**PILOT SERVICE AND APPLICATION TOOLS FOR MONITORING OF UV-INDEX IN PASSENGER SHIPS**

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**ABSTRACT**

The UV-Index (UVI) is a measure of the level of UV radiation. Its values range from zero upward, while the higher the UVI, the greater the potential for damage to skin and eyes. The UVI is an important tool to raise public awareness of the risks of excessive exposure to UV radiation, and to alert people about the need to adopt protective measures. In this respect, a pilot service was developed for operational application of the Earth-Observation based UVI estimation in real-time for the Bluestar and Superfast Ferries for the year 2017.

Digital signage monitors have been installed across the seating areas and high foot traffic points of 13 passenger ferries in the lines to Italian ports (Angona and Bari) and Greek islands, including Cyclades, Dodecanese and Crete. These ship lines serve annually 4.2 million passengers with 50% of this number being tourists.

For the implementation of this application, we used the spectral information of the libRadtran radiative transfer model and based on the UV part of the spectrum, the UVI was produced with high spatial (3 km) and temporal (15-min) resolution exploiting the satellite application facilities in support to nowcasting and very short range forecasting (SAFNWC). The Copernicus atmosphere monitoring service (CAMS) and the Tropospheric Emission Monitoring Internet Service (TEMIS) were also used for the clouds, aerosols and ozone effects, respectively. The IT team of Attica Group took over the dissemination of the service outputs to the 13 ships.

Overall, the service was successful in terms of public impact and visibility, while the most constructive period was summer, since the majority of passengers (more than 3 million) observed the UVI service. We note that this service was accessible to the audience for 30 seconds every 6 minutes, according to the loop of the rest of displayed advertisements. The success in the dissemination of the UV-index information for passengers and staff is believed to encourage people to adopt environment-friendly practices and develop environmental awareness through proper information and training. Such pilot programs and applications of scientific services that are highly associated with human health issues are especially important nowadays.

**KEYWORDS:** UV-Index, real-time observations, Digital signage monitors, services-application, ships

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