Furthermore, Fig. 7 contains recorded data at the station from Turnu Severin and it can be seen that water level evolutions are obviously influenced by the Portile de Fier hydro plant dam. Daily oscillations are specific to this site, while max and min values situate themselves only slightly above and below the average value.

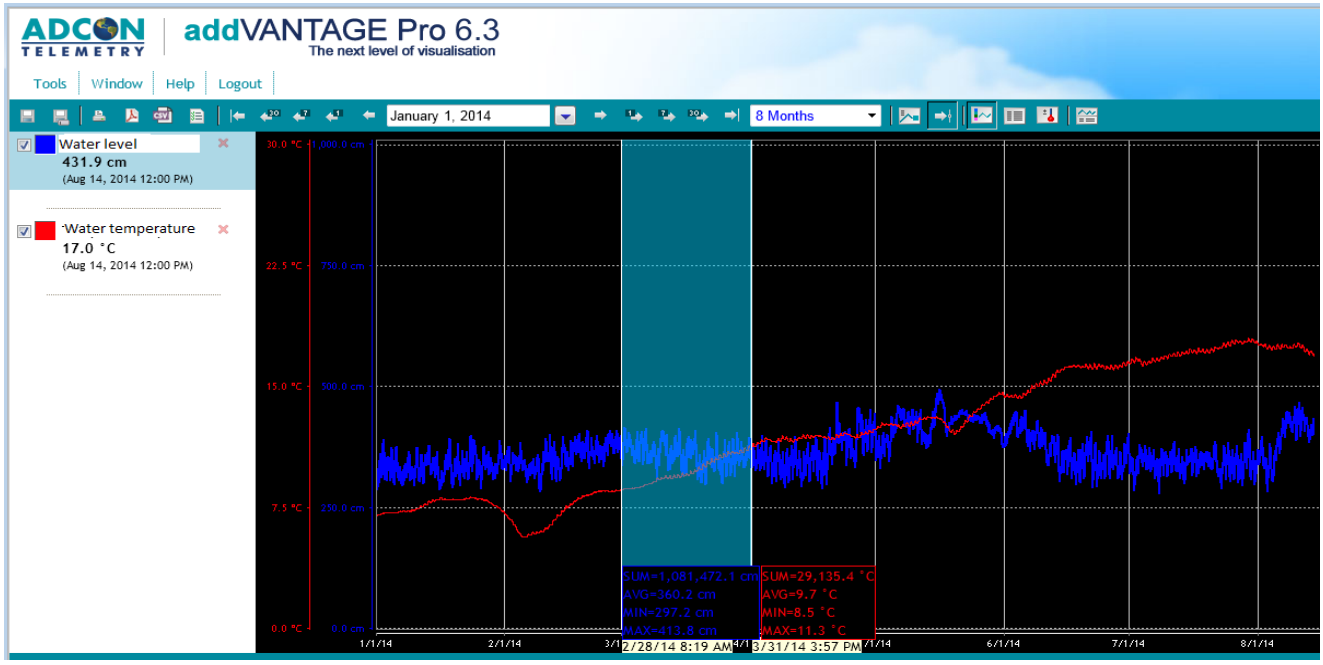

Figure 7. The monitoring station at Turnu Severin

As presented in Fig. 8, in clear contrast to results from Turnu Severin, shows how max and min levels at Calafat have considerable deviations from the average.

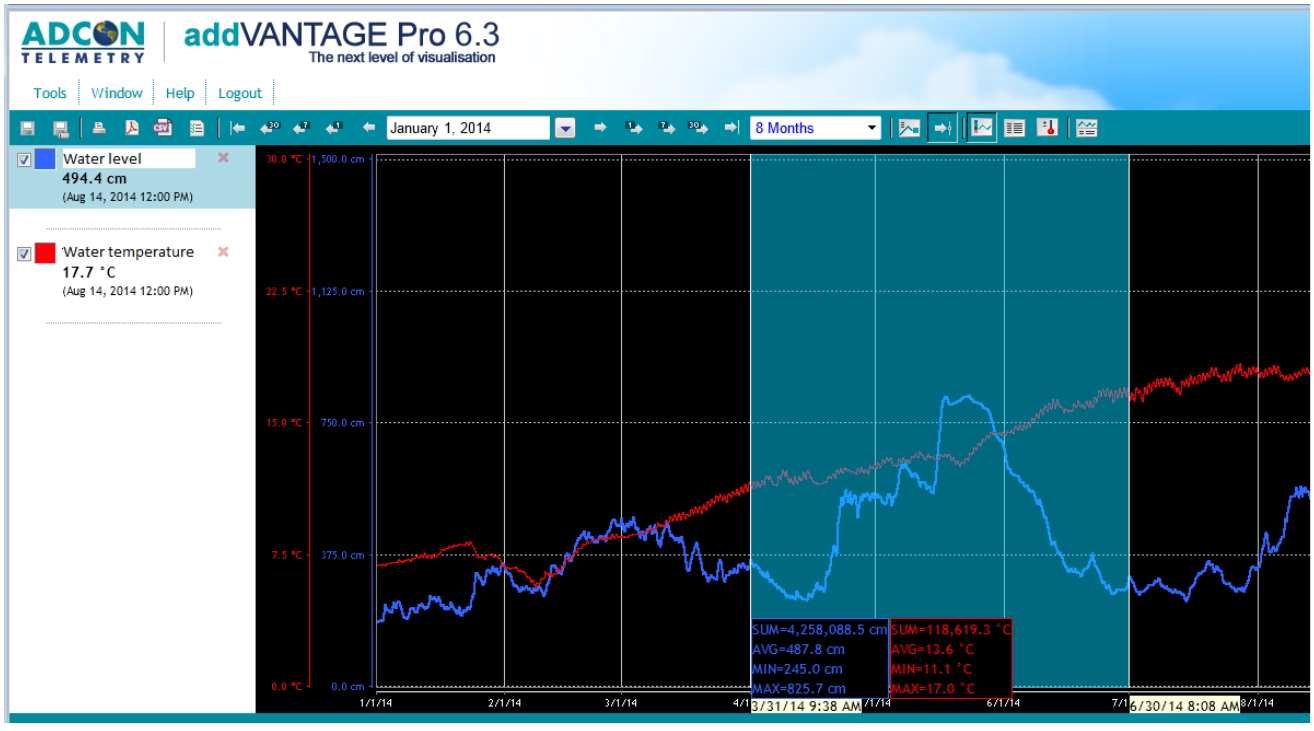

Figure 8. The monitoring station at Calafat

Moreover, Fig. 9 shows that during dramatic floods in spring-summer 2014, the monitoring station on the Vedea river has revealed spikes of nearly 5 meters for a level that barely amounts to 50 cm under normal weather and hydrological conditions.

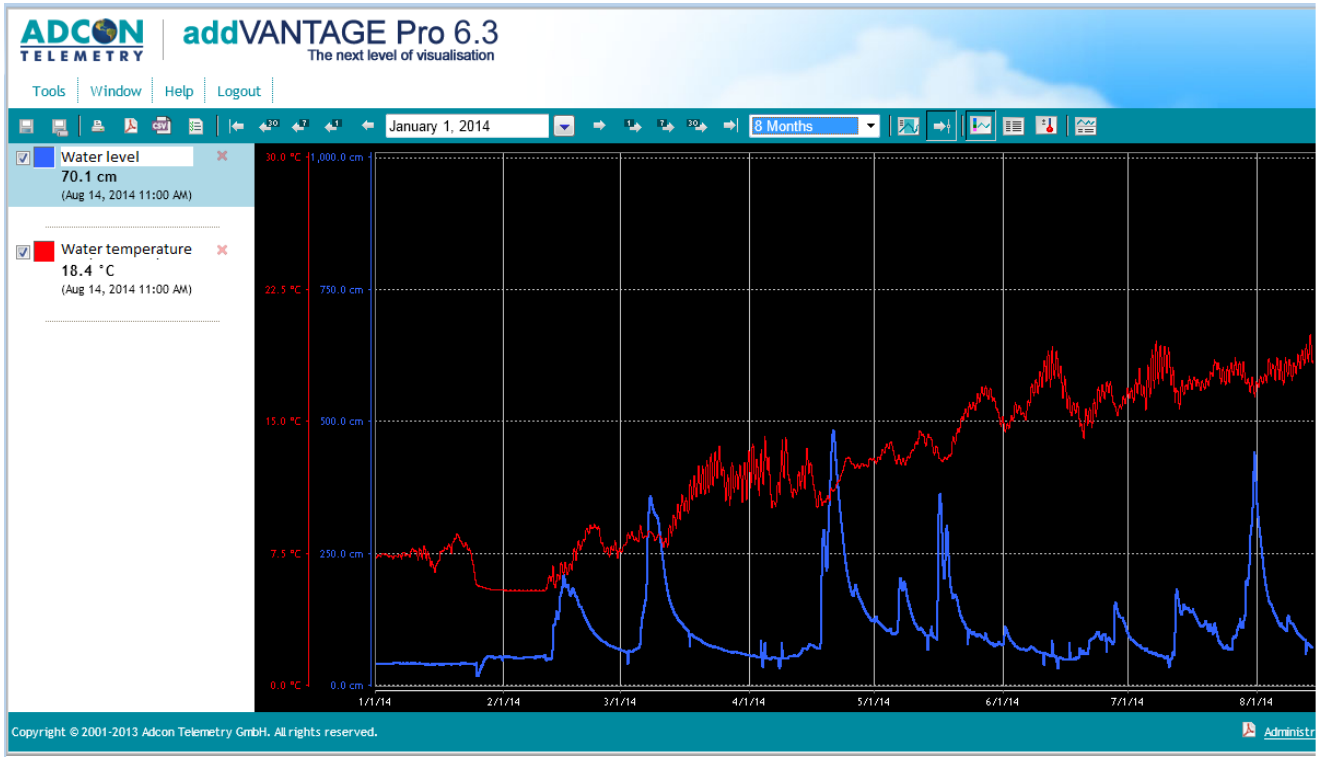

Figure 9. The monitoring station on the Vedea river

Moreover, Fig. 10 has recorded data of the radar on the Danube's Canalul Plantelor arm at Giurgiu and shows that in 2015 were about 3 summer months with negative levels, but also negative levels during November 2015 and January 2016. Vertical flaws indicate moments when the radar beam has only met the river bed.

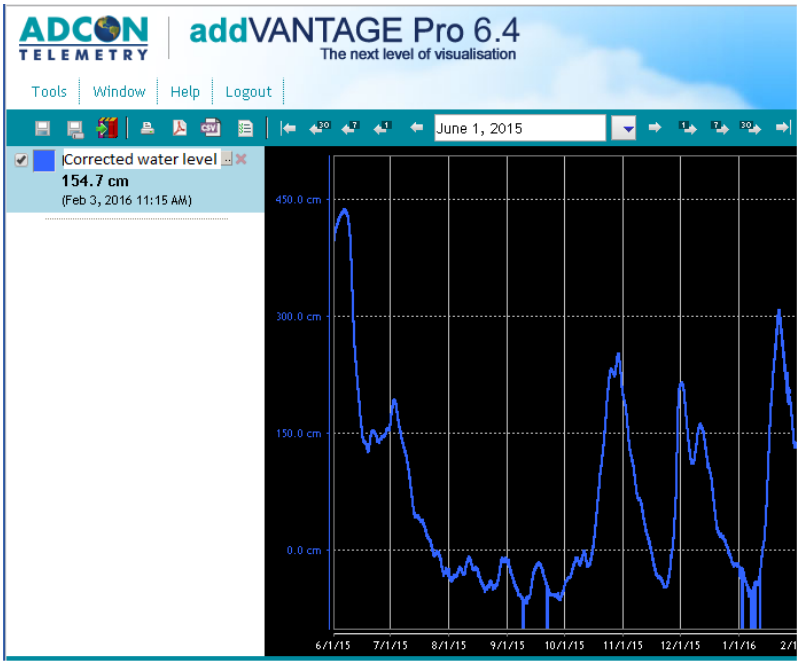

Figure 10. The radar on the Danube's Canalul Plantelor arm at Giurgiu

Finally, Fig. 11 shows that during some days of extreme frost (20-26 January 2016), the Danube level indicated by the Giurgiu radar did have oscillations with amplitudes possibly proportional to the ice layer thickness.

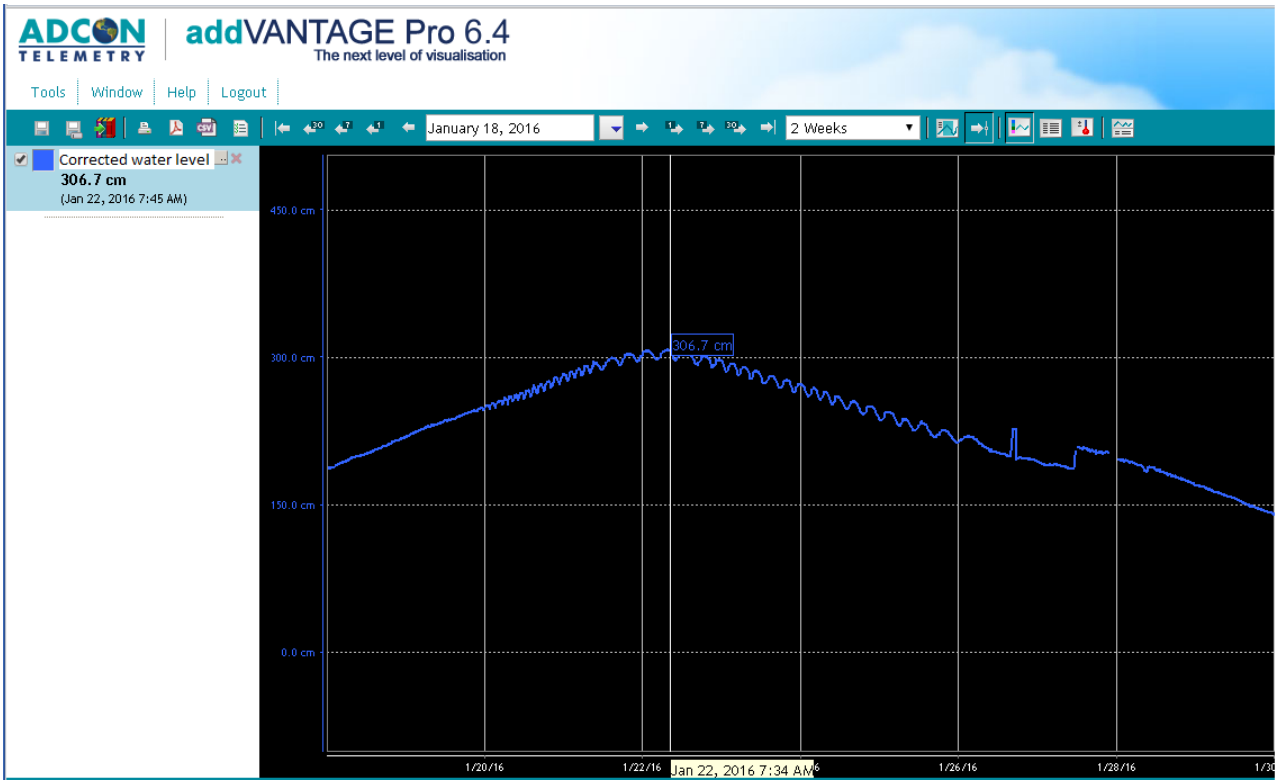

Figure 11. The radar station at Giurgiu.

As future work we envision to update the current system with improved visualization tools and add new sensors for monitoring the water quality.

4 CONCLUSIONS

In autumn 2016, most of the BEIA – Adcon – ANAR telemetry system above-described will have three years of uninterrupted functioning. It is a lapse of time that has encompassed difficult winter months for the outdoor equipment and also difficult hot summer months. In spite of that, we presented that data have continuously arrived at the ANAR headquarters, hour after hour and with utmost precision. This is being seen as a good reason to hope that the system will continue to grow with new remote monitoring installations and also, eventually, with new sensors added to existing installations.

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