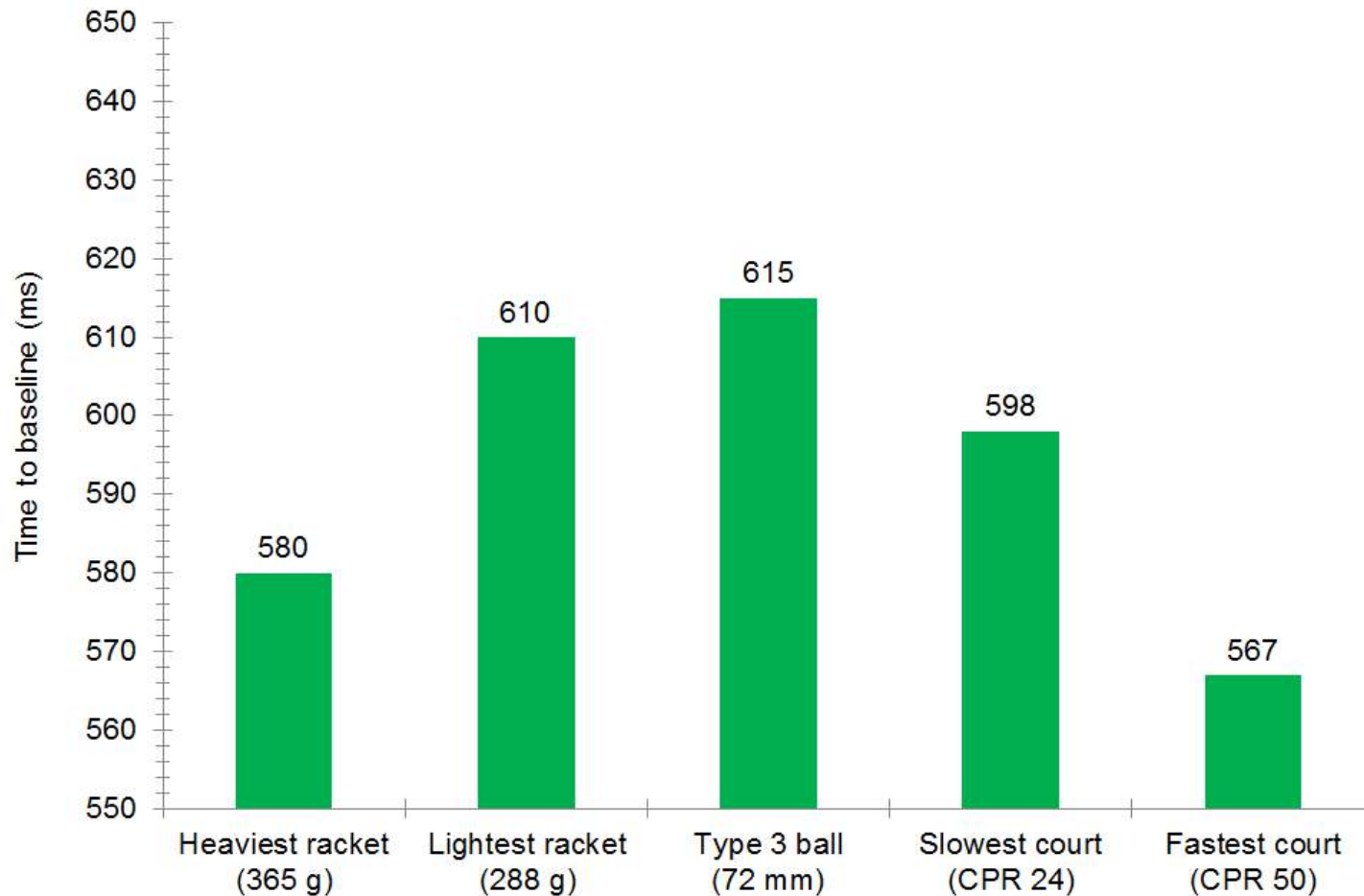


Modelling

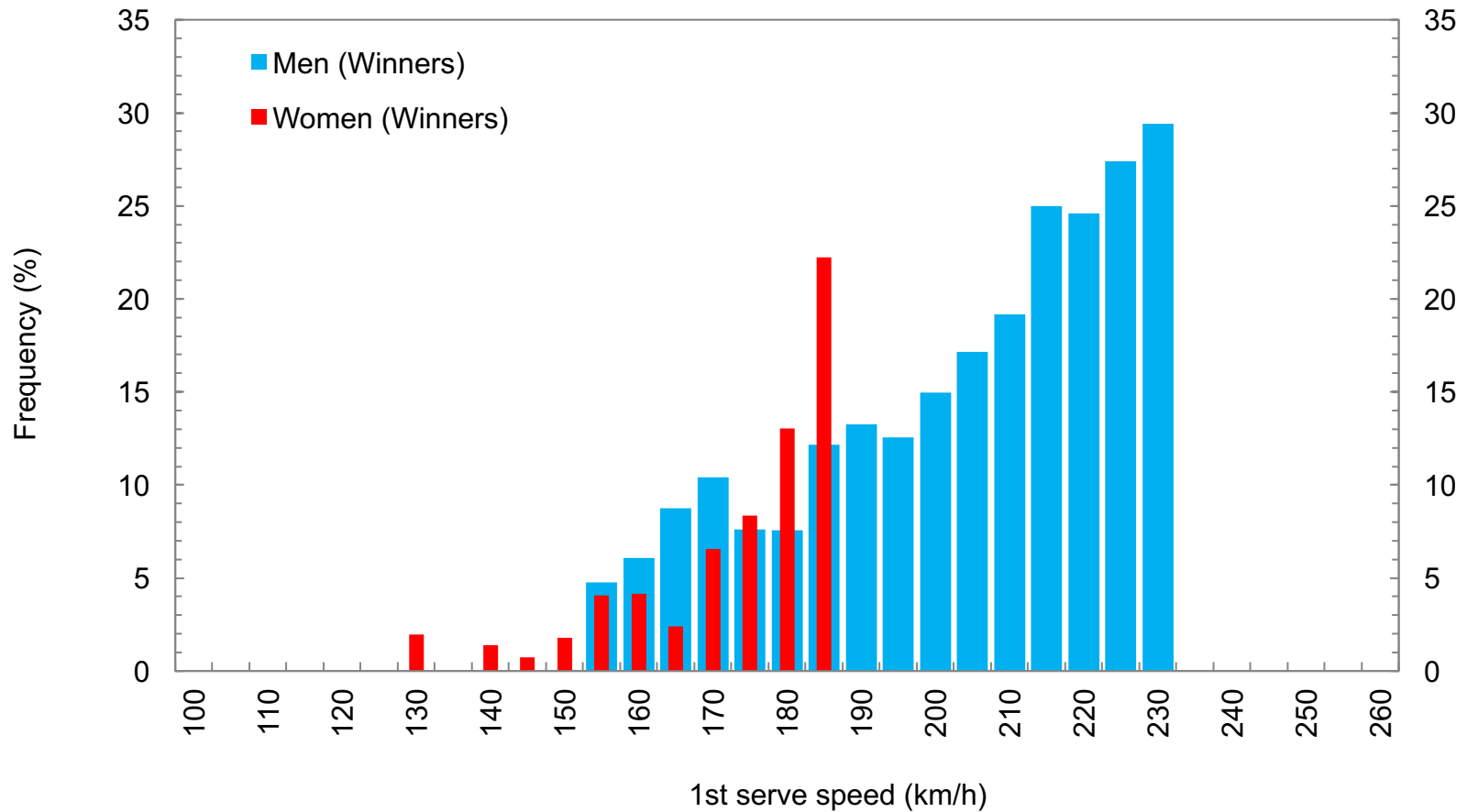


State of the game

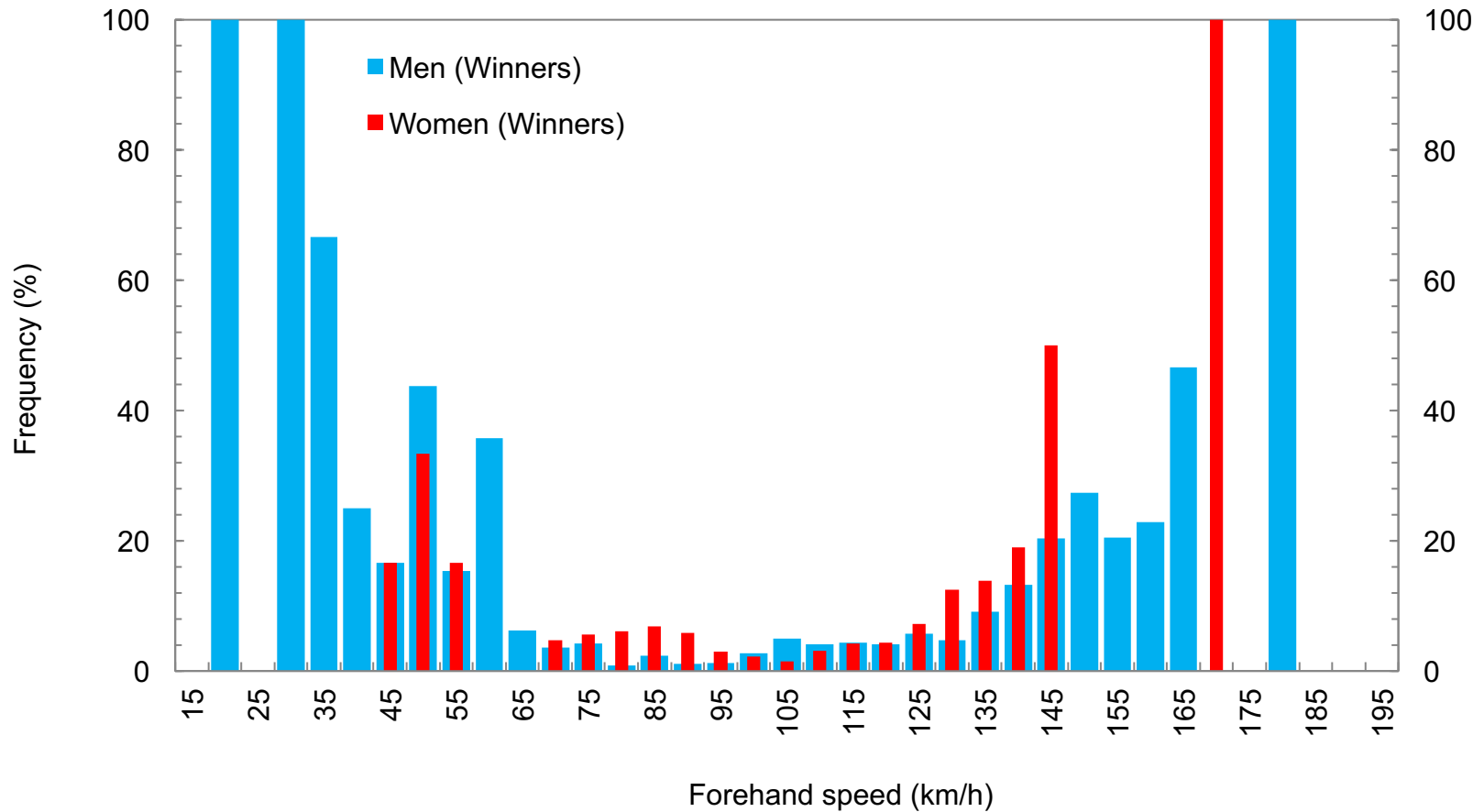
Simulated serve | Time to baseline



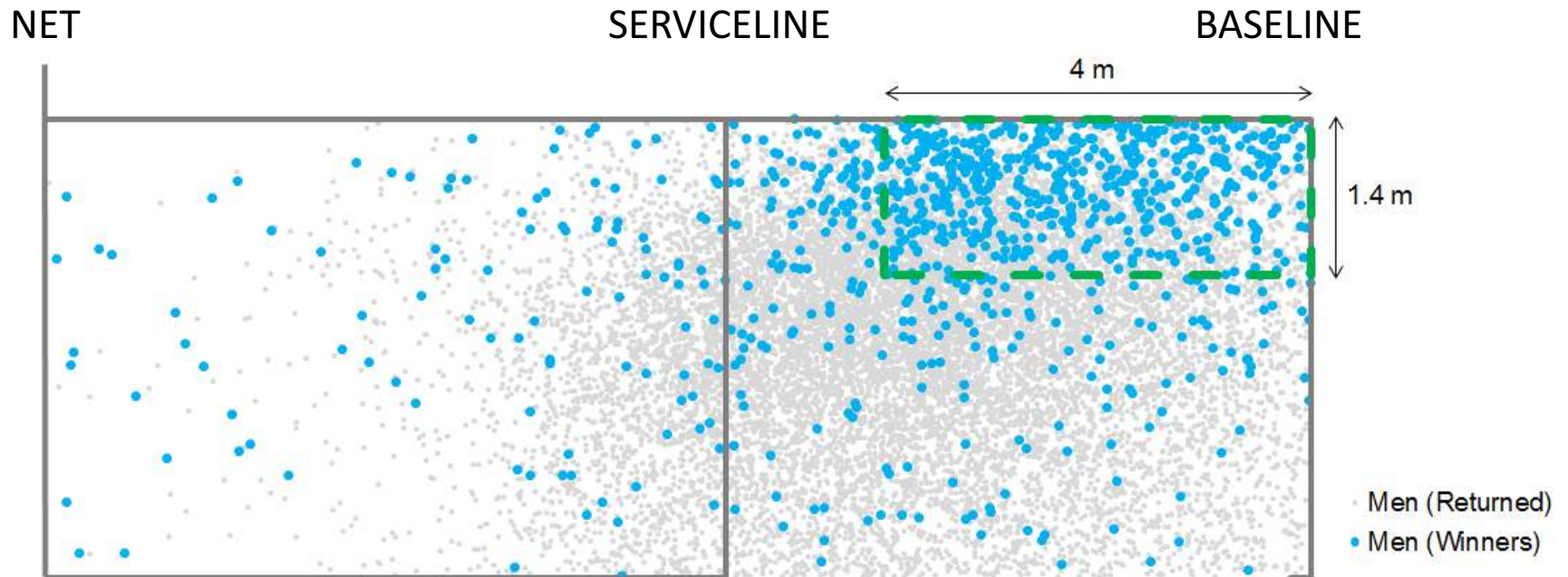
1st Serves | Winners



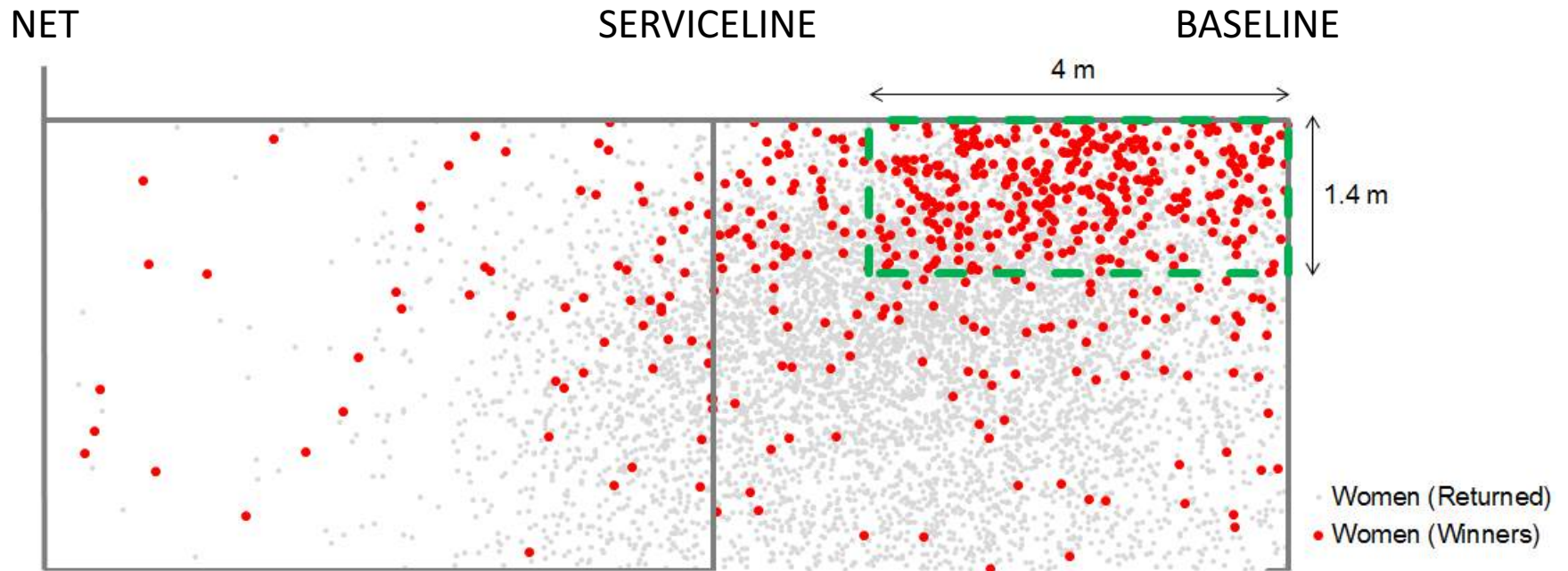
Forehands | Winners



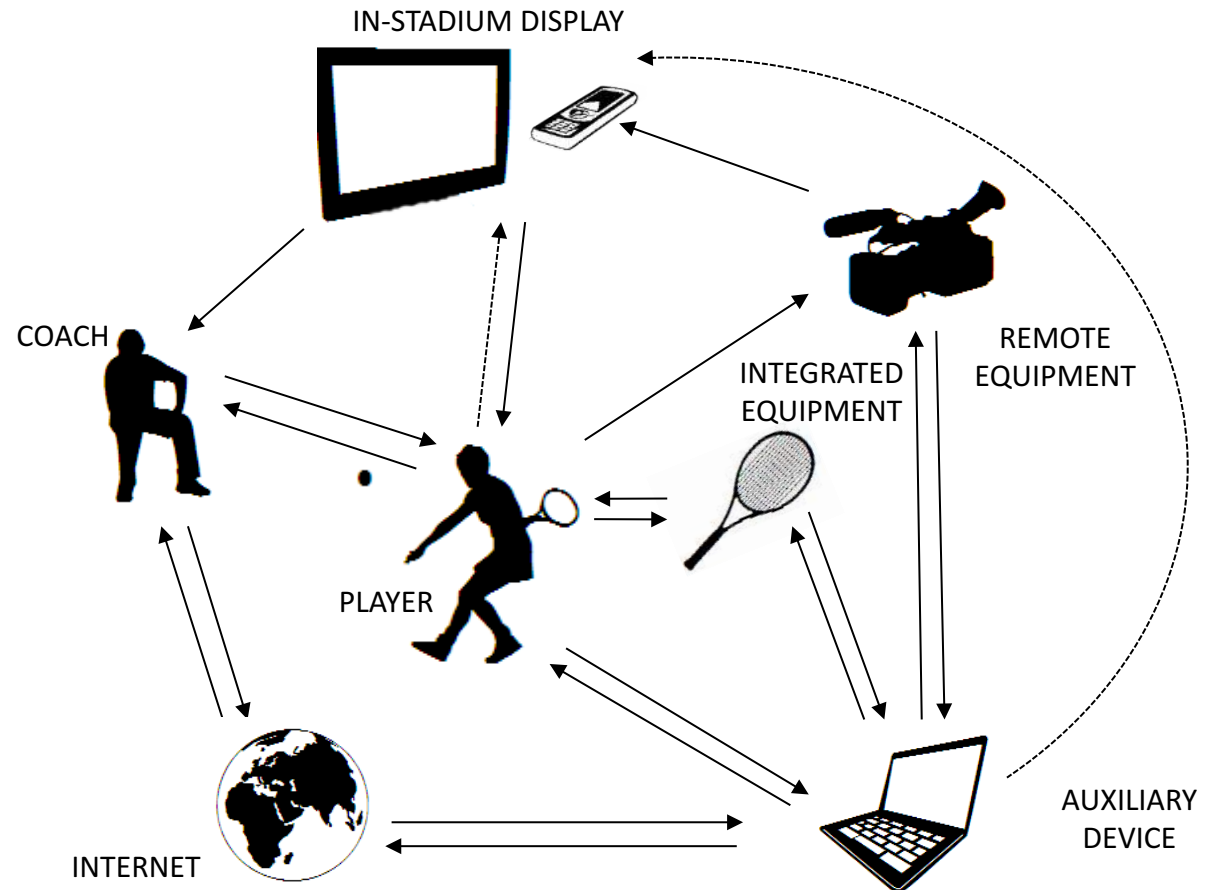
Forehands | Men | Winners



Forehands | Women | Winners



Player Analysis Technology (PAT)





BALLS

RACKETS AND STRINGS

COURTS

FACILITIES

PLAYER ANALYSIS

TECHNICAL CENTRE

PUBLICATIONS

APPLY

Overview

Introduction

Approved Products

Approved PAT products

PRINT

Brand name	Company	Product	Report	Certificate	Issue date
ARTENGO PERSONAL COACH	ARTENGO www.artengo.com eric.briet@oxylane.com		PDF	PDF	10 Mar 2014
BABOLAT PLAY PURE DRIVE	BABOLAT VS www.babolat.com contact@babolat.com		PDF	PDF	21 Jan 2014
HAWK-EYE	HAWK-EYE INNOVATIONS LTD www.hawkeyeinnovations.co.uk contactus@hawkeyeinnovations.co.uk		PDF	PDF	24 Dec 2013
KITRIS KIT	KITRIS AG www.kitris.ch info@kitris.ch		PDF	PDF	21 Oct 2013
PLAYSIGHT SMARTCOURT	PLAYSIGHT INTERACTIVE LTD www.playsight.com info@playsight.com		PDF	PDF	10 Feb 2014



Player Analysis Technology Approval certificate

Hawk-Eye

Test code: PAT-13-002

Serial no: n/a

Software version(s): n/a

Firmware version: n/a

Issue date: 24 December 2013



Objective: To test and evaluate Hawk-Eye Player Analysis Technology according to Rule 31 of the 2014 Rules of Tennis.

Result: Approved

SUMMARY

Multiple cameras fixed around the court are used to capture images of play. The cameras are connected to personal computers (PCs) on a wired, isolated network. Software, on the network, is used to reconstruct the ball and player trajectories in three dimensions from the camera images and a virtual model of the court.

The trajectory information is used to generate virtual replay graphics of the flight of the ball and movement of the players, and match statistics.

The event owner/sanctioning body/customer determines the information that can be distributed by Hawk-Eye. Information can be sent to the in-stadium display, TV broadcast and internet-enabled devices. The provision of line call replays to the in-stadium display is controlled by the chair umpire (and review official).

Restrictions on the access by a player to Hawk-Eye components during periods when coaching is and is not allowed are as follows:

COMPONENT	NO COACHING	COACHING
Video cameras	Permitted	Permitted
Two-way radio	Not permitted	Permitted
In-stadium display	Permitted	Permitted
Auxiliary device (e.g. smartphone)	Not permitted	Permitted

ARE YOU READY FOR **PAT?**

**Player
Analysis
Technology**

**NEW
RULE
IN 2014**
Is your PAT
approved?



PERSONAL COACH WATCH

PERSONAL COACH POD

HEART RATE SENSOR

GPS SHOE SENSOR





Technical