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Guide to radio controls

For organisers



Why radio controls?

- Provide information to commentators so they can tell the unfolding story of the races
- Informed spectators cheer on leading athletes, and make an exciting atmosphere
- Can also be used in relays as warning of incoming runners (e.g. Harvester)
- Potential safety feature



Technology



- Radio Controls
 - Both SPORTident and EMIT have online controls, with RS232 outputs which connect to GPProjects equipment to get punch data back to the commentators
 - SPORTident Short Range Radio (SRR) technology (as used in Air+) is incorporated in to GPProjects products. However, EMIT fly-by technology cannot be used with GPProjects equipment
- Radio Network
 - GPProjects equipment is based on three types of telemetry – wired, radio and mobile. The choice of telemetry used depends on the location of the radio control

Radio Network Technology

Product	Telemetry	Capacity	Latency	Range
Merge	Cable (serial, Ethernet)	250 / min	< 10 sec	< 500m
Kestrel	Radio	30 / min	< 20 sec	< 1Km
Eider	Mobile phone network	40 / min	< 30 sec	GSM



Commentary equipment

- Public Address (PA)
 - Standard outdoor PA requirements
 - 100V designed for voice & outdoors
 - Switched microphones
- Van or tent?
 - Logistical & financial decision
 - Needs to be large enough for ~3 people and up to 5 laptops/screens
 - Needs several sturdy tables and chairs
- Power 120W to 240W, ~2kw (generator or mains)



Technical considerations

- Results software choice
 - Your results software needs to support commentary & radio controls
 - Your commentators have to be happy with the software choice
 - In the UK we regularly use 3 systems
 - Sport Software (OE, OS)
 - SportIdent (AutoDownload)
 - Michael Napier (MERCs)
- Punching starts
 - OK for helpers, but otherwise very difficult for us to manage
 - When implemented for all competitors, radio control equipment will be required for all start boxes
 - Will increase your costs considerably

Arena considerations

- Locate commentary team with good visibility of the run-in, and finish/spectator control(s) if possible
- Cable run between commentary and download must be < 120m (not Wifi – it's just not fast enough)
- Preferably taped off from general spectators – a lot of equipment and cables around
- Cables from final & finish controls to commentary
 - Cables are usually run along taped fencing - ensure these are sufficiently robust (double layer is good practice)
 - Any cable that crosses public areas needs protecting
 - We have limited rubber trunking for crossing roads, but otherwise this involves digging the cable into the ground or flying it overhead
 - Avoid as much as possible

Arena considerations

- Ensure good vehicle access
 - When commentary van used, a 4x4 may be needed for muddy or steep arenas
 - Equipment will need to be brought into the arena by GPProjects
- Prize giving
 - Ideally within good view of commentary van/tent
 - Radio mikes can be used when commentators can't be in the van/tent. Limited range, up to 100m

Commentators

- Arguably the most important part
- It's always a team effort
- Some experience essential (encourage interested youngsters to work alongside experienced commentators)
- Need to schedule around runs / family commitments
- You can never start too early booking commentators

Commentators' Information

The following is a list of the standard information the commentators will want from the event team:

- Previous day results
- Start lists
- Full set of maps
- Filler information
 - Event, area
 - Landowners, officials
 - History
- Announcements
 - Sponsor information
 - Event notices



Relay Considerations

- Dibber check at map issue
 - Catch team changes
- Radio controls can provide data for handover
 - As often used at the Harvester
- A lot going on – additional commentators and/or 'spotters' may be helpful for larger events to help keep on top of everything

Example – BRC2015

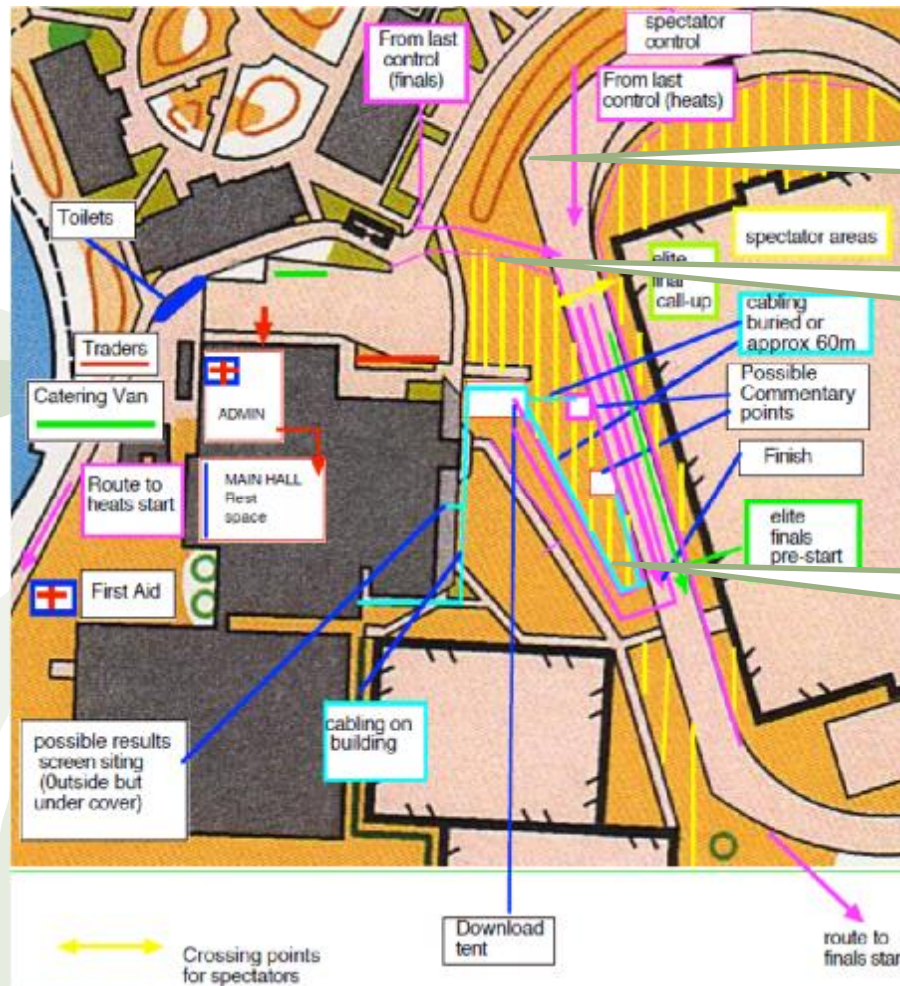


Good access to arena

Proximity of commentary to download

Good view of start, spectator control and finish line

Example – British Sprints 2012



Same approach to arena for heats and finals – saved re-cabling between races

Long cabling from final control run over concrete meant lots of trunking

Exact planning of layout and cable runs minimised effort / stress on the day

Example BOC2011



Highly visible last control

Multiple last controls

Run-in with long sweep meant extra 100m of cable required

3 pedestrian crossings required digging in cables

Spectator run behind commentary van meant it was missed by spectators

On the day

- GPProjects team aim to arrive in arena 2 hours before 1st start
- We will put out the radio control equipment, run cables in arena, and set up the computers in the commentary van. GPProjects will remain on site providing technical support throughout the event.
- Please consider need for
 - Tractors or 4x4 to pull commentary van in/out of steep / muddy arena
 - Keys to forest
 - GPProjects vehicle access to arena before/after race
- Setup is always tight – please don't leave it to the day:
 - Agree commentary van location beforehand
 - Photographs of arena helpful
 - Consider Plan B

Costs

- Depends on the requirements, location and size of the event
 - For a Regional Champs size of event budget ~£300
 - For a BOC / JK size event, budget ~£400 per day
 - If hired, PA van is additional (~£400/day)
 - We charge for the rent of equipment and mileage, but not our time

Information please

- Logistics form used to collate information we require:
 - Area, directions, access
 - Times of 1st start, courses close, prize giving
 - Equipment required
 - Results software used
 - Commentators
- Arena plan
 - Check planned layout meets our requirements
 - The more detailed the better – allows us to plan, bring necessary equipment, and be self-sufficient on the day
 - Photos can be helpful
 - Please tell us of any last minute changes!

Timelines

What	When (T-)	Who
Initial contact	~6 months	Organiser
Book commentary van, generator etc	3-6 months	Organiser / BOF
Draft arena plan	2-3 months	Organiser
Finalised arena plan	2 weeks – 1 month	Organiser
Logistical information	2 weeks	Planner / organiser