



THIS ISSUE

*UltraHD
Technical Reports
Sense Boxes
Sensation Map*

DELIVERABLES

We have been preparing the periodic report for M18 including financial statements from all partners but also the comprehensive technical report that includes all developments and main achievements towards the project's goals so far.



WHAT HAVE WE WORKED ON?

These past months have been busy with a lot of background tasks on the UltraHD, services, the GCCP as well as the reporting of our current project results.

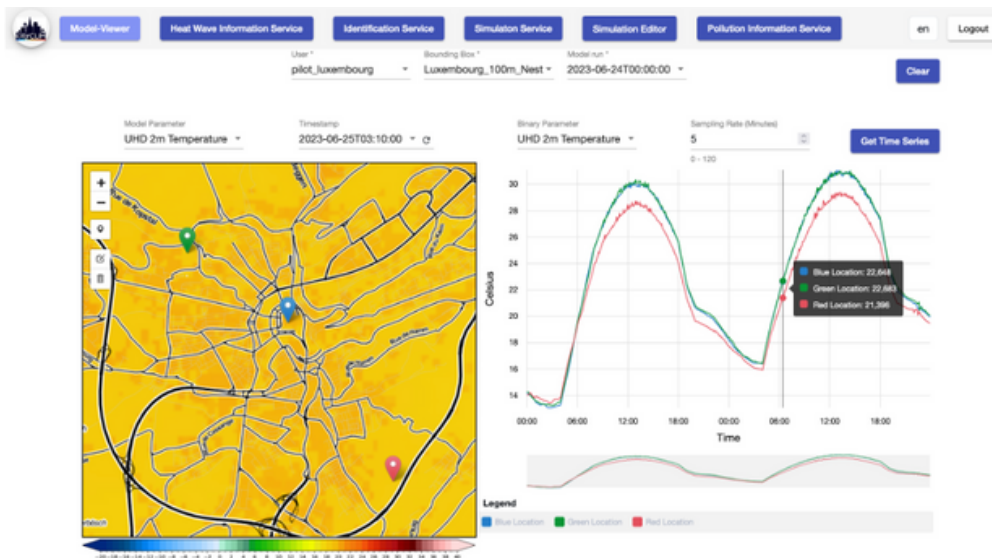
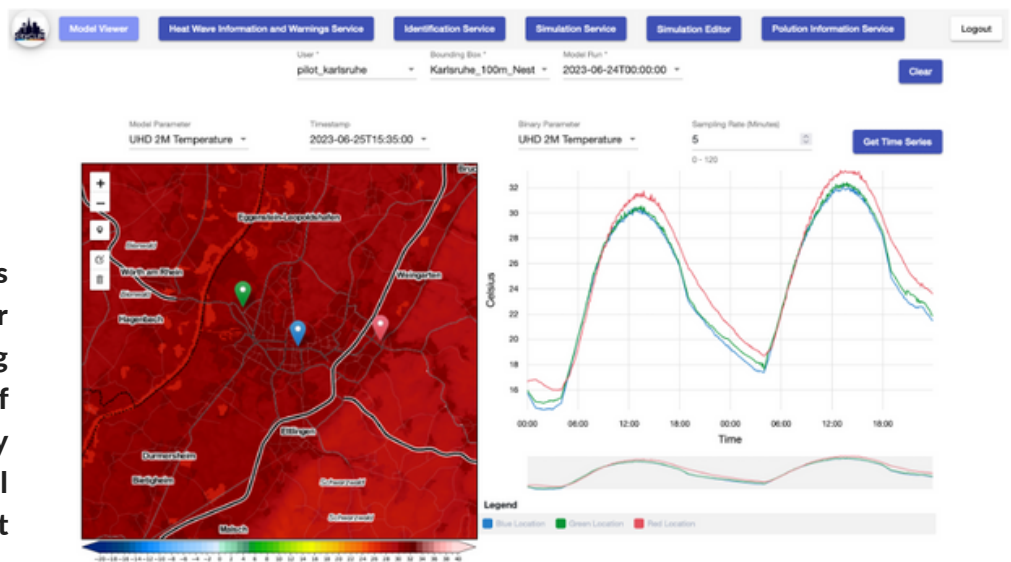
The Pilot cities have been busy in setting up weather stations (especially Thessaloniki and Luxembourg) or discussing where the weather stations could be located and gathering permissions from locals to set them up. Furthermore, the consortium was in contact with stakeholders at cities to understand, how the Citizen Climate Knowledge Services that are planned to be disseminated directly via the Pilot cities' channels could potentially be implemented into their systems.

New UltraHD nests and API endpoints have been developed and set up to connect to the GCCP and the UltraHD is now including operational runs for Karlsruhe and Luxembourg.

UFZ has been assembling and quality testing 40 Citizen Science equipment Sense Boxes to be used for Citizen Science campaigns.

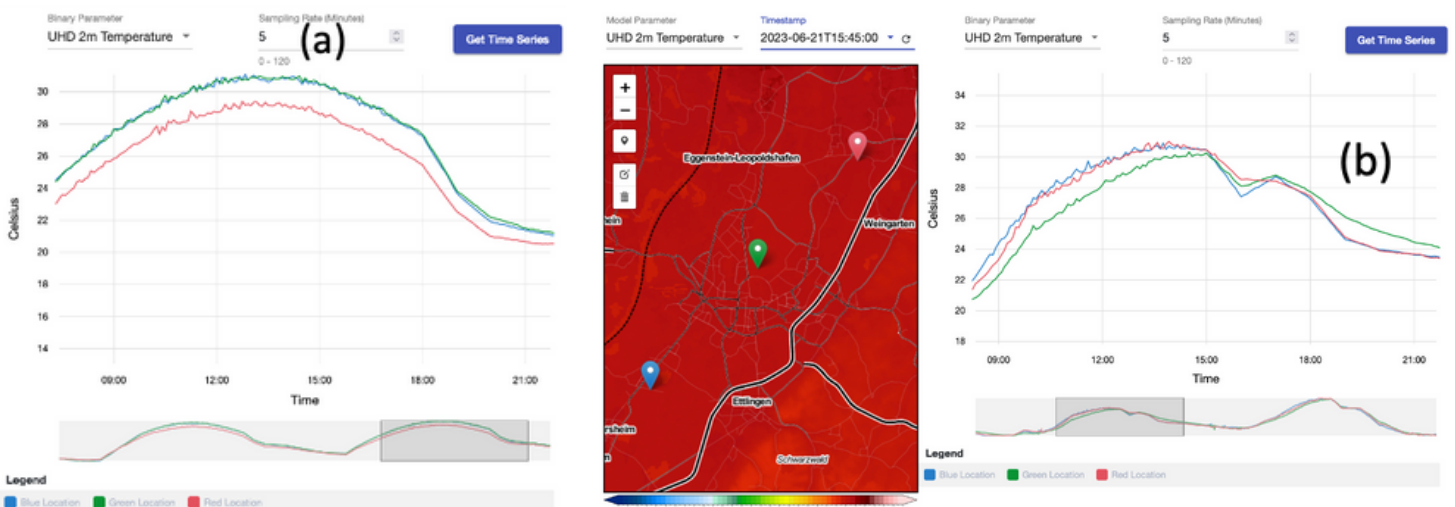
ADVANCES ON THE ULTRA HD

For a few weeks MTL is running daily forecasts for Karlsruhe and Luxembourg using the early prototype of the compressible Large Eddy Simulation (LES) model including a two-moment microphysics.



Compressible means, it is not only non-hydrostatic but the model actually resolves low frequency pressure waves in the atmosphere. The model domain consists of 5 million grid cells at 100m resolution with an explicit time step of 1/6th second or a 48h forecast the model currently needs 18h of

computation time using one GPU. During the computation the GPU has a power consumption of about 330W, which is very energy efficient for such a high performance computation application. Output is distributed to the GCCP for further analysis, via visual map overlays and numerical values for time series analysis. The high temporal resolution output of model data (every 5 minutes) allows the representation of explicitly resolved boundary layer turbulence. Usually weather models have hourly output.



For example afternoon convection during a hot summer day (a) or the passage of a small cold front (b) can be studied in detail on a daily basis.

CITIZEN SCIENCE

ACTIONS

We have been busy doing quality control testing of the citizen science climate sensors before we send them to the pilot cities. The picture shows the 40 assembled at-home weatherstations all together in our technical hall at UFZ. These stations will be set up on the green roof of UFZ where data will be collected and monitored for quality control, before they are disassembled again and shipped off to the pilot cities.



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The CityCLIM team, together with the 5 girls and 1 boy, discussed the importance of climate data in cities, green roof tops, explained the Sensebox parts and assembled environmental monitoring stations (SenseBox) and placed them on a green roof. This SenseBox environmental monitoring station is an easy-to-use SenseBox mini-computer to which various sensors are connected. It is also planned to use the SenseBox stations to collect environmental data in the urban environment in some CityCLIM pilot cities.

PILOTS LUXEMBOURG & THESSALONIKI

RCM (THESSALONIKI)

There are now three weather stations recently installed in Thessaloniki. The first one is on the northwest, the second is on the east side and the third is in the city center. All the weather stations have been installed in a safe location following the standards of WMO as much as possible. They measure temperature, relative humidity, pressure and solar radiation. The data are already available through the meteologix.com platform. There are contacts about the possible locations of the two remaining stations. The installation is about to complete by the end of June (M21).



AGIAS SOFIAS (CITY CENTER)



KORDELIO (WEST SIDE)



KALAMARIA (EAST SIDE)

SENSATION WEATHER MAP LUXEMBOURG

RTL's technical team has implemented the concept into reality in their App and Website.

Output of the operational model runs are also distributed to the Citizen Weather Sensation Engine/Service. A moisture dependent Heat-Index for the temperature perception is computed. The prototypical frontend implementation at RTL Luxembourg allows color scale customization to the individual perception of the user.

