

**Referee
Communications at
World Rugby
Events**



Introduction

World Rugby are looking to standardise delivery of referee communications across its competitions and to provide a structure for other tournaments to follow. The aim is to provide consistency for service providers (Provider below references these organisations), referees, teams and venues.

Referee Communications systems are used to ensure that the refereeing team have a reliable, quality method of communicating with each other in performing their duties.

The primary focus is on the refereeing team. Referee, assistant referees, television match official (TMO), where applicable along with sideline officials, including the timekeeper, must all be able to communicate.

Additional consideration is given to distributing the ref comms output to interested stakeholders. These include but are not limited to the referee reviewers and wider officiating roles, match management team, teams, broadcast, media and fans.

Finally, making the audio from referee teams available post-match to performance reviewers and the officials themselves and aligning it with match video footage is becoming an expectation within the game.

Provider Personnel

15s Matches

Standalone Matches

For standalone 15s matches, providers should not need any more than one person on site to manage delivery.

Multiple Matches on one day

For match days where there are more than 2 matches in a venue on the same day, two ref comms personnel should be on site to manage delivery.

These may change depending on:

- Technology being used
- Venue set-up and work spaces
- Individual tournament requests

7s Tournaments

For 7s tournaments, there should be a minimum of 2 ref comms personnel on site for the whole tournament. Depending on the venue set-up three are often required.

For 7s events, a dedicated room or space must be provided for Provider to use to fit match official teams.

Set Up

Figure 1 shows a typical cabling and feed flow diagram for a venue. It demonstrates the key areas where Referee Communications are required and where each data source comes from.

Figure 2 shows the roles that need to have audio collected. Their ability to talk and be heard is indicated along with who, generally, is responsible for collecting the audio and distributing it.

Feeds collected by Broadcast are usually provided via the talkback systems with XLR delivery to the provider's location in venue.

Provider should always be provided with Broadcast Technical Power as Referee Communications is a match critical delivery.

If Foul Play Review Official (FPRO) is being used, they do not need to have the ability to speak directly to the referee. FPRO decisions and information will be relayed by the FPRO Operators to any stakeholder required if on site and through the TMO Operator(s) if remote FPRO is being used.

AUDIO FEED DISTRIBUTION

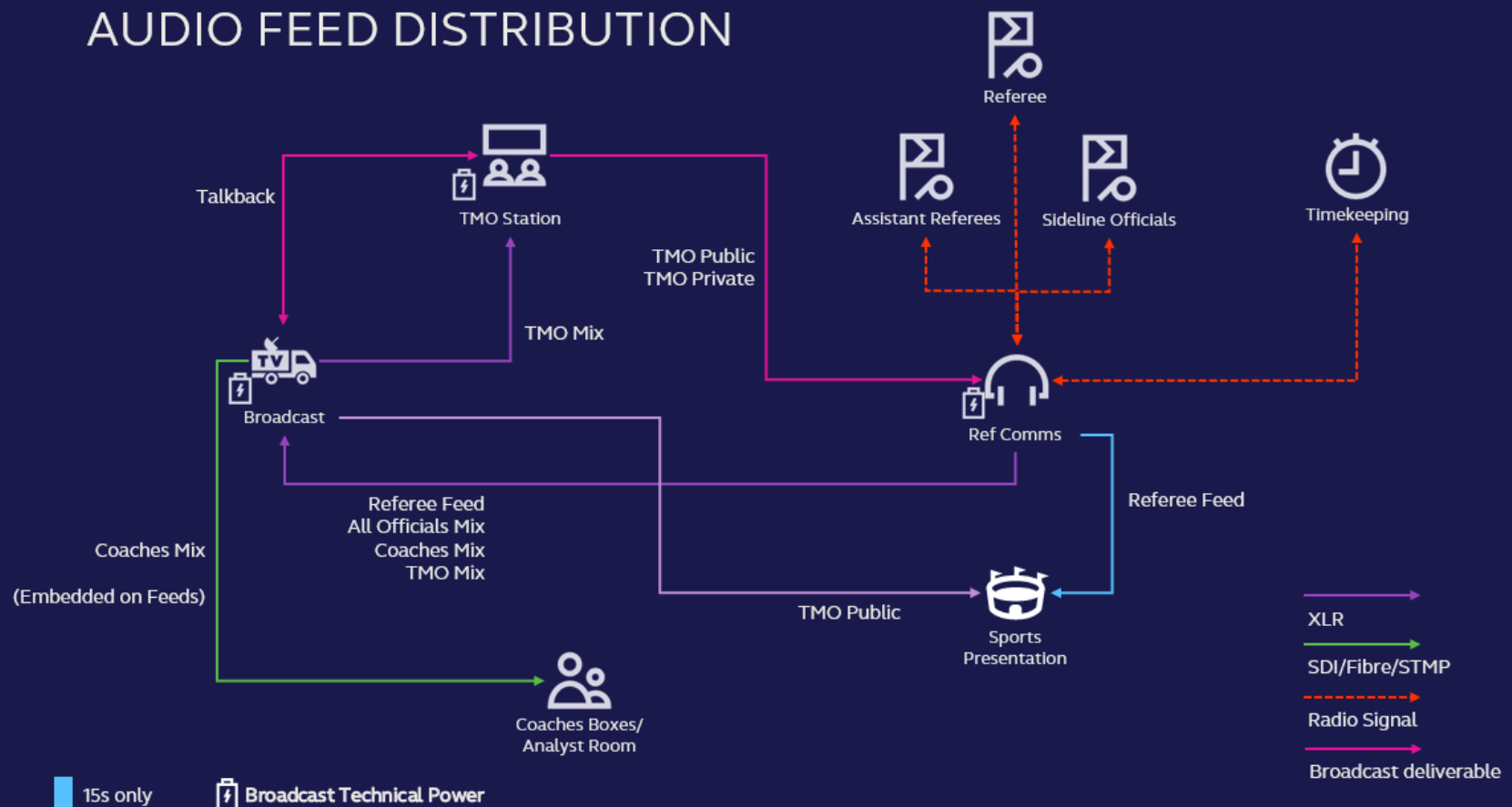


Figure 1 - Typical Cabling and Feed Layout

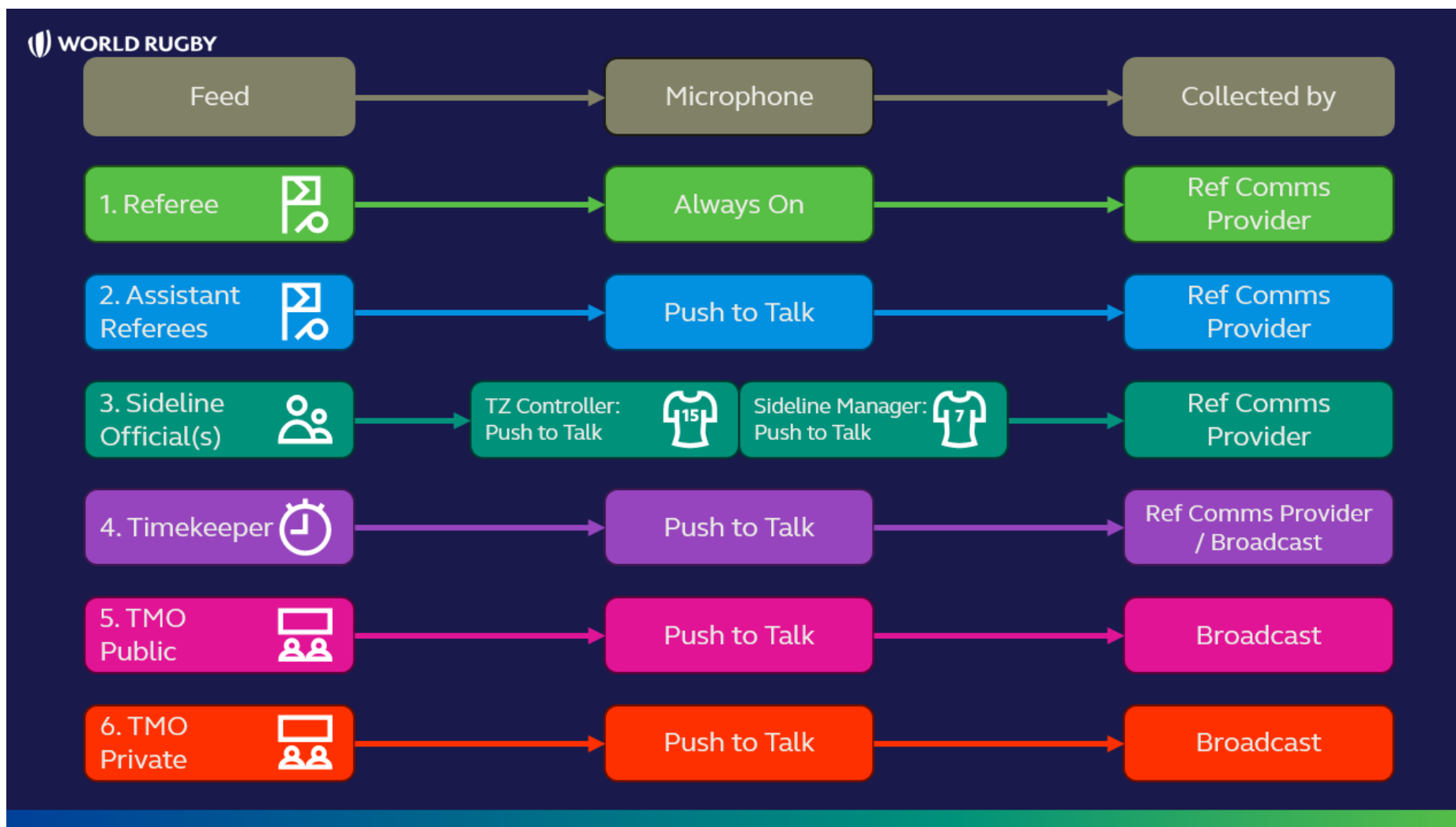


FIGURE 2 - FEEDS COLLECTED AND CONTROLS

Delivery

The following feeds and mixes are delivered:

- Referee Feed
 - To broadcast (from provider)
 - To Sports Pres in 15s to play over the stadium PA. (from broadcast)
- TMO Feeds (from broadcaster)
 - To provider
 - TMO Public to Sports Pres in 7s to play over the stadium PA. (from broadcast)
- All Official Mix (from provider)
 - To broadcast to help with production only, never for public use.
 - Encoded and shared to the cloud as per World Rugby instructions.
- Coaches Mix (from provider)
 - To broadcast to embed on coaches feeds.
 - Where possible should be available via speaker in the coaches' boxes.
 - Encoded and shared to the cloud as per World Rugby instructions.
- TMO Mix (from provider)
 - To broadcaster to deliver to TMO Booth. Booth should have a speaker to play audio so everyone in the booth can hear it.
- Referee Mix (from broadcaster)
 - To air on transmission feed.

Note:

Providers should have additional listen-only devices for match management and other personnel.

IMPORTANT:

As part of World Rugby's minimum standards for Video Review, under no circumstances must the TMO Private Feed be circulated to coaches or publicly.

Timing

Outside of the usual testing and checks done with broadcast and other users, Providers should turn on the referee's microphone as the teams are running out on the field and mute it again when the referee enters their dressing room and closes the door at both half time and full time. For 7s the referee's microphone should be muted for half-time and again once the referee leaves the field of play after the match.

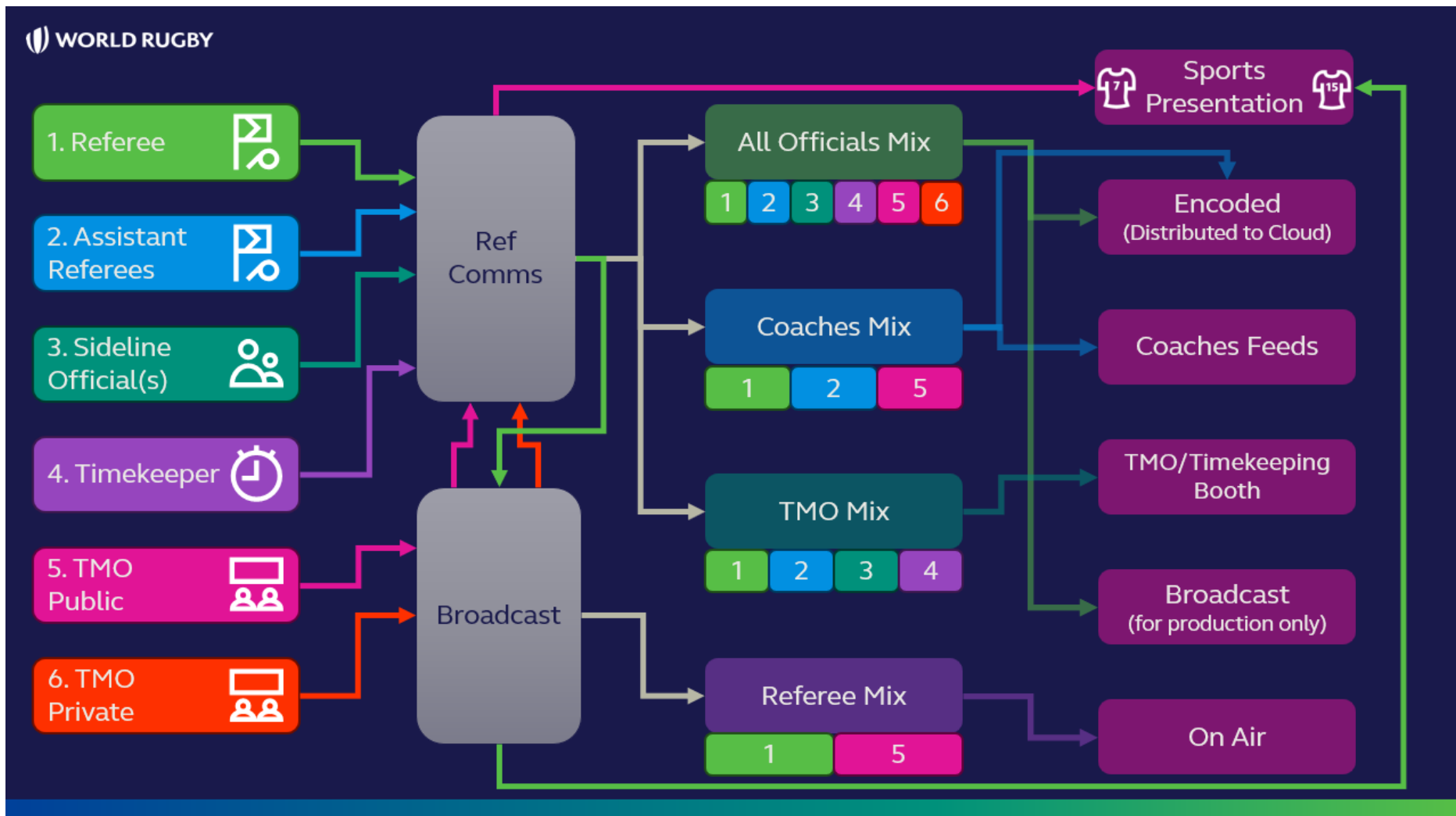


FIGURE 3 - FEED COLLECTION, MIXING AND DISTRIBUTION

Encoding

World Rugby are launching a project to make select referee communication feeds available outside of the above. This means that audio can be accessed either live or post-match by the likes of:

- Video storage systems to provide options during viewing
- Distribution to fans/partners
- Media
- Citing
- Off-site Referee Review
- Off-site team analysts

To achieve this World Rugby need providers to be able to encode feeds into MP4 format and be able to stream out at a minimum of 150Kbps bit rate.

By default the following feeds should be encoded although additional feeds may be requested from time to time:

- Referee Mix
- All Officials Mix
- Coaches Mix

Depending on the use case, if Referee Mix and Coaches Mix are embedded on individual camera angles then there may not be a need to encode them separately. It should be assumed unless otherwise indicated that all three are required to be encoded.