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| --- | --- |
| *Use case name* | TimeParGrpEvent |
| *Participating actors* | Initiated by **User**  Communicates with **Racers** |
| *Flow of events* | 1. User connects sensors to channels 2. User arms channels 3. User enters NEWRUN 4. Set event type to PARGRP 5. User toggles state of Channel 1 to START 6. User toggles state of Channel 2 to *n* to FINISH 7. Channel 1 receives start event 8. User toggles Channel 1 to FINISH 9. If a Racer finishes the race 10. Racer triggers sensor 11. Sensor sends trigger to channel corresponding to Racer 12. Channel receives FINISH event from sensor 13. User enters ENDRUN 14. If the printer is turned on     1. Printer prints result times 15. If the printer is turned off     1. Event times are input into event log |
| *Alternate Flow* | 9a1. If a Racer had a false start  9a2. User sets CANCEL event code  9b1. If a Racer does not finish the race  9b2. User sets DNF event code |
| *Entry condition* | * ChronoTimer is powered on. * **Sensors** must be armed, corresponding to the number of Racers * Channels must be enabled, corresponding to the number of Racers |
| *Exit condition* | * Race results are stored in ChronoTimer machine event log and/or printed out |
| *Exceptions* | RacerDidNotFinish, RacerCancelled |
| *Quality requirements* |  |

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| --- | --- |
| *Use case name* | StartNewRun |
| *Participating actors* | Initiated by **User** |
| *Flow of events* | 1. User enters NEWRUN command 2. ChronoTimer clears race queue |
| *Alternate Flow* |  |
| *Entry condition* | * ChronoTimer is powered on. |
| *Exit condition* | * Race queue is cleared |
| *Exceptions* | What if |
| *Quality requirements* |  |

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| --- | --- |
| *Use case name* | RacerDidNotFinish |
| *Participating actors* | Initiated by **Racer**  Communicates with **User** |
| *Flow of events* | 1. A **Racer** does not finish the race. 2. The **User** inputs the DNF command into **ChronoTimer**. 3. **ChronoTimer** marks the **Racer**’s start as DNF and acknowledges that the next **Racer** to finish will not finish. |
| *Entry condition* | Extends any use case in which the **Racer** started a race |
| *Exit condition* | The **Racer**’s start is marked as DNF. |
| *Quality requirements* |  |

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| --- | --- |
| *Use case name* | RacerCancelled |
| *Participating actors* | Initiated by **Racer**  Communicates with **User** |
| *Flow of events* | 1. A **Racer** has an invalid start. 2. The **User** inputs the CANCEL command into **ChronoTimer**. 3. **ChronoTimer** marks the **Racer**’s start as CANCEL. |
| *Entry condition* | Extends any user case in which the **Racer** started a race, but the **Racer**’s start was invalid. |
| *Exit condition* | The **Racer**’s start is marked as CANCEL.  The **Racer** is still in queue to start. |
| *Quality requirements* |  |

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| --- | --- |
| *Use case name* | Time an individual race event with one start and n=1 individual finishes |
| *Participating actors* | Initiated by User/Operator  Communicates with Racers |
| *Flow of events* | 1. User connects sensors to channels 2. User arms channels 3. User enters NEWRUN 4. Set event type to PARGRP 5. User toggles state of Channel 1 to START 6. User toggles state of Channel 2 to FINISH 7. Channel 1 receives start event 8. User toggles Channel 2 to FINISH 9. If a Racer finishes the race 10. Racer triggers sensor 11. Channel receives FINISH event from sensor 12. User enters ENDRUN 13. If the printer is turned on     1. Printer prints result times 14. If the printer is turned off     1. Event times are input into event log |
| *Alternate Flow* | 9a1. If a Racer had a false start  9a2. User sets CANCEL event code  9b1. If Racer does not finish the race  9b2. User sets DNF event code |
| *Entry condition* | * The timer must be turned on. * 2 Sensors (gates/electric eye/pads) must be armed * Channels must be enabled, corresponding to the number of Racers |
| *Exit condition* | * Race results are stored in ChronoTimer machine event log and/or printed out |
| *Exceptions* | I/O exceptions |
| *Quality requirements* | Must be very excellent |