Dear Editor,

Thank you for accepting the revised version of this manuscript for publication in ESSD. We agree with you and the reviewers that a comparison of this dataset with other related observational products is an important step. We planned to extensively undertake it in a dedicated paper. The manuscript has been revised addressing all technical correction suggested by reviewer#1. Please find below our point-by-point replies (in italics) to the reviewer's comments (in bold).

With our warmest regards,

Giulio Bongiovanni on behalf of all co-authors.

L.123 space missing: winds(Serafin

Reply: *Done*

L.137 "Fig. 2a shows the distribution of station availability as a function of the minimum length of their time series, grouped in 10-year increments"

Suggestion: Fig. 2a shows the cumulative distribution of station length (with a 10-yr resolution).

Reply: *Done*

L.142 "Fig. 2b instead shows the overall distribution of available time series"

Suggestion: Fig. 2b is the histogram of available time series (with a 1-yr resolution).

Reply: *Done*

L. 147 "challenging to show in a clear way given the high amount of stations"

>> The 'heatmap' provided in the response to our review is very clear and impressive; why not showing it in an Annex?

Reply: *The heatmap provided in the response to the review has been added in appendix A*

Figure 2. Distribution of stations by time series length (a) and time (b). Coloured lines identify each variable: mean (in red), maximum and minimum (in green) air temperature,

and precipitation (in light blue). In a) the minimum time series length, grouped into 10-year increments, up to 2020 is represented. For example, at 30 years, the diagram shows the number of stations with at least 30 years of data, irrespective of the specific time span covered.

Suggestion: Figure 2. Cumulative distribution of time series length with a 10-yr resolution (a), and histogram of time series (b). Coloured lines identify each variable: mean (in red), maximum and minimum (in green) air temperature, and precipitation (in light blue). (In (a), the largest values are the total number of time series, the values for a length of 30 yrs are the number of stations with at least 30 years of data, etc.)

Reply: *Done*

L.165 Suggestion: The higher spatial resolution of the rain-gauge network is evident,

Reply: *Done*

Table 2. The multiplication sign is still missing in the lower part : P > 9 x p95, P > 5 x p95

Reply: *The multiplication sign has been added in the formula of the lower part of Table 2.*

L.192 "avoiding the removal of valid observations" :

L.229 "data flagged with warning flags are automatically replaced with missing values"

L.264 "flagged as missing data"

>> the result of the QC is not yet clear to me, is it to flag data or to remove data?

Reply: *QC flag data with warnings and flagged data have been replaced with missing values. No data has been explicitly removed. We deleted the sentence "avoiding the removal of valid observations" to avoid misinterpretations.*

L.328 space missing: org/)T

Reply: *Done*

L.487 "reliability depends on the availability of heated rain gauges"

> providing that the heater works! Heating gauges is only one aspect of reducing precipitation measurement bias; reducing wind exposition eg with wind deflector, is another, etc.

Reply: *We integrated the sentence mentioning the aspect related to wind exposition in addition to the heater, specifying that these are the two most important among possible factors affecting precipitation measurement bias.*

L.523 "as raw, quality checked and homogenized time series"

> as 3 separate time series?

Reply: *Yes, we further specified this.*