

Mass media

Overview

Weather information disseminated through mass media, like press, TV, and Internet is intended for its recipients, not for the media themselves. Therefore the addressees of the media constitute the group of end-users of the information, and the information is prepared according to their needs.

Information delivered by weather radars is potentially powerful, but underestimated resource for media. A lot of work is required to turn its potential into reality, but the benefits of doing so can be great. The main beneficiaries of weather information are user communities, however there is also a profit for the media organisations in a competitive market. Moreover any usage of data collected by the radar that helps to improve public safety, is viewed as supporting the broadcaster's mission.

Still not wide set of weather radar data is desired by media such as newspapers and TV including weather channels (Fox, 2003). The Internet however, becomes the medium which is the most interested in the data for various purposes. Ground measured precipitation is one of the most important weather information for society and wide range of economy branches. In media, forecasts of basic meteorological parameters, like temperature, pressure, wind speed and direction and precipitation for countries, regions and selected city vicinities are the most often sought after weather data. Especially extreme events are interesting.

The media interest in weather data suddenly increases when natural hazards and catastrophes occur, such as drought, heavy rain, flood, strong wind, tornado, hail etc. In this cases more detailed and more often information and forecasts are expected by the mass media and public opinion.

Data usefulness

- Ground precipitation images (estimated and nowcasted) that are usually merged with other data (from satellite, interpolated ground station network, synoptic map, etc.) and displayed over background images (orographic, administrative).
- Images of very hazardous meteorological phenomena, like tornadoes, heavy storms, especially presented as animated sequences of estimated and nowcasted images.

Examples of implementations

Press issues

In general, meteorological satellite and weather radar maps are published in cases of more interesting and hazardous recent situations, such as heavy rain, flood, strong wind, tornado, hail etc.

TV weather broadcasts

Commonly radar composite or satellite images are presented on TV in cases of events interesting from society's perspective or severe weather situations. Radar animation is considered more vivid for average users. Good example of this approach is ČT (Czech TV), where radar animations are used on routine basis.

In daily weather broadcasts satellite data are more often used, however radar data are more suitable for small-scale phenomena presentation, that are smaller than country area.

Radar-based nowcasts, i.e. forecasts with lead-time up to 2-4 hours, are mostly not used despite their great potential. Even though it is not possible to extend the lead time of this kind of forecasts, still they seems to be sufficient for news and weather TV channels.

Weather webpages

Simple weather radar composites with animation available on line, are mostly presented on public webpages of most national meteorological services (Fig. 1).

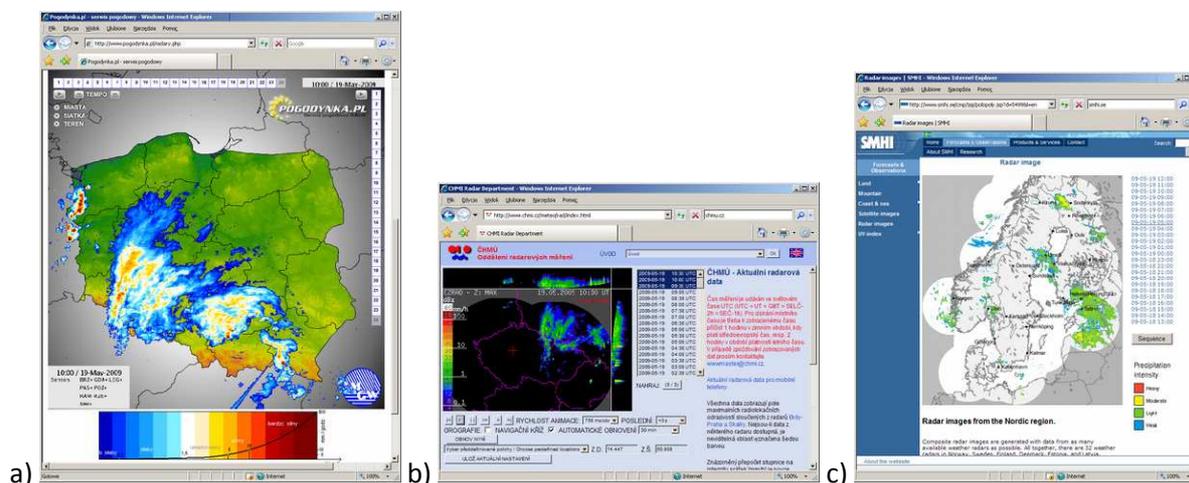


Fig. 1. Example of weather radar animated national composites presented on webpages of:

- Institute of Meteorology and Water Management (www.pogodynka.pl),
- Czech Hydrometeorological Institute (www.chmi.cz),
and over national (regional) for
- Nordic region (www.smhi.se).

Specialized weather services use all available data, especially from meteorological satellite, weather radar networks and ground meteorological station data, that are presented in single or combined mode. High level of graphical processing of the data, i.e. configured background, animation, scaling, etc. is used. The data can be depicted in global, continental, country or regional scale. (Fig. 2).

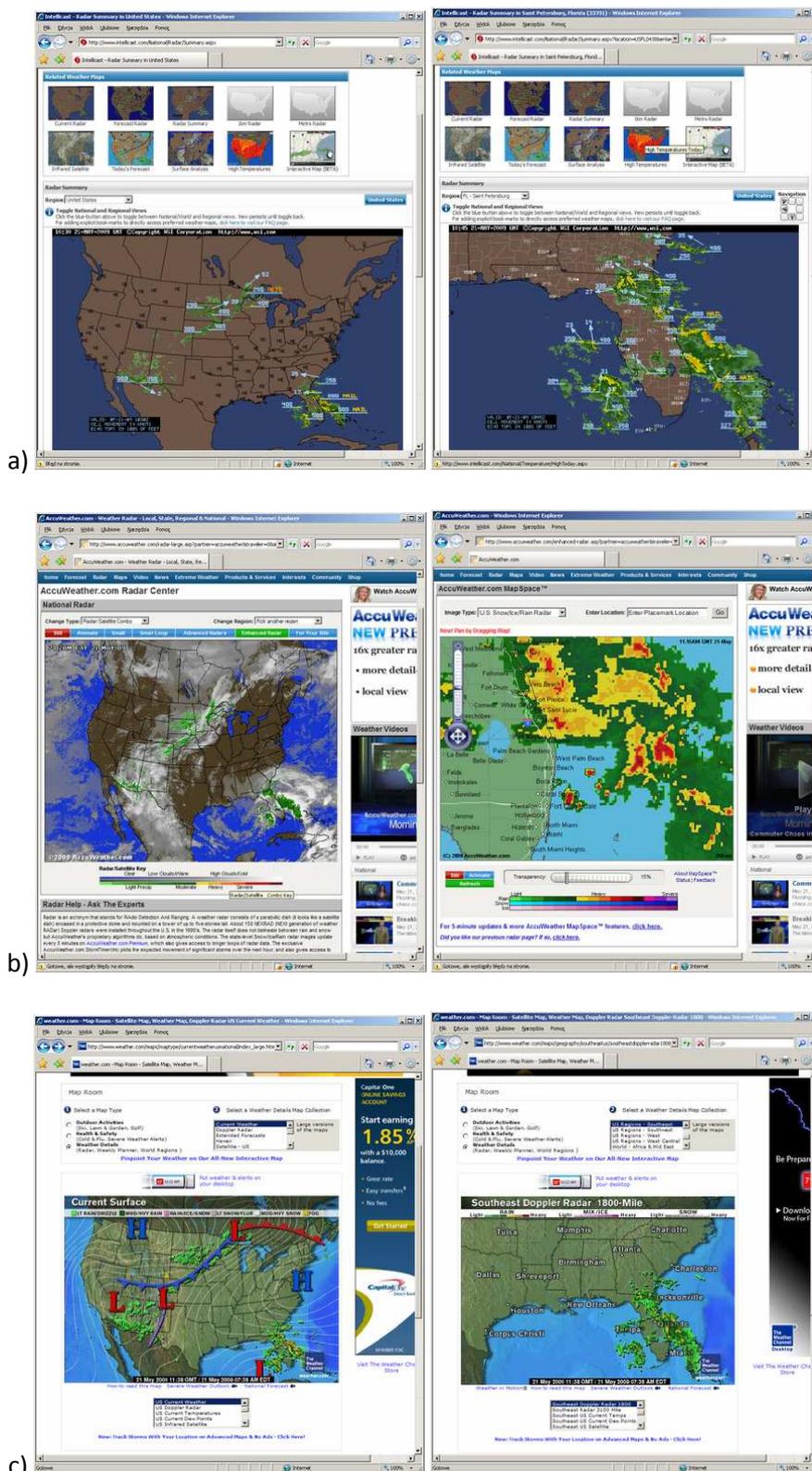


Fig. 2. Examples of weather radar maps on US weather www portals:

- a) www.intellicast.com: US current radar composite with cell movement vectors and echo tops and extracted area, b) www.accuweather.com: US current radar composite and satellite combination and extracted area with administrative overlay, c) www.weather.com: US radar composite with weather situation and extracted area with administrative and topographical overlays.

Google Earth application

Google Earth is a GIS platform for weather applications. The Google Earth is available under two different licenses: Google Earth, a free version with limited functionality, and Google Earth Pro, which is intended for commercial use.

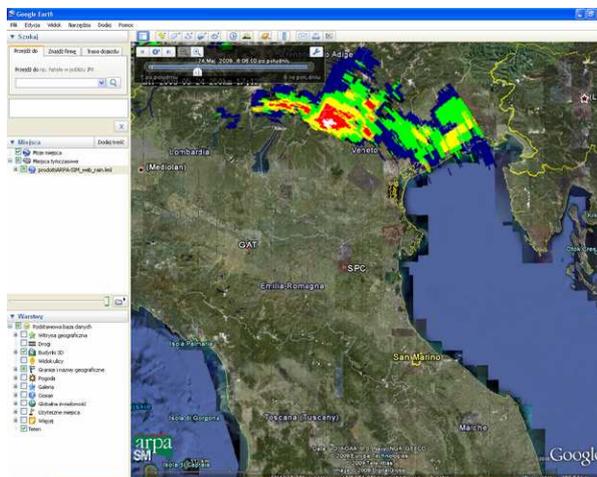


Fig. 3. View of Google Earth application.

The main strength of this methodology is that it allows for easy real-time integration of different data types by the simple overlay of several maps and meteorological products. Satellite images of the Earth's surface are downloaded from Google server and displayed in web browser as overlay. User-defined meteorological maps in KML format can be added to the application through the data provider webpage. Moreover, the system allows for frequent data updating and it is capable of visualizing evolution of synoptic systems in time. This provides a very effective monitoring of hazardous events leading to important applications for operational monitoring and early warnings. Especially weather radar data are useful for this purpose due to their high spatial and temporal resolution (Fig. 4).

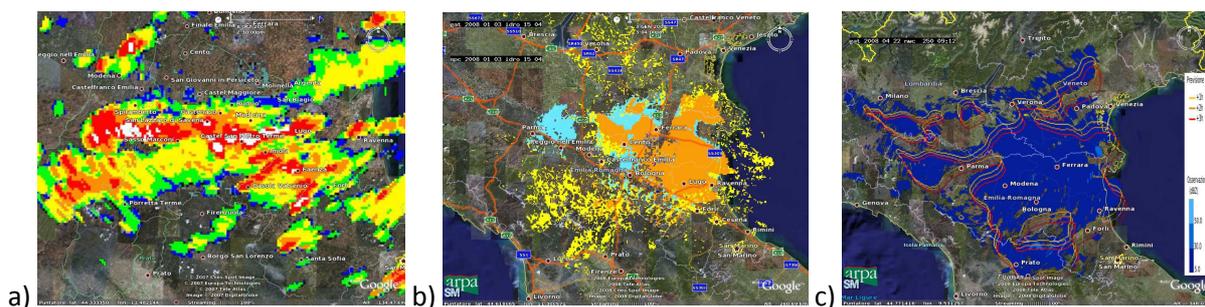


Fig. 4. Example of Google Earth platform using to visualize meteorological fields obtained from two-radar composite in Emilia-Romagna region (Italy): a) ground reflectivity map, b) hydrometeor classification map, c) nowcasting map (coloured lines show the different lead time of predicted reflectivity fields) (source: Celano et al., 2008).

Remarks

Usage of radar and radar-based data is in disproportion to potential of the data due to not only technical reasons. It is clear that closer cooperation between weather radar communities and media representatives is necessary to use the great potential of weather radar data.

Literature

Celano, M., Siviero, F., Poli, V., Alberoni, P.P., and Di Giuseppe, F., 2008. Using Google Earth visualization platform to support the analysis of severe weather case studies. *Proc. of ERAD 2008* (CD).

Fox, N.I., 2003. Quantitative applications of broadcast media weather radar data. 31st Conference on Radar Meteorology, 6-12 August 2003, Seattle, WA, vol. II, 799-801.

Webpages of national meteorological services: www.pogodynka.pl, www.chmi.cz, www.smhi.se (May 2009).

WWW portals: www.intellicast.com, www.accuweather.com, www.weather.com (May 2009).