

Electronic Timing & In-Water Finishing - By Bob Kolonkowski - Metro LMSC, USMS Long Distance

Why It Matters

Electronic timing gives you an objective, repeatable order of finish, and — combined with a reliable check-in/check-out process — lets you know exactly who is in the water at every moment. Getting the in-water finish right is what makes that possible for straightaway open water courses.

USMS Rules You Need to Know

- **Rule 303.7.4 — Backup is mandatory.** If you use electronic timing, USMS requires an independently operating backup timing and judging system — no exceptions.
- **Rule 303.7.1A — What counts as “finished.”** In an in-water finish, the swim officially ends the instant a swimmer touches the vertical finish surface or crosses the finish line — not when they exit the water.
- **Rule 303.6.3 / 303.7.2 — Straightaway courses.** Straightaway courses must use a stationary in-water start and an in-water finish, rather than a run-up finish on land.

Land Finish vs. In-Water Finish

Land finish: the swimmer exits the water and crosses a mat or line on dry ground. Timing equipment is simpler, but order can still shift during the run-in, and it doesn't satisfy the in-water finish requirement for straightaway courses.

In-water finish: the swimmer touches a pad, buoy, or wall without exiting the water. This is the required approach for straightaway courses, and it concentrates every finisher on a single touch point — so plan the hardware and the crowd-flow together.

How In-Water Electronic Timing Works

- **1. Wrist transponder.** Each swimmer wears a waterproof RFID transponder on the wrist — reusable or single-use.
- **2. Floating antenna array.** A floating gantry with side-mounted antennas reads the tag as the wrist passes over or through the finish zone, following FINA-style touch-timing conventions.
- **3. Time locked at touch.** The antenna read — or the independent backup, if a read is missed — sets the official finish time and order.

A single well-placed antenna array can cover an entire finish zone, which is what keeps in-water electronic timing workable even for mid-size open water events.

Choosing a Timing Technology

Method	Best For	Trade-off
Wrist RFID / chip	Most open water events, any size	Accurate, works in-water, moderate cost
Cable / touchpad	Pool-style or fixed finish lines	Very precise, less flexible in open water
GPS tracking	Long-distance, point-to-point swims	Tracks the whole course, highest per-swimmer cost
Visual + checklist	Small local events, and every event's backup	Low cost; required regardless of primary system

The Backup Requirement

Whatever primary system you choose, Rule 303.7.4 requires an independent backup. If the primary system misses a read, the backup sets the official time and order — never leave a result ambiguous.

A Simple, Zero-Cost Backup: Popsicle Sticks + iPad

- **1. Finish chute.** Swimmers exit the water and funnel single-file down a narrow lane on land.
- **2. Numbered popsicle sticks.** A “chute captain” hands each swimmer a numbered popsicle stick in order — place is locked in instantly, with nothing electronic to fail.
- **3. iPad entry.** A volunteer reads the sticks back in order and types place and bib number into an iPad spreadsheet or free results app for near-instant results.

Total cost: a box of popsicle sticks, a marker, and an iPad you already own — and it satisfies the independent backup Rule 303.7.4 requires, or can serve as the whole system for a very small race. To Enhance: Webscorer.com is a timing system at a very low cost to use in conjunction with a IPAD. (\$60 per year for subscription - unlimited racers)