IAF EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Societal and Economic Applications, Challenges and Benefits (5)

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HEATSCAPE RESOLVE – INTEGRATING EARTH OBSERVATION OF URBAN HEAT ISLAND EFFECTS INTO URBAN PLANNING PRACTICES

Abstract

HeatScape Resolve is an urban heat island (UHI) recognition and prediction service for real estate developers and municipalities conducted with satellite earth observation (EO), developed by Paulinyi-Partners cPLc. and Envirosense Hungary Ltd. It encompasses three stages of UHI and microclimate assessment; Current state of UHI, simulated prediction of UHI change for urban development scenarios, and post-development validation of UHI. The result of the process is a location specific UHI intensity and microclimate prediction for building cooling load reduction, as well as a detailed microclimate map of the planned development for sustainable urban public space planning. The study details the EO imagery based indices best suited for the UHI prediction of commercial large scale urban developments, how attributes of the urban scape observed by EO can be used for the predictive simulation model inputs, as well as the requirements of the users towards the service. The integration of the gained outputs of the service for ESG and sustainability assessments are presented.

The commercial development activity is performed under a programme of, and funded by, the European Space Agency and is carried out under the ARTES BASS programme.