FastWatch: Sprint 0

Sports Timing Systems Research

Systems challenges:

- Management of hardware
- Wires over long distances
- Timing gates
    - May have inaccurate recording of time due to human arms and legs being in front of the center mass breaking the beam early at the start and finish line.
- Delay on signal (RFID)
    - interference with other devices that may be on the same frequency
    - limitation of bandwidth and RFID tags
- Unified start signals (referee vs timer)
- How many signals can it process?
- power management of the sensors
- (Freelap Timing) Tracks or field space are partially used up for the timing system and devices.
- Batteries etc. (notification on low battery)
    - Some used systems today are outdated with only household batteries
- Materials (weather conditions)
    - mats that can withstand from the rain, being run over by runners, bicyclist
- Ease of set up and not that time consuming.

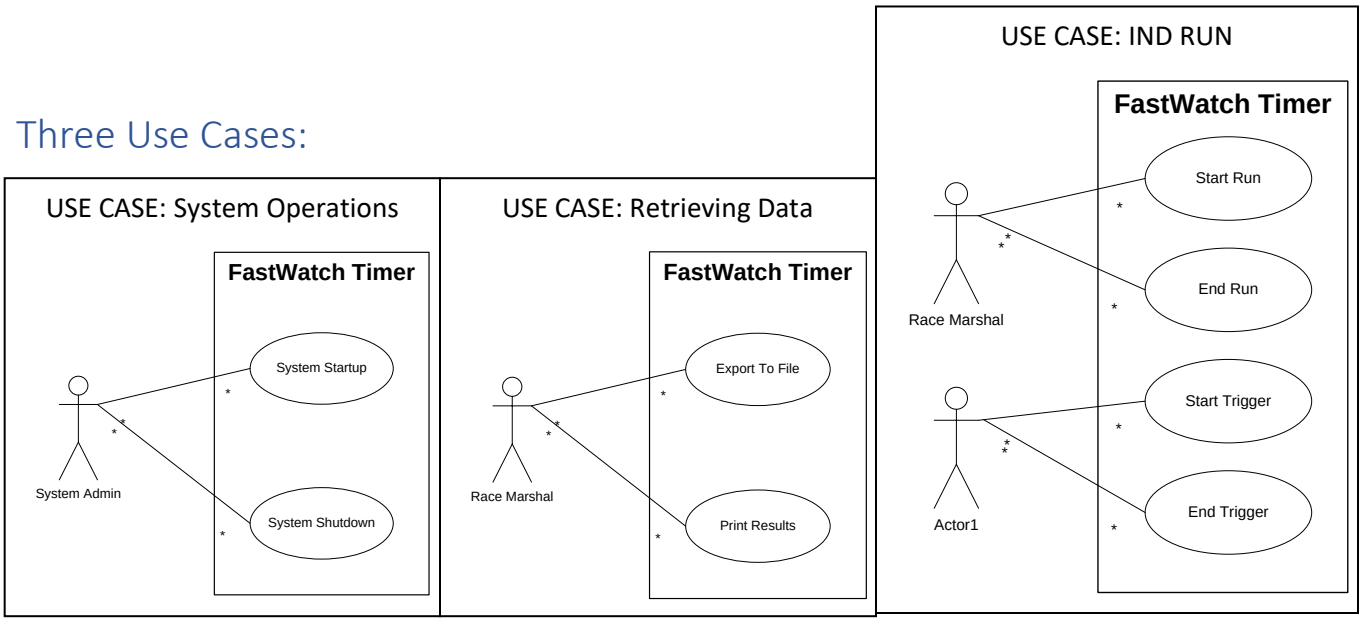
Challenges to consider:

- Sophisticated GUI
- Ease of use
    - Apps in smartphones, programs or system's GUI
- Software vs. mechanical switches.
- Timing system compatible to connect and communicate to other testing devices (beam, mat etc).

Common Attributes:

- Accurate and consistent
- Specifications for certain timing standards
- Sensor validity
- Print out (format of time)

Three Use Cases:



Stories:

Release 1: Simulator start, Simulator File Input, Simulator Console Input, Start, Stop, Reset, TIME(set time), TOG, CONN, DISC, NEWRUN, ENDRUN, START, FINISH, TRIG<NUM>, SWAP

Release 2: EVENT<Type>, multiple channels, export to file, display on console

Release 3: Group races (single start, series of single finishes), various displays, GUI

Release 4: Parallel Group Races (Swimming), send results to web server

Division of Labor:

Timing System:

Fue, Isaac, Phil

Simulator:

Andrew, Riley

Team Contributions

Riley – contribute to research on other systems, use cases, documentation of research, organizing stories

Phil- Contribute to generating question, created use case diagrams.

Fue – Contribute to research and documenting on various timing systems and the challenges the systems have.

Andrew – contribute to research and use case definitions.

Isaac – contribute to research and use case definitions.