Meet Maestro File System Integration

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1 Overview

This document specifies how to integrate with Meet Maestro via a file system based protocol.

Note that other (non-file system) protocols will be available in the future. Timeline TBD.

1.1 Protocol Version

This document defines protocol version **1.2.3**.

The protocol versioning adheres to [Semantic Versioning](#).

2 System Requirements

Timing system integrations are only supported via Meet Maestro's Windows application (not the web version). System requirements can be found [here](#).

3 Timing Vendor Requirements

Timing Vendor must provide:
- Logo(s). We prefer svg. They will need to look good in the following resolutions and backgrounds. Most vendors provide one file for each background.
  - 48x48 px on white background
  - 24x24 px on black background
- System title and very short description (3 to 8 words) for the timing system select interface
- Default data directory. This is the default directory to be used when first initializing the timing system. It can be overridden by the user but defaulting Meet Maestro and the timing system to the same directory is a nice convenience for the user.
- Test software and/or equipment
- Contact info for a technical liaison
- Customer support contact information (hours of operation, expected response times, etc)

4 File Structure

The integration point is a single directory in the file system which is accessible to the Meet Maestro application. This can be a folder on the local hard drive or a shared network folder.

The integration content consists of 4 file types. Below is an example folder structure. Two file types are created by the timing system (session_*_event_*_heat_*_race_*.json and timing_system_configuration.json) and two are created by Meet Maestro (meet_details.json and session_summary.csv).

meet_details.json	JSON Document
session_1_event_1_heat_1_race_1.json	JSON Document
session_summary.csv	CSV Document
timing_system_configuration.json	JSON Document

5 Timing System Files

The following files will be written by the timing system.

5.1 Timing System Configuration

5.1.1 File Name
timing_system_configuration.json

5.1.2 Purpose
This file should be written by the timing system at two points in time: (a) after starting a new meet or (b) at the boundary of a new heat. The boundary of a new heat can be considered as the point at which the timing system operator advances to the next heat or when the starter starts the heat. Most timing systems choose the point of advancement.

Meet Maestro monitors this file and uses it to update the current event/heat which is shared with the SwimTopia Mobile App.

5.1.3 Example Contents

```
 1 {
 2    "currentEvent": "2A",
 3    "currentHeat": 2,
 4    "currentSessionNumber": 1,
 5    "currentRaceNumber": 3,
 6    "protocolVersion": "1.0.0",
 7    "timingSystemType": "special-timing-system-name",
 8    "timingSystemVersion": "1.0.2",
 9    "updatedAt": "2021-07-14T12:51:50.589"
10 }
```

5.1.4 Fields
- **currentEvent** - Alphanumeric - Examples: 1, 11, 1A, 1B
- **currentHeat** - Integer
- **currentSessionNumber** - Integer - Timing system software *must* ensure that each session, and therefore each meet, use a unique integer identifier for a given directory. This allows race data files from multiple sessions/meets to coexist in the same directory.
- **currentRaceNumber** - Integer - 1 indexed, auto incrementing race number. This allows having multiple race data files for a given session/event/heat. Because race data files should be immutable, this provides a mechanism for the timing system to provide 'corrected' results for a given heat.
- **protocolVersion** - String - The Meet Maestro file system integration protocol version number.
- **timingSystemType** - String - an identifier of the timing system agreed up between SwimTopia and the timing system vendor
- **timingSystemVersion** - String - Semver value is preferred.
- **updatedAt** - ISO 8601 Date and Time String - Timing system software *must* update this everytime the file is written.

- **timersPerLaneCount** - Integer - Optional value from 1-3 to represent the number of watches/timers per lane.

5.2 Race Data

These files should be immutable (write once, never change)

5.2.1 Purpose
One file per race. Communicates timer data to Meet Maestro. Can optionally communicate no-shows and DQ's.

5.2.2 File Name Examples
session_1_event_1A_heat_1_race_1.json
session_1_event_2_heat_1_race_2.json
session_1_event_2_heat_1_race_3.json
session_1_event_2_heat_1_race_3_5.json
session_1_event_2_heat_1_race_3_101.json

5.2.3 File Name Segments
- session_1_ - Session number should be an integer. Incrementing this value allows storing race data for multiple sessions / meets in the same directory
- event_1A_ - Event number should be integer or alphanumeric. It should match the Event Number provided by Maestro via the Session Summary or Meet Details files.
- heat_1_ - Heat number should be an integer.
- race_1 - Race number should be an incrementing, 1-indexed integer for each session. Incrementing this number without changing the session/event/heat numbers allows providing corrected results for a given heat.
- [OPTIONAL] The final number (in the last two examples above) is a version number for the race. It is optional and should be an increasing, not necessarily contiguous, number. If detected, Meet Maestro will use only the largest version detected when loading times. This number is not present in the Meet Maestro UI and therefore should only be used when the user does not need to be aware of the versions. If the user needs to be aware, increment the race number.

5.2.4 Session Number (Session Identifier)
This value is a session identifier that is used by Maestro to decide which set of files from which to load results.

Maestro will, by default, choose to load results from the session number specified by *currentSessionNumber* in *timing_system_configuration.json*.

The user has the option to override this via the Timing Setup Form. See the picture below.

Timing Setup (This Computer Only)

Session 1 — Home Meet (no alpha)

Wylas Timing

Data directory

/Users/cbonser/Desktop/generic_file_system_integration

CHANGE DIRECTORY

Session Number

Timing system is exporting to session #1.
Currently importing from session #1.

Session Number Options

○ Set #1 — 08/05/2021 (5 races)

○ Set #2 — 08/05/2021 (1 races)

○ Set #3 — 08/05/2021 (1 races)

○ Set #4 — 08/05/2021 (1 races)

CHECK FOR NEW FILES

Expected Number of Watches per Lane

3 ▾ Display warnings if fewer watches are imported

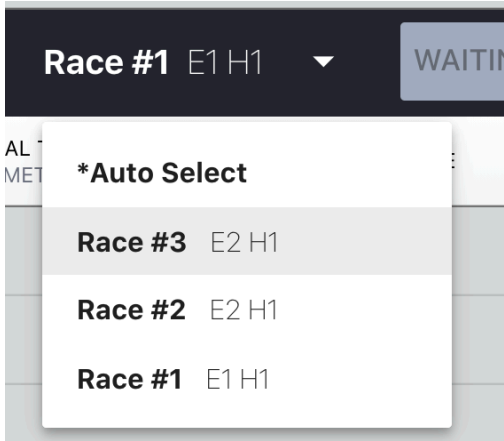☐ Publish current event & heat to SwimTopia Mobile App

CANCEL   SAVE

Importing Into Meet Maestro

Meet Maestro will automatically suggest the highest race number for a given event and heat to import. The user can override and select any race number they want.

Race #1 E1 H1 ▾   WAITI

AL
MET   ***Auto Select**

Race #3 E2 H1

Race #2 E2 H1

Race #1 E1 H1

5.2.5 Example File Contents

```json
{
  "createdAt": "2021-07-14T12:51:50.567",
  "protocolVersion": "1.1.0",
  "lanes": [
    {
      "lane": 1,
      "padTime": "57.08",
      "timer1": "57.00",
      "timer2": "57.22",
      "timer3": "57.11",
      "isEmpty": false,
      "isDq": false
    },
    {
      "lane": 2,
      "padTime": "57.08",
      "timer1": "57.00",
      "timer2": "57.22",
      "timer3": "57.11",
      "isEmpty": true,
      "isDq": false,
      "splits": [
        {
          "distance": 25,
          "reactionTime": "0.34",
          "time": "13.15"
        },
        {
          "distance": 50,
          "time": "28.00"
        },
        {
          "distance": 75,
          "time": "44.02"
        },
        {
          "distance": 100,
          "time": "1:44.02"
        }
      ]
    },
```

5.2.6 Fields

- **createdAt** - ISO 8601 Date and Time String - Time the file is created.
- **protocolVersion** - String - The Meet Maestro file system integration protocol version number.
- **lanes** - Array of lane data
    - **lane** - integer - Lane number
    - **padTime** - String (optional) - Race time in hours, minutes, seconds, thousandths. This field should only be used for timing systems with automated (electric) 'touchpad' timing devices. Do

<u>not</u> use this field to provide a calculated time. Meet Maestro provides extensive configurations for computing an official time based on timers 1-3.

- ○ **timer1/timer2/timer3** - String (optional) - Race time in hours, minutes, seconds, thousandths. It is valid to have 'null' in some or all of these fields. When all timer fields and the padTime are null the lane will be treated as empty regardless of the state of isEmpty.
- ○ **isEmpty** - Boolean - Optional. Timing system reported No Show.
- ○ **isDq** - Boolean - Optional. Timing system reported DQ. Meet Maestro provides robust DQ reporting capabilities and we recommend users use Meet Maestro for managing disqualifications.
- ○ **Splits** (optional)
  - ■ **distance** - integer - <u>Cumulative</u> distance
  - ■ **reactionTime** - String - Race time in hours, minutes, seconds, thousandths. Optional.
  - ■ **time** - String - Race time in hours, minutes, seconds, thousandths. <u>Cumulative</u> time.

5.2.7 Special Notes on Splits

Splits should be written using cumulative distance and time values. Maestro computes the final split so that it remains consistent with the official time. Therefore if a split matching the cumulative distance of the race is provided, it will be ignored.

It is acceptable to be missing a split in the sequence. For example it is acceptable for the 50 split to be missing in a 100 event because of no-touch or a light touch.

6 Meet Maestro Files

6.1 Session Summary

6.1.1 File Name
session_summary.csv

6.1.2 Purpose
Provides a terse summary of the event schedule with heat count.

This file will be rewritten by Meet Maestro any time events or heats are added or removed from the session schedule. Switching between sessions will also cause the file to be rewritten.

6.1.3 Example Contents
```
1A,Girls 9-10 100m IM,3,1,F
1B,Girls 11-12 100m IM,0,1,F
1C,Girls 13-14 100m IM,0,1,F
1D,Women 15-18 100m IM,0,1,F
2A,Boys 9-10 100m IM,6,1,F
2B,Boys 11-12 100m IM,0,1,F
2C,Boys 13-14 100m IM,0,1,F
2D,Men 15-18 100m IM,0,1,F
3,Girls 6&U 100m Free Relay,1,1,F
4,Boys 6&U 100m Free Relay,1,1,F
5,Girls 7-8 100m Free Relay,1,1,F
6,Boys 7-8 100m Free Relay,0,1,F
7,Girls 9-10 100m Free Relay,0,1,F
8,Boys 9-10 100m Free Relay,0,1,F
9A,Girls 11-12 200m Free Relay,0,1,F
9B,Girls 13-14 200m Free Relay,0,1,F
```

6.1.4 Fields
1. **Event Number** - Alphanumeric
2. **Event Description** - String
3. **Heat Count** - Integer - Number of heats in this event. Zero is a valid value.
4. **Unused**
5. **Round Code** - String - Prelims (P), Finals (F)

6.2 Meet Details

6.2.1 File Name
meet_details.json

6.2.2 Purpose

Provides a dense set of details about the meet including sessions, events, records, time standards, and athlete lane assignments. This file is intended to be consumed by timing systems with scoreboards.

This file is only written when pressing 'Write Configuration File' in the timing system configuration form in Meet Maestro.

6.2.3 Example Contents
Request a sample from SwimTopia

6.2.4 Structure
The file is saved in a human readable JSON format.

The root object contains:
- Meet fields (see section 6.2.5.1)
- meetEvents - All events in the exported session
- meetSessions - The configured session for this timing system. Includes nested data for each race.

6.2.5 Fields
6.2.5.1 General Notes
- Assume all dates and times, unless otherwise specified, are in local time zone
- All "xyzTimeInt" fields are in hundredths of seconds

6.2.5.2 Meet
Meet data (root object) includes:
- meetEndDate - ISO 8601 Date
- meetStartDate - ISO 8601 Date
- meetHostTeamName
- meetName
- meetProgramDate - Timestamp when this file was written
- meetCourseCode - One of Y, S, L.
  - Y - short course yards
  - S - short course meters
  - L - long course meters

6.2.5.3 Events
General Notes:
- It is generally better to use one of the label fields over the eventStrokeCode as Meet Maestro will support custom race names in the future (see stroke code 99 in Appendix 1).

Fields:
- eventNumber
- eventLabel
- eventShortLabel
- eventFullLabel

- eventDistance
- eventSwimCourseCode - See [Appendix 2](#)
- eventPoolLength
- eventGender - See [Appendix 3](#)
- eventMinAge
- eventMaxAge
- eventIsRelay
- eventDescription
- eventRecords
- eventStandards
- eventStrokeCode - See [Appendix 1](#)

6.2.5.4 Sessions

- sessionId
- sessionNumber
- sessionDate - DEPRECATED
  - Will be removed in Protocol Version 2.0.0
  - In version 1.x it looks like an ISO 8601 Time but only the hours and minutes are accurate and it includes no timezone information.
- sessionBeginAt - ISO 8601 Time (UTC)

Appendix 1: Stroke Code Enum

1: Freestyle
2: Backstroke
3: Breaststroke
4: Butterfly
5: Individual Medley
6: Freestyle Relay
7: Medley Relay
12: Backstroke Relay
13: Breaststroke Relay
14: Butterfly Relay
21: 1 Meter Diving
22: 3 Meter Diving
23: Platform Diving
99: Custom

Appendix 2: Course Codes

Y: SCY (Short Course Yards)
S: SCM (Short Course Meters)
L: LCM (Long Course Meters)

Appendix 3: Gender Codes

F: Female
M: Male
X: Mixed

Document Changelog

Version 1.2.3 - July 2024

- Added timersPerLaneCount to Timing System Configuration fields.

Version 1.2.2

- Write the meet_details.json file in a human readable format.

Version 1.2.1

- Updates to the Meet Details:
    - Add meetCourseCode

Version 1.2.0

- Updates to the Meet Details:
    - Added 'sessionId' to the session object
    - Added 'sessionBeginAt' to the session object
    - Added 'strokeCode' to the event object
- Added an optional version number to the race data file name see Section 5.2.3
- Added field level documentation to section 6.2
- Added Appendix 1
- Added Appendix 2
- Added Appendix 3

Version 1.1.1

- Added section numbers to the document headers
- Added section 5.2.4 'Session Number' to highlight how session numbers are used in Maestro