IANA Time Zones vs. Fixed UTC Offsets

> A time zone is a place's ongoing set of clock rules, not a fixed number of hours from UTC, and treating it as one causes calculations to silently break every time a DST rule changes.

Writing a meeting time as "UTC-5" looks precise, but it only describes one moment's offset, not an ongoing rule. An IANA time zone identifier such as America/New_York instead names a place and defers to that place's actual current and historical clock-change rules, including daylight saving transitions and any government-mandated changes to the rules themselves. The two are not interchangeable: a fixed offset silently goes stale the moment the real-world rule it was copied from changes.

Fixed offset "UTC-5," year-round

Constant, never adjusts

America/New_York, year-round

UTC-5 (winter)

UTC-4 (summer, DST)

A meeting fixed at "UTC-5" quietly becomes wrong by an hour every summer for a N

A fixed offset never changes; an IANA zone identifier shifts automatically whenever the place it names changes its clocks.

Why "just use the offset" fails for anything recurring or future-dated

A fixed offset is accurate only for the specific instant it was captured at. Scheduling a recurring meeting, a future deadline, or any date more than a few months out using a fixed offset silently produces the wrong local time the moment a DST transition (or a government rule change) occurs between now and then, because the offset never updates itself. An IANA identifier avoids this by always deferring to the named place's current rules at calculation time.

What the IANA identifier actually encodes

A name like Europe/Berlin or Asia/Kolkata is not a country code or a city's literal coordinates. It is a pointer into a maintained historical and ongoing rule table for a representative location, covering every offset and DST change that location has used and will use going forward, kept current by the IANA Time Zone Database that browsers and most modern software rely on. Two places sharing the

same current offset can still need different identifiers if their historical rules or future DST calendars differ.

Where WhenMath uses this distinction

Every time-zone engine on WhenMath (the converter, world meeting planner, and related tools) accepts a real IANA zone identifier through the browser's own live zone list rather than a fixed offset, specifically so a recurring or future-dated result stays correct across any DST transition between now and the target date.

> **Key takeaway.** Use a named IANA time zone, not a fixed UTC offset, for anything recurring or dated more than a few months into the future. A fixed offset is only ever accurate for the single instant it was recorded at.

Frequently asked

When is a fixed offset actually fine to use?

For a single already-happened or very-near-term instant where no DST transition can occur between now and the moment in question, a fixed offset and the correct IANA zone give the same answer. The risk only appears for recurring events or dates far enough out to cross a transition.

Why do some abbreviations like EST or CET feel ambiguous?

Abbreviations are not globally unique (several unrelated zones reuse the same three letters) and do not encode DST behavior on their own, which is exactly why they are unreliable for calculation. The Time Zone Abbreviation Resolver exists specifically to map an abbreviation back to its underlying real zone.

Does the IANA database ever change?

Yes, whenever a government changes its DST policy or its offset. Software that keeps its zone data current (as browsers generally do) reflects updates automatically, while software using a hardcoded offset table does not.

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