

Managing a MTB Enduro with SPORTident Air+ Contactless Timing Equipment

This is a brief overview of how you would manage a MTB gravity enduro type event with SPORTident Air+ contactless timing and the SiTiming software. For more details documentation on SiTiming and to download the latest version of the software, please visit www.sportident.co.uk/sitiming/.

It is assumed that:

- You have hired all the timing equipment from SPORTident UK and therefore all the stations and beacons have been programmed correctly.
- SPORTident UK has set up the event in SiTiming and sent you the event backup.
- You have an understanding of SiTiming and can do things such as add or edit an entry and display results.

The kit

You may have been provided with more than one for some items (such as Mini Readers) where they are critical for the success of the event.

Your own laptop(s) with SiTiming installed

Please install SiTiming and gain familiarity with the software prior to the event.

SIAC Active Card

These timing cards come on a wrist strap and you need one for each participant. Ask all riders to put it on the same wrist and locate the Start and Finish Beacons (BS11-BS and BS11-BL, see below) for each stage on this side. The SIAC will beep and flash when it has recorded a stage start or finish time – occasionally the beep is very quiet, that is fine and the card can still be used.



Master Station BSM-USB or Mini Reader

This connects to your computer and is used at registration when allocating the SIACs (timing cards) to participants, and to download SIACs.



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Stations - either BSF7 or BSF8

You will have stations set up with one of the following uses – they will be labelled to show which mode they are in:

Clear

Put the tip of the SIAC in the hole to remove all previous times from the SIAC. The station will beep and flash to show that this has been completed.

SIAC On / Test

Used to test that a SIAC is in contactless mode, and if it isn't then contactless mode will be turned on. Dip any SIAC to turn the station on. As a SIAC is brought close to the station the SIAC will beep/flash if it is in contactless mode, otherwise dip the SIAC and contactless mode will be activated. No data is recorded on the SIAC.

SIAC Off

This switches the SIAC off. Unnecessary where SiTiming is used as SIACs can be switched off on download.



SIAC Battery Test Station

This is used to check the voltage of the SIACs. Dip the SIAC in the hole and the Station will beep and 'OK' will be displayed on the LCD screen. If the voltage is too low the LCD display will display 'FAIL' and the station will not beep. In this case the SIAC should not be used until the battery has been replaced so the rider will need to be given a new SIAC before they start. If you get 5 beeps and the LCD shows 'LOW' then the battery has limited life but should last for the current event unless a lot of radio data is being collected from the chip for live timing.



BS11-BS-Blue (Beacon Station Small)

These beacons have a range of about 1.5 metres. They are used at the beginning of the journey (typically at the event centre) and the start of each stage to record the time on the SIAC.

Journey Start or Pre Start Test

If you do not check that the SIACs are working contactlessly as they leave registration then it is important to use a Journey Start / Pre Start Test beacon. Riders pass this beacon as they leave the event centre at the beginning of the event. You need to have a marshal here checking that the SIAC beeps and flashes as the rider passes. It also shows the riders what to expect on the course. Could use a SIAC On / Test station in it's place, though this would have a smaller activation field.



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Stage Start

One for the start of each stage in the event.

Switching a small beacon on

Place the magnet (on the lanyard) on the left-hand side of the display where it says '1 / 0'. The display will activate and the beacon will beep and flash. The beacon will switch off after a pre-set amount of time (usually 12 hours), so do this on the morning of the event rather than the night before.

**Switching a small beacon off**

Hold the magnet in the same position as for switching the beacon on, but leave it there for longer (it will double-flash several times) until the display goes off.

BS11-BL (Beacon Station Large)

These beacons have a range of around 3 metres and record a riders SIAC travelling at up to 40km per hour. They are used for the finish of each stage.

Stage Finish

One for the end of each stage.

**Switching a large beacon on**

Either press the red button on the reverse of the beacon, or place a magnet on the symbol to the left of the LCD display, depending on the type of Beacon. The LCD display will scroll through a number of screens.

Switching a large beacon off

Depending on the type of Beacon, either press and hold the red button or place a magnet on the symbol to the left of the LCD display. Hold for a few seconds while the display counts down and scrolls through a number of screens. Release the red button/remove the magnet when the LCD display goes off.

Lanyard with a magnet

To switch the Beacon stations on or off.

Epsom Splits Printer

Prints out a 'receipt' showing the riders time and current position. It should be noted that the position on the bottom of the print out is only of those who have already downloaded so could well change as others download.



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Prior to the event

1. If you have not used SiTiming on your computer(s) before, make sure you install the software a week or so before the event to give yourself plenty of time to explore it's functionality. From the SPORTident downloads page (<https://www.sportident.co.uk/support/downloads.php>) also install:
 - a. **SPORTident Config+**, making sure you tick to install the **SPORTident USB-Driver** when asked
 - b. **Epson Driver for the TM series**, include the drivers for TM-88IV, TM-88V and TM-T90.
2. If you are going to connect two laptops together, for instance to connect a screen to one to display results, you need to make sure that they work together with SiTiming before the event. If networking, you will need to edit your firewall settings to allow port 1433 to accept incoming traffic.
3. Perform a tabletop run through of the event with the kit, computers and software to ensure that you understand how everything works to ensure race day runs smoothly.

At the event

Depending on whether you want the SIAC to be turned on when you hand it out at registration or not, there are two different processes to follow:

	SIAC is active when you hand it to rider	SIAC is inactive when you hand it to rider
Used when	Rider will be starting their competition run within the next few hours. <i>E.g. stages are run blind.</i>	After the rider has been given SIAC they may be doing practice runs while the beacons have been deployed, or SIAC is handed out a long time in advance (such as evening before). <i>E.g. if the stages are open for practice in the morning during which time riders can collect their SIAC.</i>
Registration process	<ol style="list-style-type: none"> 1. Dib SIAC in Clear station 2. Punch Registration with mode = Read SI-Cards. Tick Check SI-Cards Clear and Tick to Switch on SIACs 	<ol style="list-style-type: none"> 1. Dib SIAC in Clear station 2. Punch Registration with mode = Read SI-Cards. Tick Check SI-Cards Clear and Do Not Tick to Switch on SIACs
As riders start	<i>SIAC is already on</i>	Dib SIAC in SIAC On / Test station <i>If riders do not do this no times will be recorded!</i>



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Testing SIAC is working contactlessly <i>(must have marshal watching)</i>	Either: <ul style="list-style-type: none"> • Wave SIAC over a SIAC On / Test station after registration process, or • Competitors ride passed a 'Pre Start Test' beacon as they leave the arena 	Competitors ride passed a 'Pre Start Test' beacon as they leave the arena, after the SIAC has been activated
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At registration

You will be doing 'Punch Registration' which means that the SIAC (timing chip) is allocated to the rider when they come to register on the morning of the event. At a typical event the rider would arrive at registration to see a number of desks with a range of surnames. They would go to the desk for their surname and be given their race number and any other goodies. If you need the rider to physically sign anything then this is where it would be done. The rider would then be directed to the computer desk where they will receive their SIAC.

Any riders who own their own SIAC must bring it to registration so that it can be Cleared and Checked in the same way that hire cards are, otherwise the SIAC will not be turned on and will not record stage times.

1. Before registration begins, set up your computer and connect the Master Station / Mini-Reader. You can run registration on two or more laptops networked together, in which case they all need to be running off the same database on one of the laptops.
2. In SiTiming open your event and go to Entries >> Registration >> Punch Registration. Select the COM Port. Station Mode = Read SI-Cards. Tick to Check that the SIAC is Clear. Tick to Switch the SIAC on if appropriate (see table above).
3. When a rider comes along, take a SIAC from the box and **Clear the SIAC**.
4. Enter the rider's race number and Click 'Search' (or press Enter) and details of the rider will come up on screen. Click 'Select' (or press Enter). If the rider's details are wrong then check that the rider has been given the correct race number.
5. Dib the SIAC into the Master Station to allocate the SIAC to the participant. The software will check that the SIAC has been cleared and also that the battery is OK, you will get error messages if this is not the case.
6. If SIACs are being switched on the SIAC should then be waved over a **SIAC On / Test** station (not dipped) to check it has been turned on.
7. The rider should be told which wrist to attach the SIAC to. This will be the side on which the stage Start and Finish beacons will be located. **It is recommended that a GPS watch is not worn of the same wrist as the SIAC.**



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As the rider starts the course

If the SIACs were not switched on at registration riders can ride the stages as much as they like but no times will be recorded. This is great if riders are allowed to practice the stages while the Beacons are deployed, but you need to switch the SIACs on before they go out on their timed run by dinging into a SIAC On / Test station.

At some point between the SIAC being activated and the rider starting their race you need to confirm that it is working contactlessly. This can be done one of two ways:

1. Wave (not dipped) the SIAC over a SIAC On / Test station, either after the punch registration process if you used that to activate the card or as they start. The SIAC will beep/flash as it gets to within 30cm of the station – if it doesn't, ding the SIAC in the station, move it away until it stops beeping/flushing and then try again.
2. Get riders to cycle slowly past a Journey Start beacon or Pre Start Test beacon (depending on which you're using). You will have a marshal there watching as each rider passes to make sure their SIAC beeps and flashes. If the SIAC only flashes, that is fine and the SIAC can still be used, but if it doesn't beep or flash ask the rider to go back to registration to be given another SIAC. If the marshal misses the beep / flash there is no harm in getting the rider to go past the beacon again.

Out on the course

Always remember – Roll through the start, fly through the finish!

At the top of each stage you have a 'Stage Start' Beacon (BS11-BS-Blue). At most events this will be attached to an electric fencing post at about handle-bar height part way along a 1.5 metre wide channel (SPORTident can provide suitable stakes or holders). Before the first rider comes through the channel, the beacon needs to be switched on. This must be done on the morning of the event as it will switch off automatically after a pre-set amount of time (usually 12 hours).

At the bottom of each stage you have a 'Stage Finish' Beacon (BS11-BL), which again should be about handle-bar height at the edge of the trail and needs to be switched on that morning. The finish channel must be less than 3 metres wide.

The starts and finishes must be set up to ensure that no rider can get within 2 metres of a Start beacon or 4 metres of a Finish beacon until they pass through the start or finish channel.

As a rider rolls past the Stage Start beacon the time is recorded on the SIAC attached to their wrist and the rider will see their SIAC flash. At the bottom of the stage, the stage finish time is recorded when they fly by finish beacon.



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Beacons interact with each other so it is important that:

- BS11-BS-Blue must not be deployed within 3m of each other
- BS11-BL must not be deployed within 5m of each other
- Marshals setting up the Start or Finish of a stage MUST pass through the channel a few times with their test SIAC (switched on). The SIAC should be in approximately the same position as if it is on a rider's wrist. Marshal's SIAC must beep and flash on each test.

Failure to follow these guidelines is likely to result in timestamps not being written to the SIAC.

Downloading rider times

With SiTiming it is possible to download competitor's data from their SIAC at points throughout the day as well as at the finish. So, if the riders come back to the event centre for lunch, you can download their times and show the results for the morning. The event needs to be set up specifically in SiTiming to cater for multiple downloads so if SPORTident UK is setting up the software for you tell them you need this functionality in advance.

Whether you are downloading at the end or during the event this is done in Data Collection >> Downloads >> Download SI-Card. Select the Download Control Master depending on whether you are doing an Intermediate download or a Final download. Riders with only an Intermediate download will still be shown as outstanding in the Safety Check screens. For the final (or only) download of the day make sure you tick 'Ensure SIAC Switch Off' – otherwise the SIACs will stay on using power for the next 24 hours.

As you do not know who has finished until you have done a Final Download of their SIAC, it is important to make sure that riders don't get side tracked in the car park and forget to download and hand their SIAC in!

Ensure that beacons are switched off after a stage

When marshals return beacons to the event centre, ensure that they don't come into close contact with a rider who still has a switched on SIAC, otherwise spurious times will be added to the riders SIAC!

If the event includes stages on more than one day

For events where the timed stages are on different days, you will want to turn the SIACs off at the end of the day and use the SIAC On / Test station at the beginning of the next day.



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