



Using video technology for elite sport performance analysis, athlete screening, talent identification and coach/referee education



Benoit Ammann,
Deputy Director
High Performance Analytics & Technology



Video Technology used at London 2012 Olympics



COB Video service, Crystal Place



Team GB and EIS Performance services



BBC using Dartfish for TV Broadcast



Team Canada



Various Performance Analysts at Cycling Venue

**“A Picture is Worth a Thousand Words -
Video has Thousands of Pictures”**

Dartfish – A world Leader looking at the entire Video Ecosystem



Fields of application

Video Technology can cover many fields and processes within a Sport Organisation:

- Live Video feedback
- Video replay
- performance analysis
- competitions archives
- coach education
- referee education
- athlete screening
- talent identification
- scouting
- database creation
- VOD, online access for media, press, fans & athletes etc.





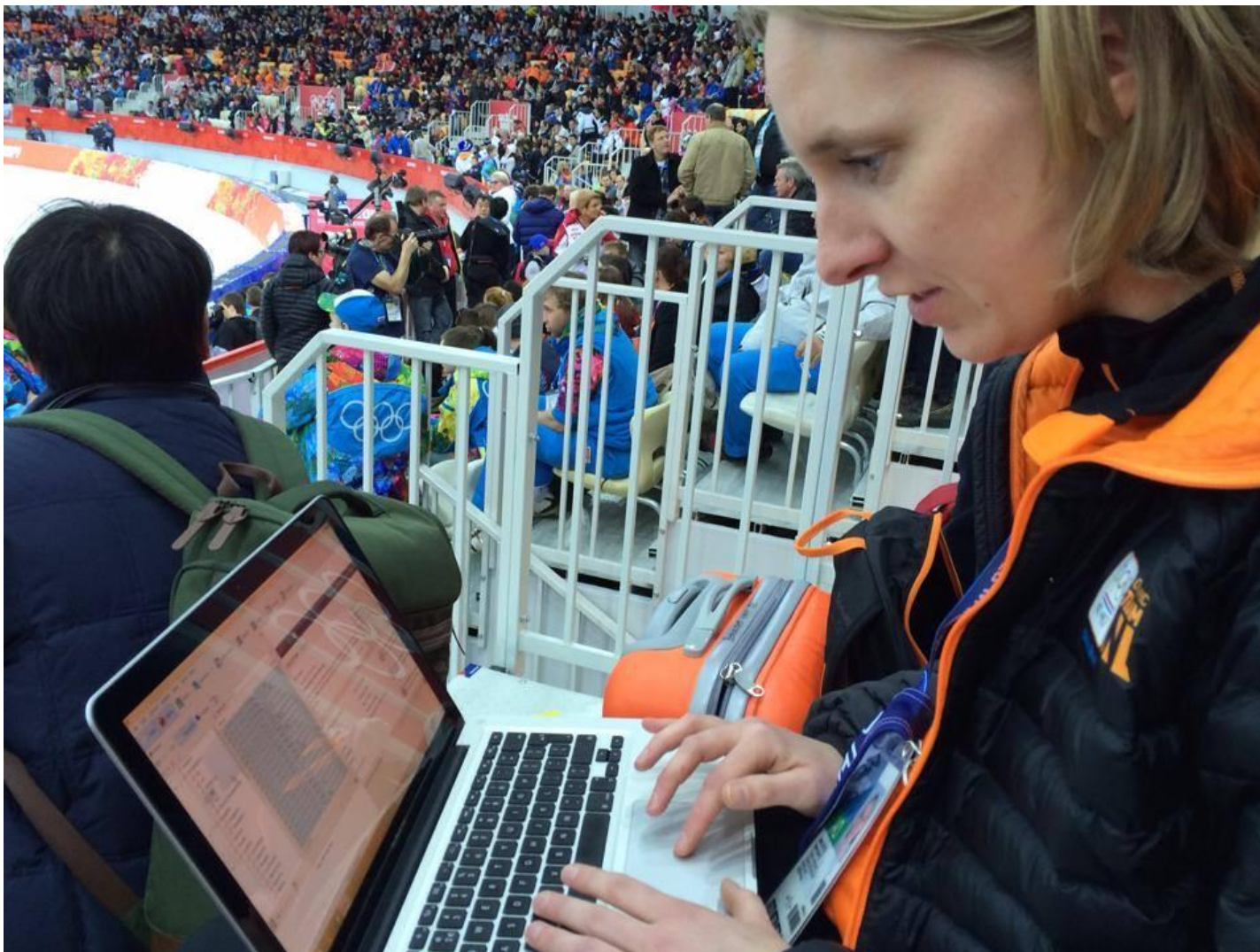
British Gymnastics, Women's National Junior Coach, **Nick Ruddock**



British Gymnastics, Women's National Junior Coach, **Nick Ruddock**



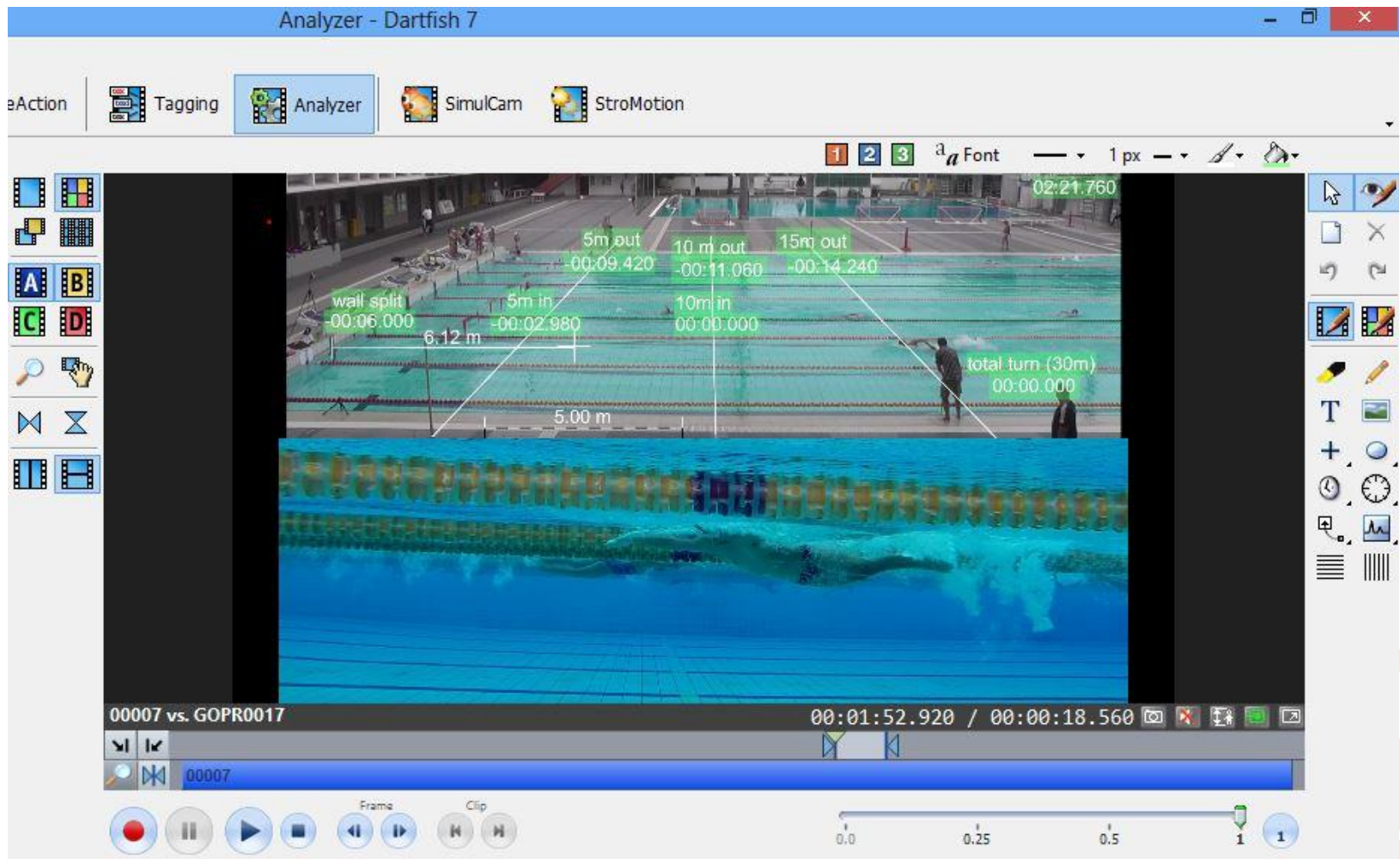
British Gymnastics, Women's National Junior Coach, **Nick Ruddock**



London 2012, Cycling Venue, Analyst from NOC



London 2012, Taekwondo venue Video replay



Performance Analysis at Singapore Sports Institute

“3 steps process”

Capture

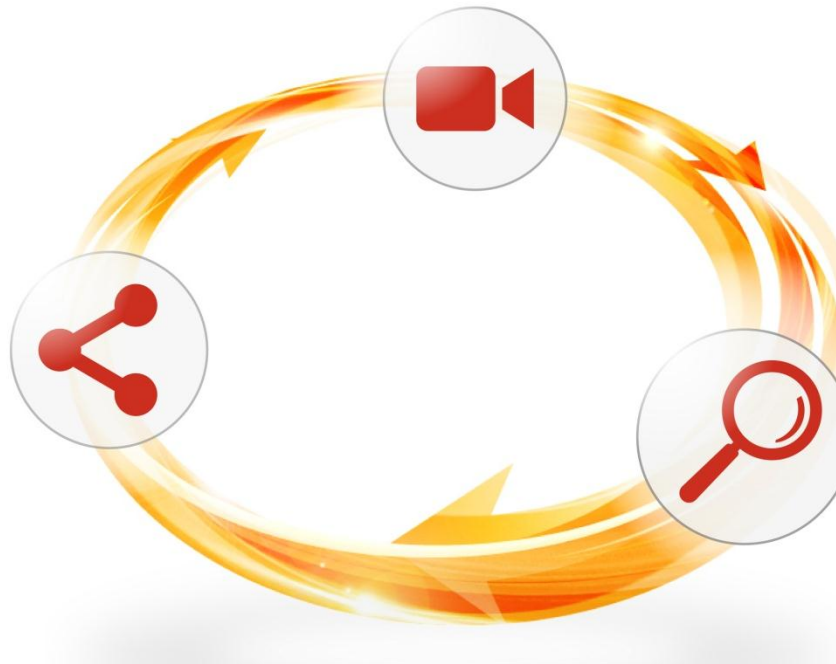
Video content of games,
competition, practice, training

Share








Your cloud enriched content,
anytime, anywhere

Analyze

Enrich and analyse your video
content easily, anytime, anywhere



Which camera?

CAMERAS					CONVERTERS		
	 DV/HDV	 Microsoft Lifecam Studio HD Webcam	 DARTFISH 7 ONLY (or newer) Onvif IP camera	 Basler High Speed camera	 DARTFISH 7 ONLY (or newer) Blackmagic H.264 Pro Recorder	 DV/ HDV Canopus converter	 USB converter
Connection	FireWire	USB 2.0	Ethernet (RJ45)	Ethernet (RJ45), FireWire	<u>Camera to converter</u> : Composite /HDMI / SDI <u>Converter to PC</u> : USB 2.0	<u>Camera to converter</u> : Composite/ HDMI <u>Converter to PC</u> : FireWire	<u>Camera to converter</u> : Composite <u>Converter to PC</u> : USB 2.0
Max. cable length	20 m	1.5 m (extendable)	100 m	100 m	Composite : 30 m HDMI : 100 m SDI : 5 m USB : 5 m	Composite : 30 m HDMI : 5 m Firewire : 20 m	Composite : 30 m USB : 5 m
Dual camera input	✓	✓	✓	✓	✓	✓	Not recommended
Video stream	DV/HDV	MJPEG	H.264	BYGB	H.264	DV/HDV	RCB/YUV
IMAGE QUALITY	Zoom (optical/digital)	✓/✓	Limited digital zoom	✓/✓	✓/✓	Image settings defined by video source	
	Focus	Manual	Automatic	Manual	Manual		
	Shutter speed	Max 1/10000	Basic control	Max 1/30000	Max 1/10000000		
	Frame rate	Max 60 fps	Max 30 fps	Max 60 fps	Max 60 fps		
	Resolution	480i/1080i	Max 1080p	Max 1080p	Max 1080p		


Which Hardware?

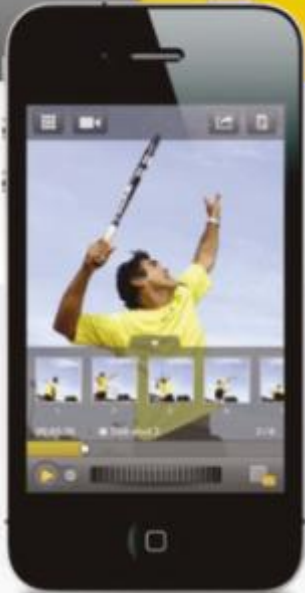
- Laptops (Windows 8/32 Bit Pro, Firewire, 4GB RAM)
- Tablets / I pads
- Camcorder (High Def, Hard Drive or Tape)
- IP cameras for fixed locations
- Ext. Hard Drives (500GB-1TB)
- Camera Bag and Case
- Tripod
- Cables & Connectors
- Force plates (i.e. AMTI),
- HR monitoring system,
- GPS system (i.e GPSports)
- Human condition and performance data (respiratory rate, skin temperature, body position (i.e Equivital)




Or just Mobile?

DARTFISH EXPRESS







EXPRESS YOURSELF
with the power of video

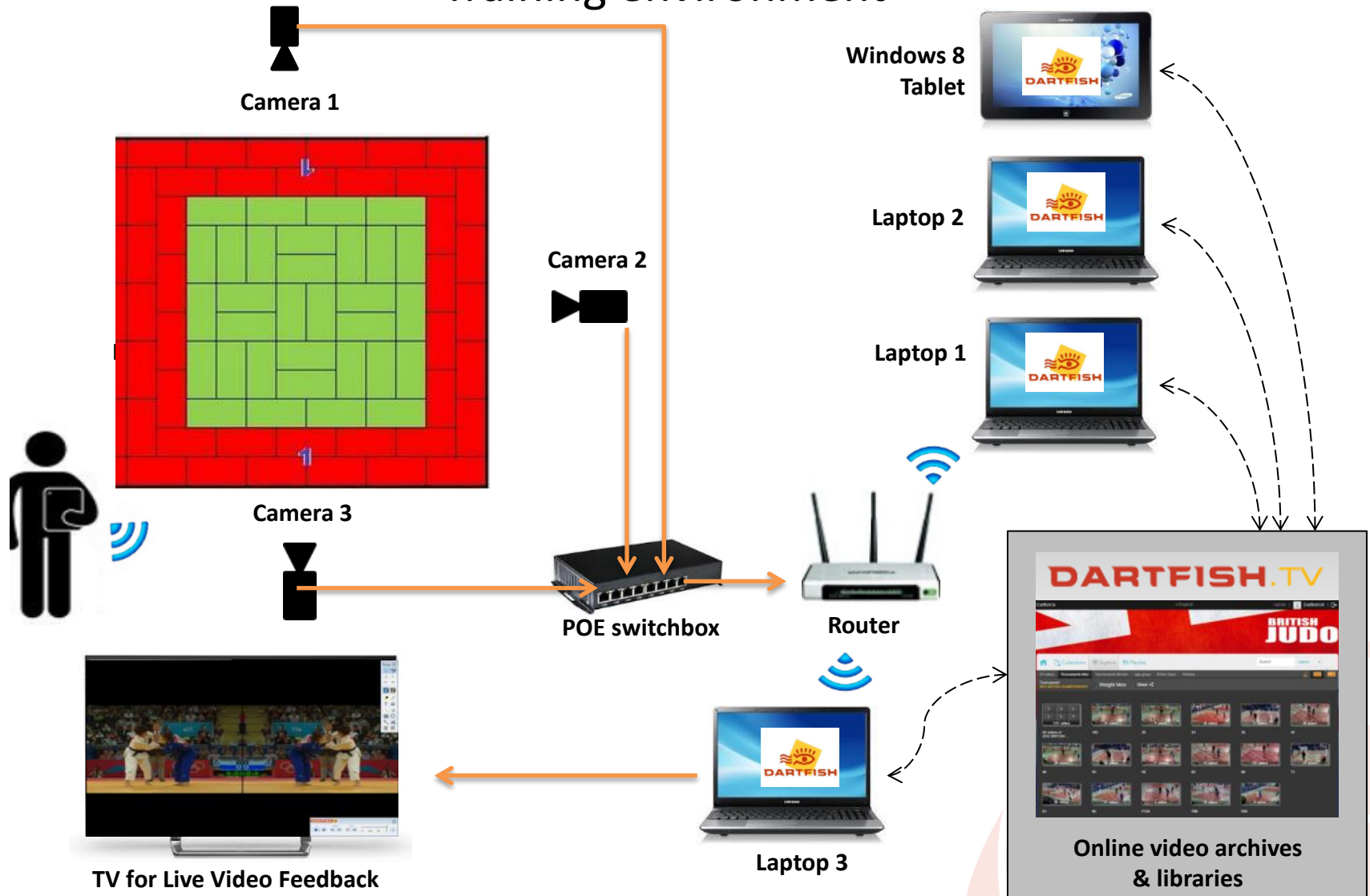
You have knowledge to share...

Dartfish Express will help combine your experience to the video to get your message across on-the-spot or to share it to [dartfish.tv](#).

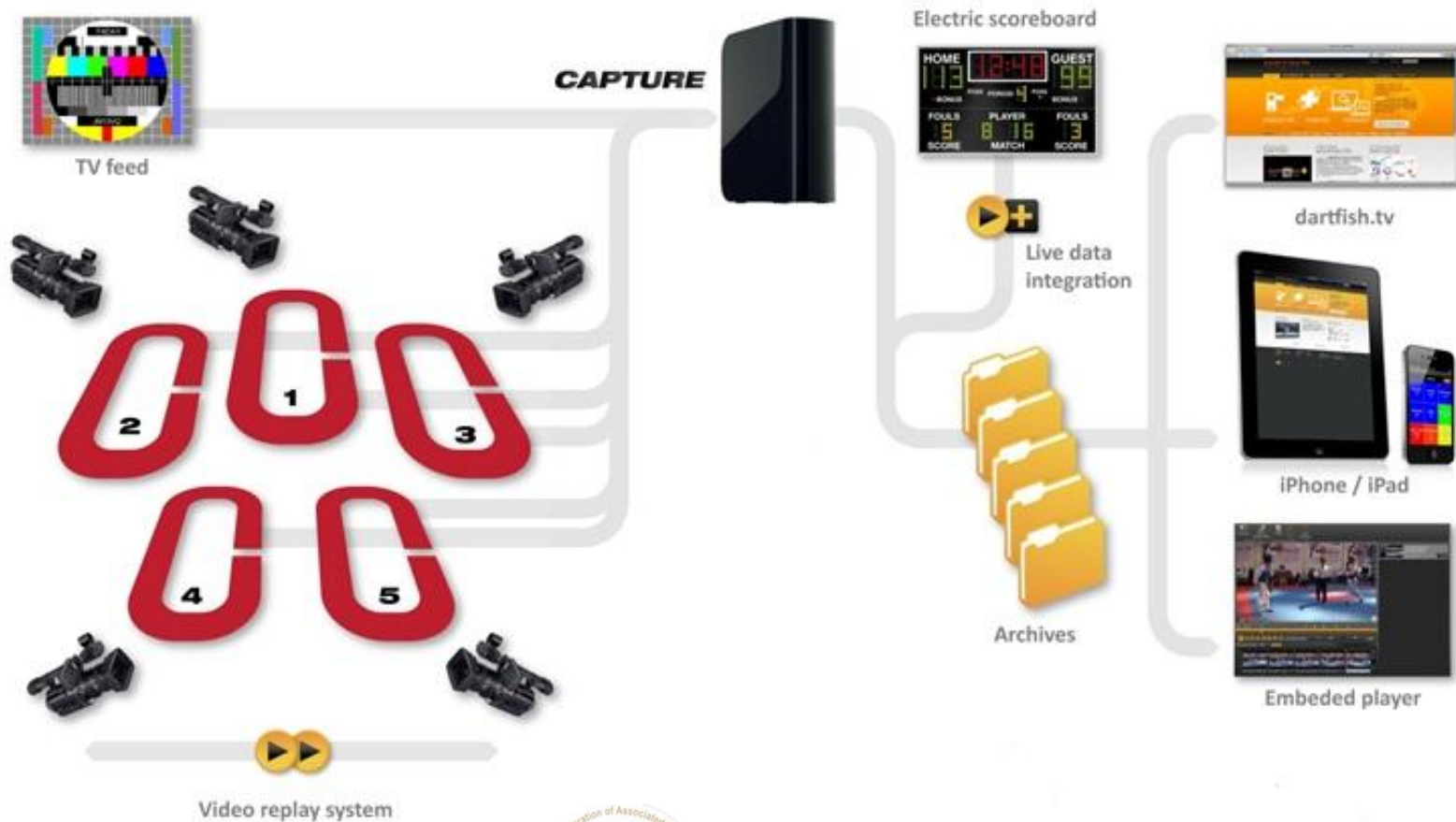
- ✓ **MAKING THE INVISIBLE VISIBLE**
What we perceive is not necessarily reality. Video takes you beyond perception.
- ✓ **IMPROVE ON-THE-SPOT**
Quickly identify areas of improvement with powerful video analysis tools.
- ✓ **GET YOUR MESSAGE ACROSS**
Add your expertise to the video with still shots, drawings, and comments.
- ✓ **REACH YOUR AUDIENCE**
Publish your videos to [dartfish.tv](#) and share them with your unique community.



Training environment



Competition environment



Selected Dartfish TV private video platform users



www.dartfish.tv/customers.aspx



Case study – World Taekwondo Federation

www.dartfish.tv/wtf



Organisation

World Taekwondo Federation

- Olympic sport, 60 Million players globally
- Typical case of a sport with **limited broadcast exposure**

Goals

- Get **more public exposure** w/ online videos
- Production & diffusion at **affordable costs**
- Every minute of a competition is of importance to someone



Video Technology Solution

- To efficiently create **massive volumes of quality content**
- To have a **structured library** of all relevant matches
- As a **communication tool** to promote the sport
- To **build a community** with highlights and sharing tools
- **18,000+** videos in **90+** events covered, including all major championships since 2009
- **Fans** to access videos anywhere at anytime via **branded app**



Platform sponsors



Case study – European Judo Union

www.dartfish.tv/eju



Organisation

European Judo Union

- Olympic sport, 20 Million practitioners globally
- Typical case of a sport with **limited broadcast exposure**

Goals

- Production & diffusion at **affordable costs**
- Every minute of a competition is of importance to someone
- To bring it from a private to a public space

Video Technology Solution

- To efficiently create **massive volumes of quality content**
- To have a **structured library** of all relevant matches
- As a **communication tool** for the sport
- To **build a community** with highlights and sharing tools
- **33,000+** matches in **120+** events covered including all major championships since 2009





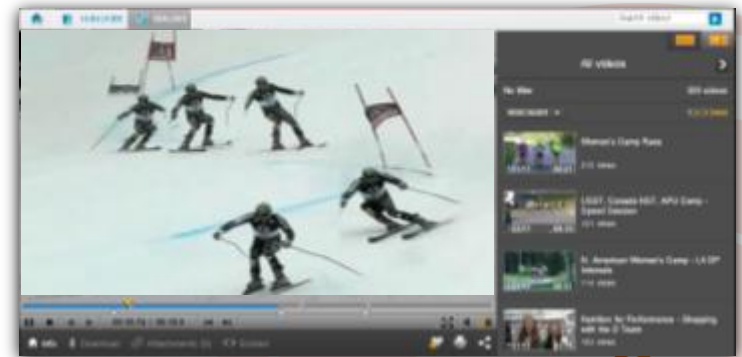
- **National governing body**

Goals

- Use video technology to **improve performance** of athletes
- One single platform to **exchange and communicate internally**
- Library of educational content for **fan community**

Video Technology Solution

- Events & practice **footage created by the coaches**
- **700 public videos** enriched with comments, analysis and drawings
- Used by **multiple sports** within the organization
- **‘More eyes’** contributing to success of athletes



Case study – USTA

www.dartfish.tv/usta



Organisation

US Tennis Association

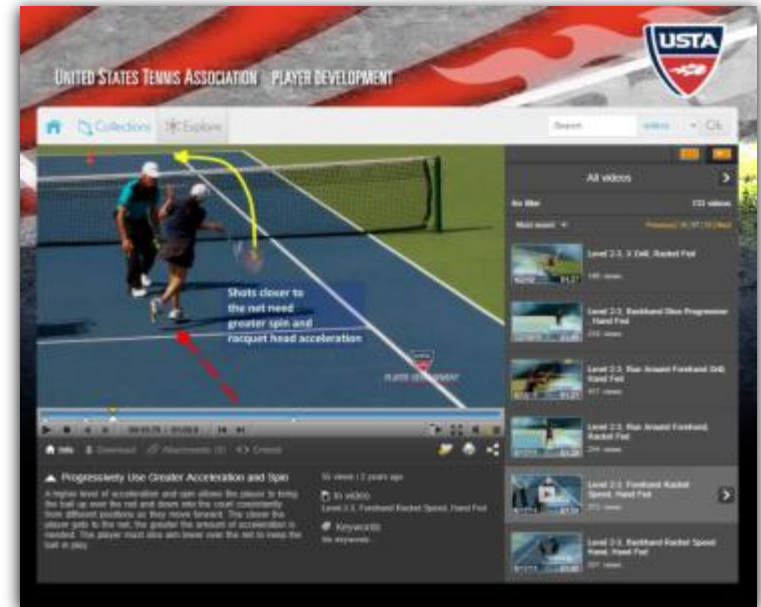
- National governing body
- Organizer of the US Open

Goals

- Use video technology to **improve performance** of players
- One single platform for **player development**
- Library of educational content for **fan community**

Video Technology Solution

- Events & practice **footage created by the coaches and during the US Open**
- **130 public and 5,000 private videos** enriched with comments, analysis and drawings
- **A branded app** for IOS and Android



Case study – LTA – Athlete screening



Organisation

Lawn Tennis Association

- National governing body
- Organizer of Wimbledon

Goals

- Screen **Top 150 athletes** and track their performance and improvement /evolution
- One single platform for **player development**
- Library of educational content for **coaches education**

Video Technology Solution

- Competition & practice **footage created by the performance analysis team**
- **Database with 3 years or performance data** for the TOP 50 athletes
- **A branded app** (iOS and Android) for coaches and athletes private access



Case Study – UEFA – referee education



Organisation

UEFA

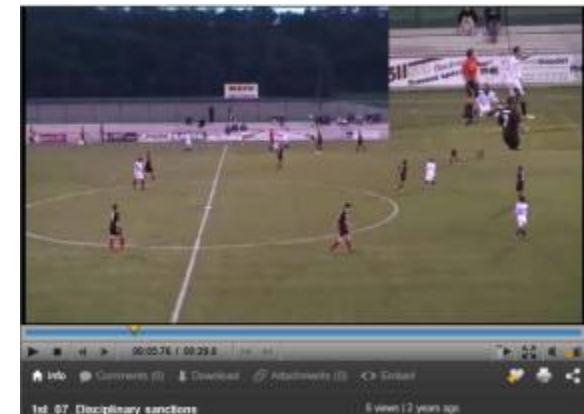
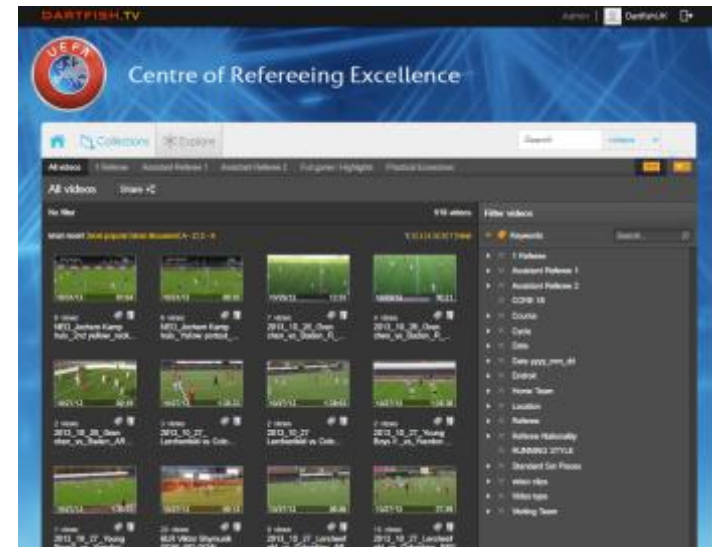
- European governing body
- Organizer of the European Championships

Goals

- Use video technology to **improve performance** of the **referees**
- One single platform for **referee development**
- Library of educational content for **referees**

Video Technology Solution

- Train referees during courses using Dartfish video analysis software
- Distribute educational content to referees via Dartfish TV
- Analyse and assess referees



Thank you!

benoit_ammann@sport.gov.sg

Linkedin: Benoit Ammann