Interval - Definition

High interval
- Long time between shots, less images per time unit

Low interval
- Short time between shots, many images per time unit

Setting up Exposure

Problem
- Exposure needs to be adjusted during timelapse recording as lighting conditions change

Solution
- Adjusting the exposure time manually in the camera

  -> Mainly has to be done during sunrise and sunset

- In postprocessing, exposure jumps have to be compensated by software (see the card : "Software")

Setting up the Interval

Problem
- Interval must also be increased to allow for longer exposure times at night

- The interval should be shortened at sunset and sunrise. This will cause the highlights of your shot to take up more time in the final video.

Solution
- Interval -Ramping (either manually or with SmartTimer: *www.onnoa.de*)

  -> increases the interval during day to night transitions

  -> decreases the interval during night to day transitions

Example day to night transition

Day

We start with a medium interval, which is adjusted to the pace we want the time to pass in the final video. An interval of 10-20s is useful here.


Sunset

We could leave the interval the same, but ideally we would lower it to 5s to focus on the sunset. As a result, this part will pass more slowly than the rest of the video and creates a "wow" effect.

Night

The goal for the interval in the dark is to allow for exposure times to be as long as possible to capture as much light as we can.

Restriction: Time to next image
-> therefore set interval as high as possible (recommended 30-40s)
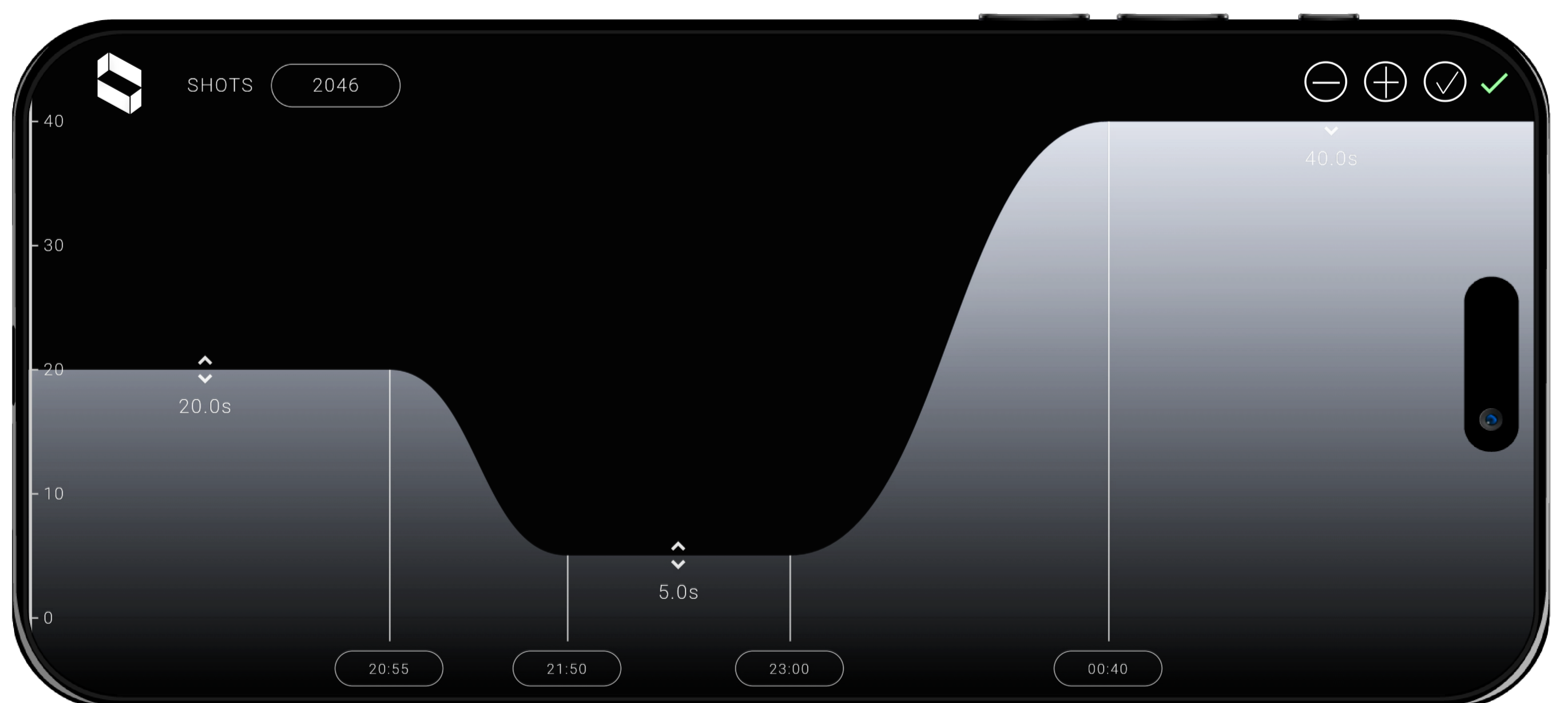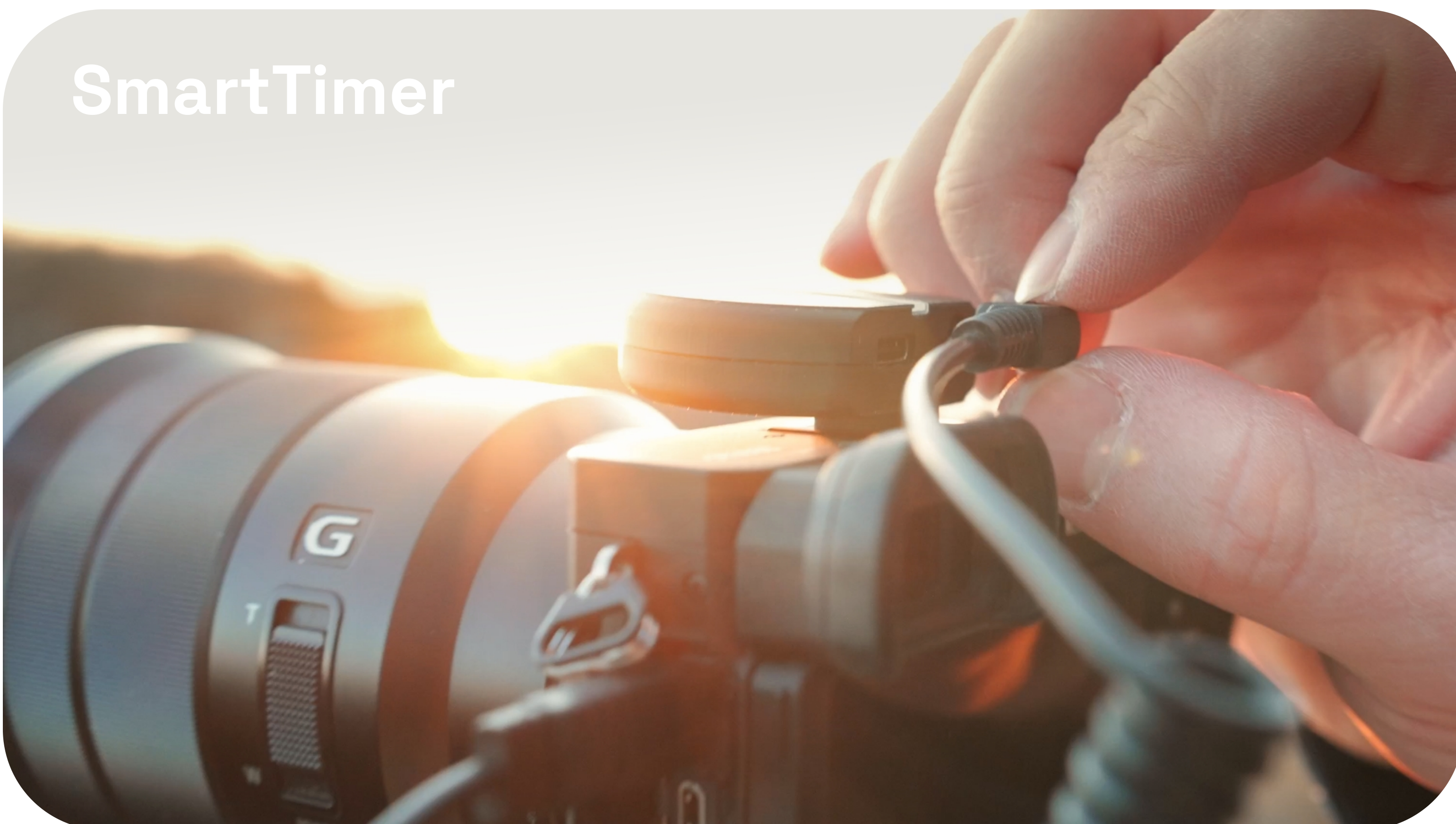

Ramping Curve (SmartTimer App)

Software

- A software for exposure compensation is LR- Timelapse (from $119 or free trail version + Lightroom license). There are no real alternatives that allow color correction of the images and compensation of larger exposure jumps.

- Still worth mentioning are Flicker Free ($149 - plugin for After Effects) or DaVinci Resolve ($295.00, free version available) with a deflicker effect. The last two options do not offer any - individual - processing of the RAW images and unfortunately only compensate for minor exposure jumps but work great in addition to lrtimelapse.

- Of course, it is still possible to edit time-lapses that have lower exposure jumps. Davinci Resolve is also an insanely comprehensive tool for color grading.

SmartTimer

Other intervals

- Sun/ Moon (clear sky): 20-30
- Stars: 20-60s
- Sun or moon rise and set: 1-5s
- Fast moving clouds: 2s
- Slow moving clouds: 20s
- Rainbow: 1s
- Moving shadows: 15-25s
- Thunderstorm: 1-5s
- Growing plants: 10-20min
- Crowd of people: 1s
- Traffic: 1-2s
- Building construction: 4-8h
- Self portrait over 10 years: 2 days
- Tide: 30s

Tip for filters

- Do not add or remove filters during the timelapse, as this usually results in strong color shifts and different vignetting, which can hardly be corrected in post-processing.

- If you can't avoid it, use good non-adjustable ND filters as they usually have higher color accuracy and less vignetting, or use a variable filter without taking it off.

Stars

- If stars are captured do not expose for too long. Prevent stars from becoming trails due to the earth's rotation.

- Calculate the maximum exposure time without blurring stars here: *calculator* or with the PhotoPills App. The maximum shutter speed depends among other things on the focal length of the lens.

- -> It is recommended to use a wide-angle lens for star images (the wider the angle, the longer you can expose). The exposure time should be about 20 seconds.

- -> Another possibility is the use of start trackers, which compensate the earth rotation and allow longer exposure times ($400-$1200)

- -> Note, however, that the foreground will be blurred when using star trackers.

Conclusion

- With exposure and interval ramping holy grail timelapses can be realized. This takes some practice and appropriate software to compensate for the exposure jumps, but the results will be stunning.