	Referee #1	Reply by authors
	General comments	
1	This article presents the integration 76 low-cost accelerometer nodes into the existing permanent seismic network managed by the Autonomous Province of Trento. The purpose is to establish a denser seismic network that covers the whole Trentino area for a real-time monitoring and automatic generation of exposure maps. Indeed, the emphasis in the paper is the rapid estimation of exposure maps in Trentino. The paper is certainly of interest, since at present it probably constitutes the first example in Italy of integration between a dense regional MEMS accelerometric network and a highly sensitive permanent network. However, in its present form, the paper is lacking of some information and details which are important for the reader in order to evaluate the robustness of the results and conclusions. Therefore I suggest major revisions.	Dear Referee, we would like to thank you for your comments and suggestions, and for the time you have spent evaluating our manuscript. Answers to your specific comments are listed below. In the revised text, we will add information and details, in order to better constraint results and conclusions. The use of the low-cost accelerometers and their integration with the Trentino permanent seismic network will be also clarified.
2	In general, I agree with the statements made in paragraph 4 "Summary and results" regarding the applicability of these very inexpensive MEMS for creating dense seismic monitoring networks also in urban environments. Although, I think that in this kind of networks can be useful deploying MEMS with different performance levels, where a percentage of the MEMS must have higher sensitivity and an ultra-low noise density (< 1 μg/ Hz).	At the moment all the MEMS stations are deployed using instruments with the same level of performance. However, the system infrastructure and the CASP software are able to integrate different instrumentation and to elaborate data from different sources (see also CASP description in Scafidi et al., 2018 SRL and Viganò et al., 2021 J. Seismol.).
3	English seems to be acceptable, but, because I am not a natural English speaker, I recommend to the Editorial Office to revise it.	The text will be carefully revised in order to improve English writing.
	Specific comments	
4	I believe it is important to indicate in the paper when the network with 76 MEMS accelerometers began to work (fig. 1 reports 76 stations at 2023), as well as how many stations were present during the previous years.	The starting date and the activity period of MEMS accelerometers will be more precisely stated. In addition, the definitive number of MEMS stations will be finally updated (73 instead of 76, at October 2023), both in the text and the figures.
5	In the paper is reported only one example of earthquake referred to the 10 November 2022 event of ML 2.7. <u>Therefore, I would like to know if the event reported was really the only earthquake that</u>	The earthquakes presented in the manuscript (November 10th 2022, M_L 2.7, Fig. 7; July 11th 2023, M_L 2.1, Fig. 9) are the two better recorded in the considered period (July 2022-October 2023; updated).

	the MEMS network detected throughout 2022 and 2023. As described in Cascone et al. (2021, The Seismic Record. 1,20–26) the ASX1000 has potential sensitivity to record local events with magnitude Mw > 2.5 in the 2–10 Hz frequency range. In the results they reported that the installed ASX1000 were able to detect nine small local earthquakes with 2.0 < ML < 3.0 between April 2020 and February 2021. In Patanè et al. (2022, Remote Sens., 14, 2583) has been shown that the ADXL355 (about the ADXL355 see the next comments on paragraph 2.1) doesn't have a good signal-to-noise ratio for acceleration less than 1 cm/s^2. However, it is still possible to identify earthquakes with magnitudes less than 2.5 that happen less than 15 km away and determine the value of PGA. Therefore, considering the density of accelerometric stations deployed in Trentino, it would be useful to show some additional examples of earthquakes, if they are available, even if they have low magnitudes and recorded at few or at one station.	Additional examples will be supplied. In particular, a complete list of seismic events which were recorded by at least one MEMS station will be added as Appendix to the manuscript. This further information will be commented in the revised text. Even if the MEMS sensors are principally aimed to register the strong ground motion, the possibility to use low-cost accelerometers to register low magnitude earthquakes at small hypocentral distances will be also discussed. Moreover, in the figure attached here below a few examples about the quality of very low magnitude recordings are shown.
6	Paragraph 2.1 In this paragraph, the authors provide information on the ASX1000, a low-cost MEMS sensor. It is said that the design and production of this sensor is owned by AD.EL. s.r.l. However, it may be more correct to state that Adel developed the board for housing and operating the MEMS accelerometer. This because the ADEL Srl does not manufacture MEMS sensors.	We agree that AD.EL srl is not the manufacturer of the MEMS sensor. For this reason, the sentence will be accordingly rephrased.
7	In the first instance, viewing the characteristics (noise floor of 25 μg/ Hz, sensitivity of 3.9 μg/LSB and bandwidth of 62.5 Hz at 250 Hz) reported in both the paper and the work of Cascone et al 2021, I supposed that the acceleremoter was a ADXL355 of the Analog Device. After that, I spoke with the ADEL and the technician sent me the information on the MEMS used in the ASX1000, which is, in fact, an ADXL355. Occur to consider, however, that the sensor not supports also ±1 g, as erroneously written in the paper.	The sentence will be modified, as suggested.
8	Furthermore, it is important to provide the	The MEMS instrument considered in this

	necessary information regarding the ASX1000 board on which the MEMS is installed (e.g., if an SBC or MCU is present for data management, how the SeedLink protocol is implemented, how temporization is performed, etc.).	study is a new version of the ASX1000 presented in Cascone et al. (2021). In fact, even if both mount the ADXL355 accelerometer, some improvements were made (e.g., low-pass digital filters, 4G LTE modem, low-power with battery management). To better clarify this point, the MEMS instrument will be renamed as ASX1000v2 (upgraded version of the original ASX1000) in the revised text and figures. Further information about the ASX1000v2 board will be added. In particular, about data management (MCU model), the SeedLink protocol, and temporization (performed using the NTP protocol).
9	In figure 5, I note several problems. In particular, there is a shift in the noise floor curve of the ASX1000 and in the representative spectra responses of earthquakes for different moment magnitudes (dashed lines) measured at 10 km from the epicentre, with respect to the same curves reported in fig. 1 of Cascone et al. (2021), but also, for the representative response spectra, with those reported in fig. 2 of the paper of Nof et al. 2019 (Earthquake Spectra, Volume 35, No. 1, pages 21–38). I suggest that the authors carefully review Figure 5.	Figure 5 will be carefully checked and graphically corrected. In particular, the noise floor curve of the accelerometric sensor and the representative response spectra will be modified, also according to Cascone et al. (2021) and Nof et al. (2019).
10	Paragraph 2.2 In the paragraph 2.2 the authors report that the data are managed by a software package, called CASP (Complete Automatic Seismic Processor). The authors should provide some details on the data transmission from the 76 installed MEMS stations to the central processing center that utilizes CASP. The delay associated with data transmission and the rate of data loss are examples of factors that can impact the efficiency and reliability of network and data availability itself. I suggest that the authors include a figure showing a Gantt chart, in terms of working and not working, for the 76 accelerometric stations during their period of operation.	In order to verify the activity of the monitoring system, the CASP software is set to automatically check data transmission and data availability from the fluxes of all the network stations (both highly sensitive sensors and low-cost accelerometers) (see description in Viganò et al., 2021, J. Seismol.). In particular, each hour an automatic control is performed, to monitor data availability and time latency. If any problem arises, SeedLink is rebooted and technical alerts are sent to seismologists. For this reason, the results from each automatic check are not stored and not made available later in time. In addition, even if the continuous data flux of the highly sensitive sensors is stored, that from the low-cost accelerometers is not. In fact, automatic storing is performed by CASP only for the portions of the MEMS seismic traces corresponding to an earthquake detected by

		the system. However, data latency and data loss can be evaluated for selected periods (e.g., analyzing a one-week distribution of data). In this case, the typical average latency is in the order of about 15 s, while the data flux of all the MEMS stations is continuous and complete at about 99.5 %. This information, together with a comprehensive description on data transmission will be stated in the revised text.
11	Paragraph 2.3 Concerning the calculation of automatically exposure maps the authors used the empirical relationship of Faenza and Michelini (2010) to convert in intensity values. There is a new empirical relation for Italy by Oliveti, Faenza and Michelini (2022). Therefore, I think that this one should be considered instead of Faenza and Michelini (2010).	As suggested, the empirical relation for Italy by Faenza and Michelini (2010) will be substituted by the more recent one by Oliveti, Faenza and Michelini (2022). Figures 8, 9 and 10 will be consequently modified.
12	Paragraph 3 In this paragraph the authors test the procedure of seismic shaking exposure considering a realistic emergency scenario for a moderate event, simulating an ML 5.8 earthquake in Southern Trentino (45.834 °N latitude, 11.066 °E longitude, 9.0 km depth), considering that it will represents a reference for the seismic potential of the Trentino region. How did the authors perform the numerical simulation? Which algorithm was used? Which source, path, and attenuation parameters were applied? It is important that the authors describe a comprehensive detail of the numerical simulations, since the above factors significantly influence the final results and the measured ground motion.	The emergency scenario of Fig. 10 does not represent a complete numerical simulation, but a "simplified simulation" with the aim of evaluating a realistic scenario in the case of a strong earthquake in Southern Trentino (compare also with point #3 of Referee #2). This point will be more clearly stated in the revised text, also specifying the method used (magnitude assignment and seismic attenuation calculation at each station of the network).
13	In conclusion, my final recommendation is to perform a major revision. I think that the topic covered by the work is interesting and the authors could make it a lot better.	The manuscript will be carefully checked, in order to generally improve comprehension and readability.

Figure (see point #5)
M_L, local magnitude; HypoDist, hypocentral distance