

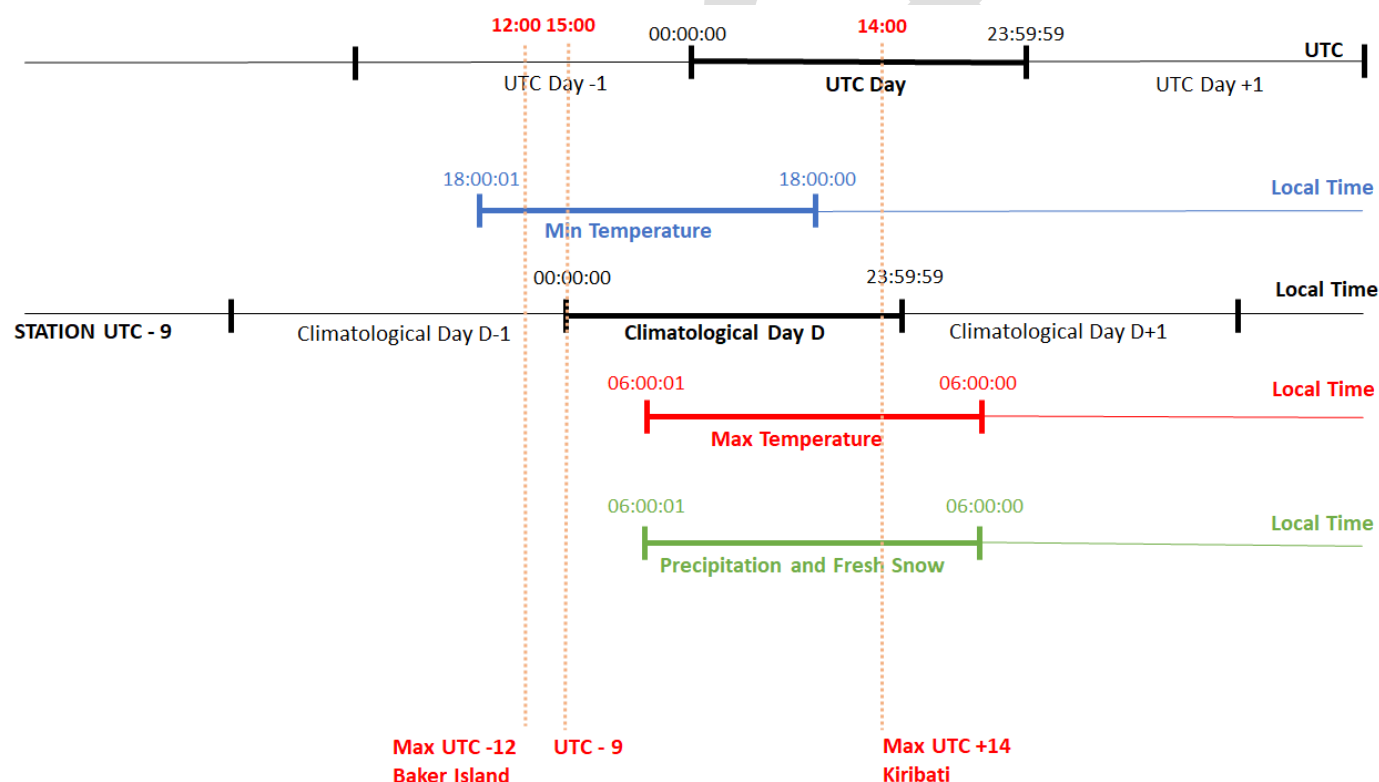
DAYCLI -

Let's take this example: a station has its climatological day defined from 00:00 to 23:59 in its Local Time (LT) which differs from **-9 hours from UTC** without daylight-saving time.

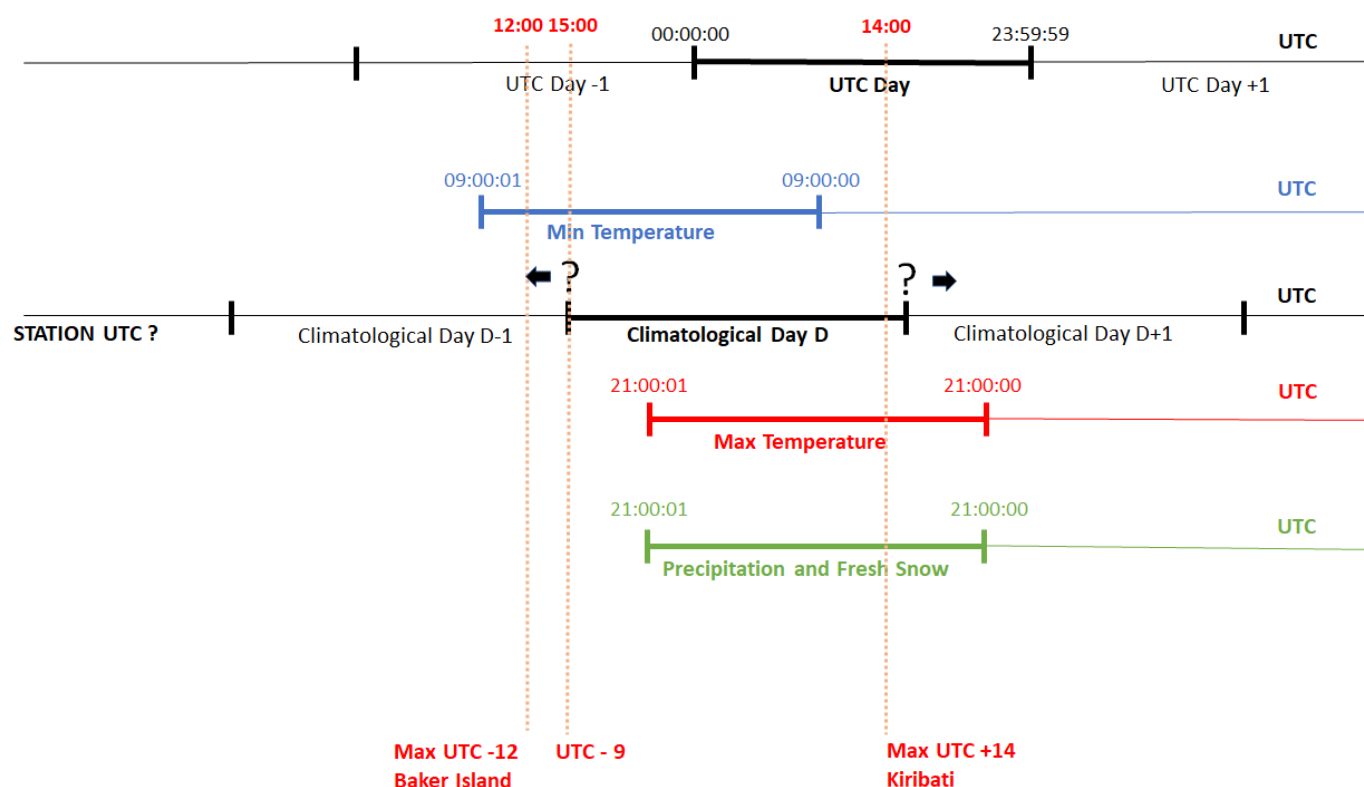
Its daily Minimum Temperature is measured from 18:00:01 LT of the day before the assigned climatological day (D-1) to 18:00:00 LT of the assigned climatological day (D).

Its daily Maximum Temperature is measured from 06:00:01 LT of the assigned climatological day (D) to 06:00:00 LT of the assigned climatological day (D+1).

Its daily precipitation and fresh snow are measured from 06:00:01 LT of its assigned climatological day (D) to 06:00:00 LT of the following day (D+1)



Coding this situation into a DAYCLI report will consist in converting all parameter local times into UTC, except the Climatological Day where the information of the **time difference with UTC (UTC -9)** will be lost because it is not considered in the BUFR template.



Another problem is the coding of the offset that indicates if the starting time of the concerned time period of the variable belongs to the previous climatological day or the assigned climatological day; respectively -1 or 0.

In our example, we will have for the Max Temperature:

- an offset = 0, if we use the local time (the Max Temperature time slot starts at 06:00:01 LT am of the assigned climatological day).
- an offset = -1, if we use UTC (the Max Temperature time slot starts at 21:00:01 LT pm of the previous climatological day).

Using UTC may also lead to have an offset of -2 if we take some extreme cases at UTC -12 and Min Temperature at 11:00:01 LT the day before!

Conclusion

The current coding is confusing and will be a source of error for NMHSs. In my understanding, crucial information is missing such as (1) the time difference of the climatological day from UTC and (2) the description of the daylight-saving time, if there is one. The complexity of the message is entirely the responsibility of the NMHSs.

Remember that DAYCLI is a daily data message whose data series will not be used in the same way as hourly data. For example, producing an interpolation of daily data over a world map will certainly not be very useful, given the different practices regarding the time periods used to calculate the parameters. On the other hand, it will be interesting to obtain long time series of maximum and minimum temperatures and precipitations, which is difficult to do with SYNOP messages.

So, I would suggest instead:

- that the NMHSs encode their DAYCLI according to their local practices, without changing the time references in UTC but in giving all the necessary information (UTC difference, parameter time slots, offsets, daylight-saving time, etc.).
- Let those who collect the DAYCLY messages be the ones who transform the data as they wish. The complexity of the processing will be at the level of the global and regional centers.