

7.13 PRODUCING CONVECTION DAILY MAPS BASED ON OPERA COMPOSITE AND EUCLID LIGHTNING DATA

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Hazardous weather, such as extreme rainfall, hail, and other dangerous phenomena associated with severe convective storms, can be clearly identified in radar observations. Those events may affect public safety, cause property damage, and/or induce economic losses. Therefore, a daily overview of all areas in Europe affected by severe convective phenomena could be of interest to many stakeholders.

Pan-European weather radar composites are available through the EUMETNET Operational Programme for the Exchange of Weather Radar Information (OPERA). As such, daily pan-European maps can be produced based on the aggregation or accumulation of the 15 minute maximum reflectivity and rainfall OPERA products. However, the most hazardous convective storms are generally producing lightning activity. For identifying such storms, it is useful to complement radar data with lightning data. A thunderstorm daily map using data from the European-wide lightning detection network EUCLID (European Cooperation for Lightning Detection) is used in this study to improve the mapping of convective precipitation over Europe. Lightning and radar data are combined for a selection of convective episodes simultaneously affecting several countries in Europe. The benefits of combining the two sources of observations are explored.