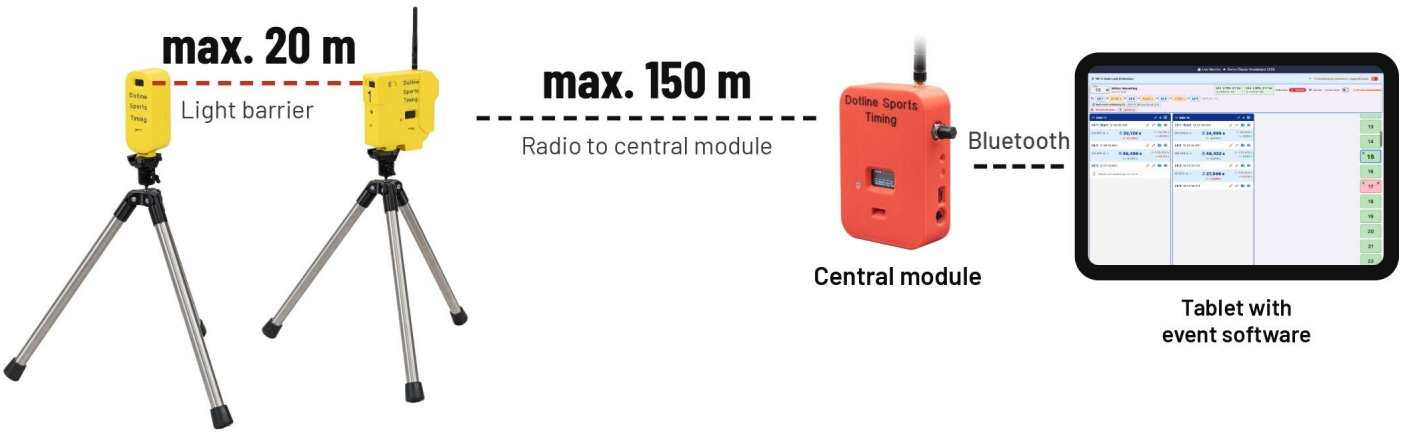
GPS LIGHT BARRIER SYSTEM **COMPETITION**

# Timing for your event. Wireless. GPS-synchronised.

Each light barrier carries its own GPS-synchronised clock and records the time right at the timing point. Start, splits and finish need no cable connection: the times travel by radio to the central module and via Bluetooth to the race control tablet.




**1 µs**
resolution of time capture in the timing module

**20 m**
maximum distance between light barrier and counterpart

**150 m**
radio radius around the central module, course max. 300 m diameter

**6**
timing points per central module: start, splits, finish

**64**
times buffered in the central module during tablet dropouts

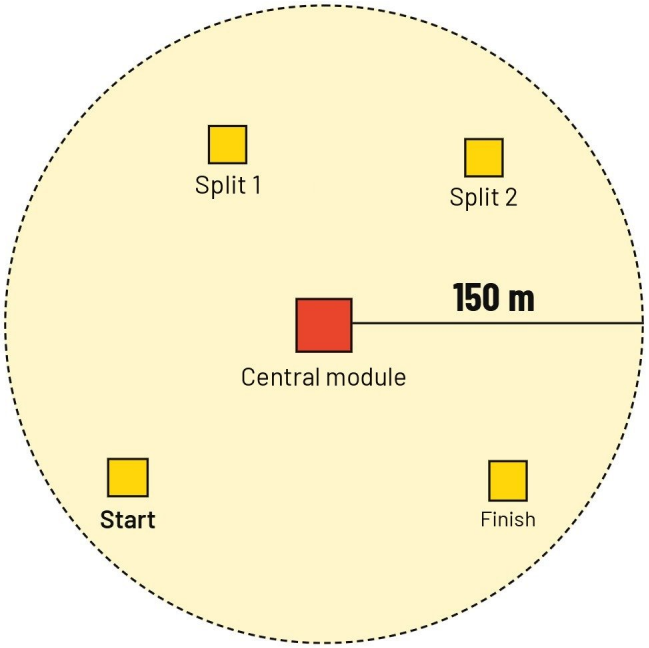
## How a time is created

### 01 Measure
The light barrier or hose triggers. The timing module records the moment with its GPS-synchronised clock.

### 02 Collect
The central module receives the times from up to six timing modules by radio and confirms each one individually.

### 03 Evaluate
Via Bluetooth, the times go live to the tablet with the event software.

# One system for the entire course




**max. 300 m diameter**

Each timing module may be max. 150 m from the central module. With the central module in the middle, one system covers a course of max. 300 m diameter.

- **Max. six timing points** for start, splits and finish, using light barrier and pressure hose modules.
- **No cable between timing points:** each one measures with its own GPS-synchronised clock.
- **One central module** collects all times and forwards them via Bluetooth to the tablet.

# Built for competition

## No time gets lost

Every time gets a sequential number and is acknowledged. Without acknowledgement it is sent again; gaps in the sequence remain visible.

## Timing with reliable GPS time

The timing module shows when GPS synchronisation is established. The GPS status at the moment of triggering is stored with every time.

## Several systems side by side

Group ID 1–255 and a selectable radio channel 1–13 separate systems running in parallel at the same location.

## Filtering out interference

A minimum trigger duration filters out brief interference such as insects or birds; a lockout time prevents double triggering.

## See failures immediately

If the central module loses a timing module, it shows this, warns with a beep and saves an error log.

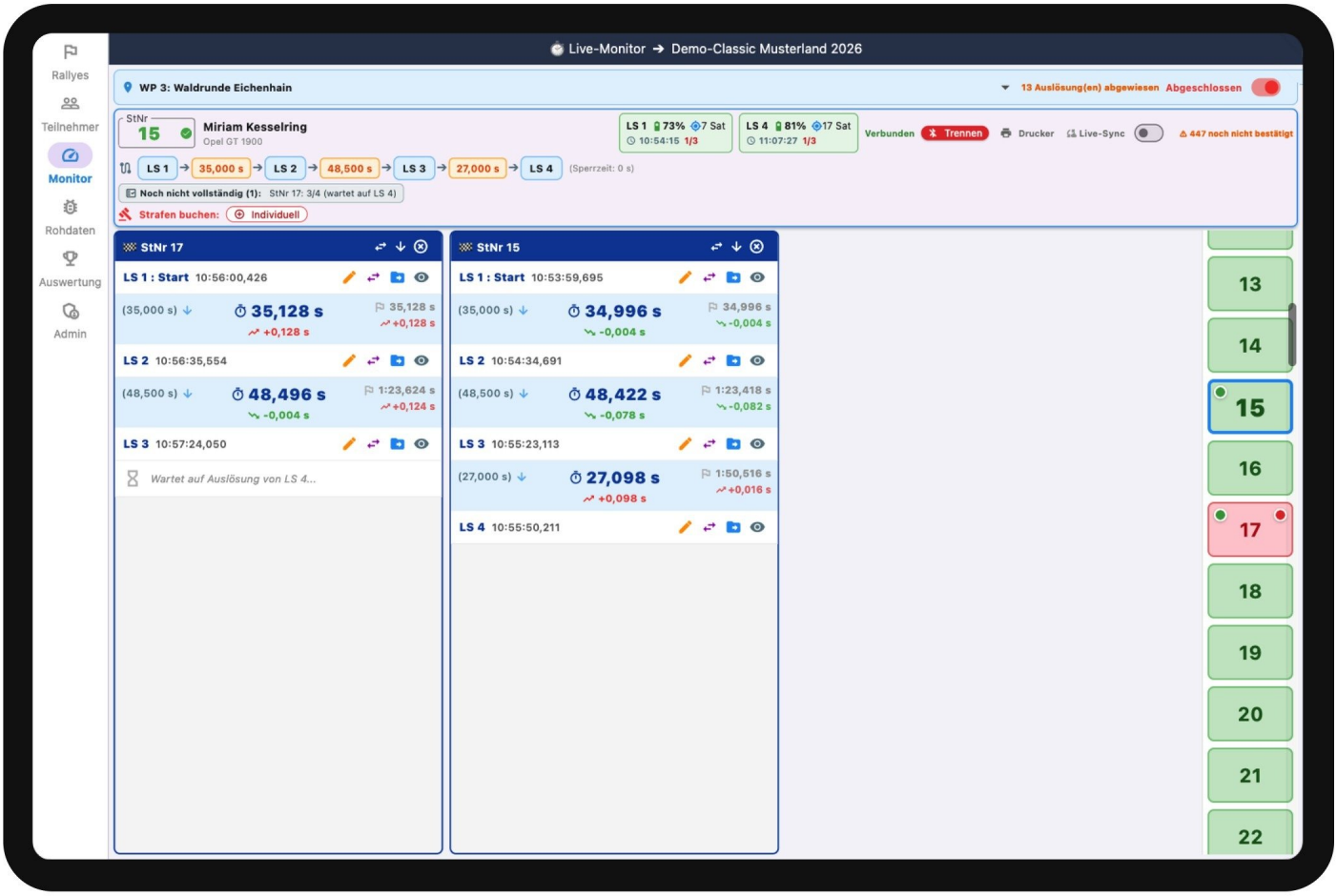
## Quick alignment

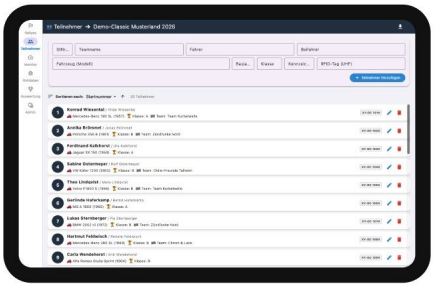
In alignment mode, the timing module reports via display and beep whether the beam is clear. In operation, it warns if the light barrier is blocked.

**Applications** Motorsport: slalom, circuit, hill climb or classic car events with exact timing and results.

# DST-COMPETITION
# The event at a glance – on the tablet

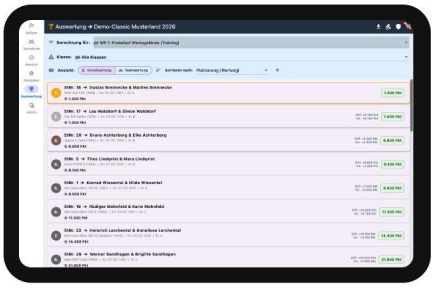
The central module transmits all times live via Bluetooth to the tablet. Every trigger appears instantly in the live monitor – with split time and deviation from the target time, assigned to the start number by the timekeeper.



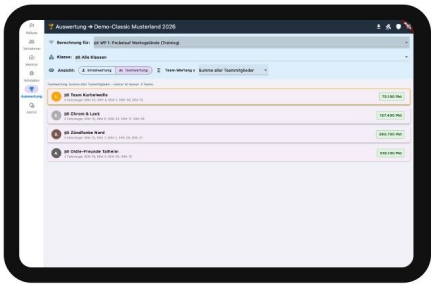
## Participants

Record start number, driver, co-driver, vehicle, class and team, optionally with an RFID tag.



## Individual ranking

Ranking per special stage with points and gaps, filterable by class.



## Team ranking

Teams are scored together, for example as the sum of all team members.

# The modules

All modules are preconfigured on delivery.

TIMING MODULE · YELLOW

## Light barrier module

Light barrier with counterpart, max. 20 m apart. An alignment mode with beep helps with setup.

TIMING MODULE · YELLOW

## Pressure hose module

Same time capture, triggered by a hose laid across the course.

CENTRAL UNIT · RED

## Central module

Receives the times of all timing modules by radio and forwards them via Bluetooth to the tablet.

# Transport

Modules in a case with foam insert, tripods in the carry bag.

**Scope of delivery:** case with 2 light barriers incl. emitters, central module, double batteries, tripods with sturdy bag

# Technical data

| | |
|---|---|
| **Time base** | GNSS/PPS-synchronised clock in every timing module |
| **Time resolution** | 1 µs, hardware capture * |
| **Light barrier** | Distance max. 20 m |
| **Radio range** | max. 150 m radius around the central module, i.e. max. 300 m diameter |
| **Timing modules** | max. 6 per central module |
| **Radio** | WiFi to the central module (channels 1–13), Bluetooth Low Energy to the tablet |
| **Transmission** | acknowledged, with retries; buffer: 5 times (timing module), 64 (central module) |
| **Parallel operation** | Group ID 1–255 separates systems at one location |
| **Interference filter** | Minimum trigger duration 0–5000 ms, lockout after triggering 0–10000 ms |
| **Operation** | OLED display, rotary switch, beep |
| **Power supply** | Battery, charging via USB-C |

* Resolution of the digital capture. The achievable accuracy of the overall system depends on GPS reception, light barrier and setup, among other things. Timing modules need a clear view of the sky.

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