An online reposting system for tornadoes, waterspouts and funnel clouds activity over Greece: http//tornado.geo.uoa.gr

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Aim

A systematic effort was started in 2007, by the Laboratory of Climatology and Atmospheric Environment (LACAE) at the University of Athens (UoA), in recording tornado activity in Greece. In the fall of 2009, LACAE launched the first online tornado report system, which has been settled fully operational, since then. The tornado reporting system consists of three individual steps, encompassing detailed information regarding the type, the exact location, the impact and date of the event. This paper illustrates the methodology of reporting and quality-control procedure of the Greek tornado report system.

1st step

At the 1st step (Fig. 1), the simplicity of a Google Map interface is adopted. Thus, the user can easily suggest the exact location of TE that took place with a very high accuracy. Moreover, the user can submit the following data: 1) the date and time of the event, 2) the time precision (e.g. ± 15 min, ± 30 min) of the event, 3) the duration of observation, and 4) topography characteristics of the terrain.
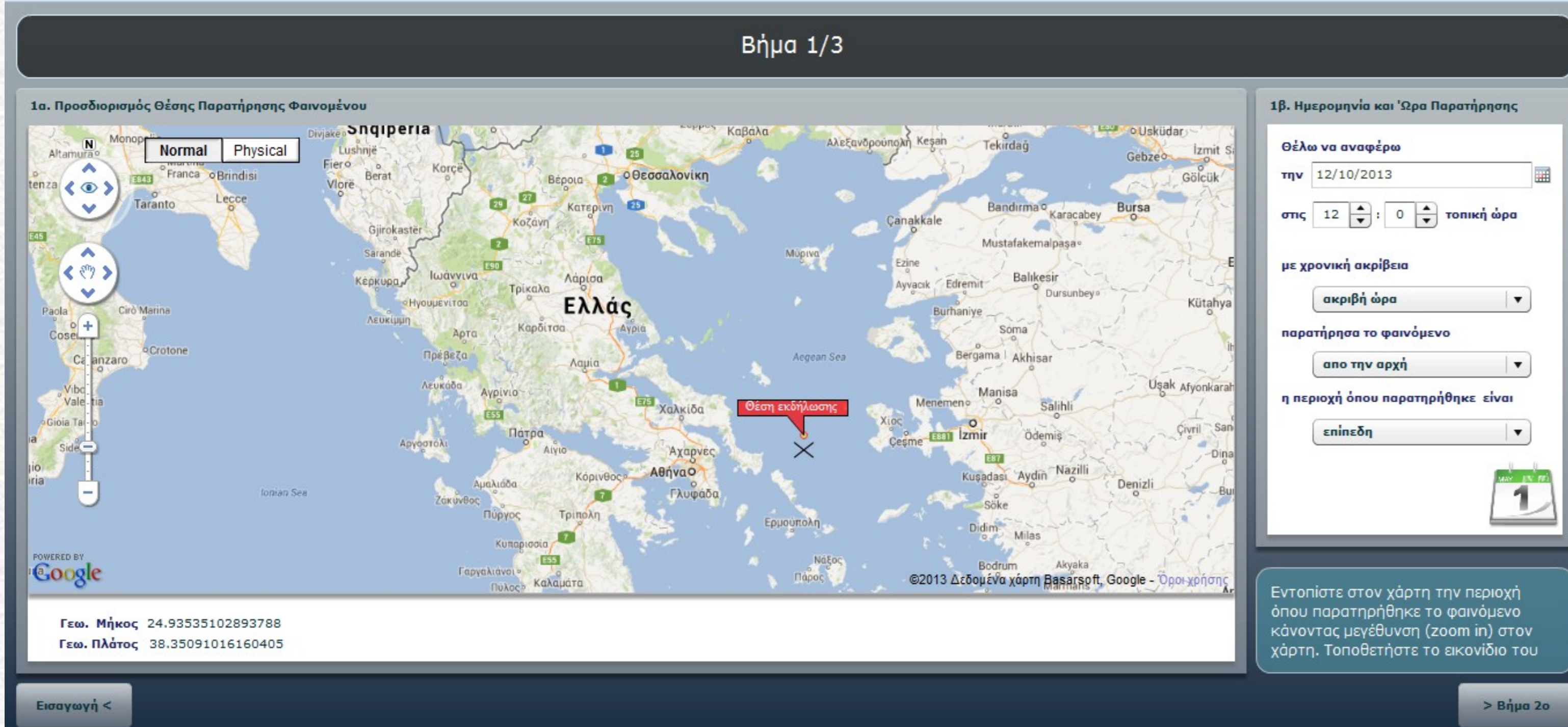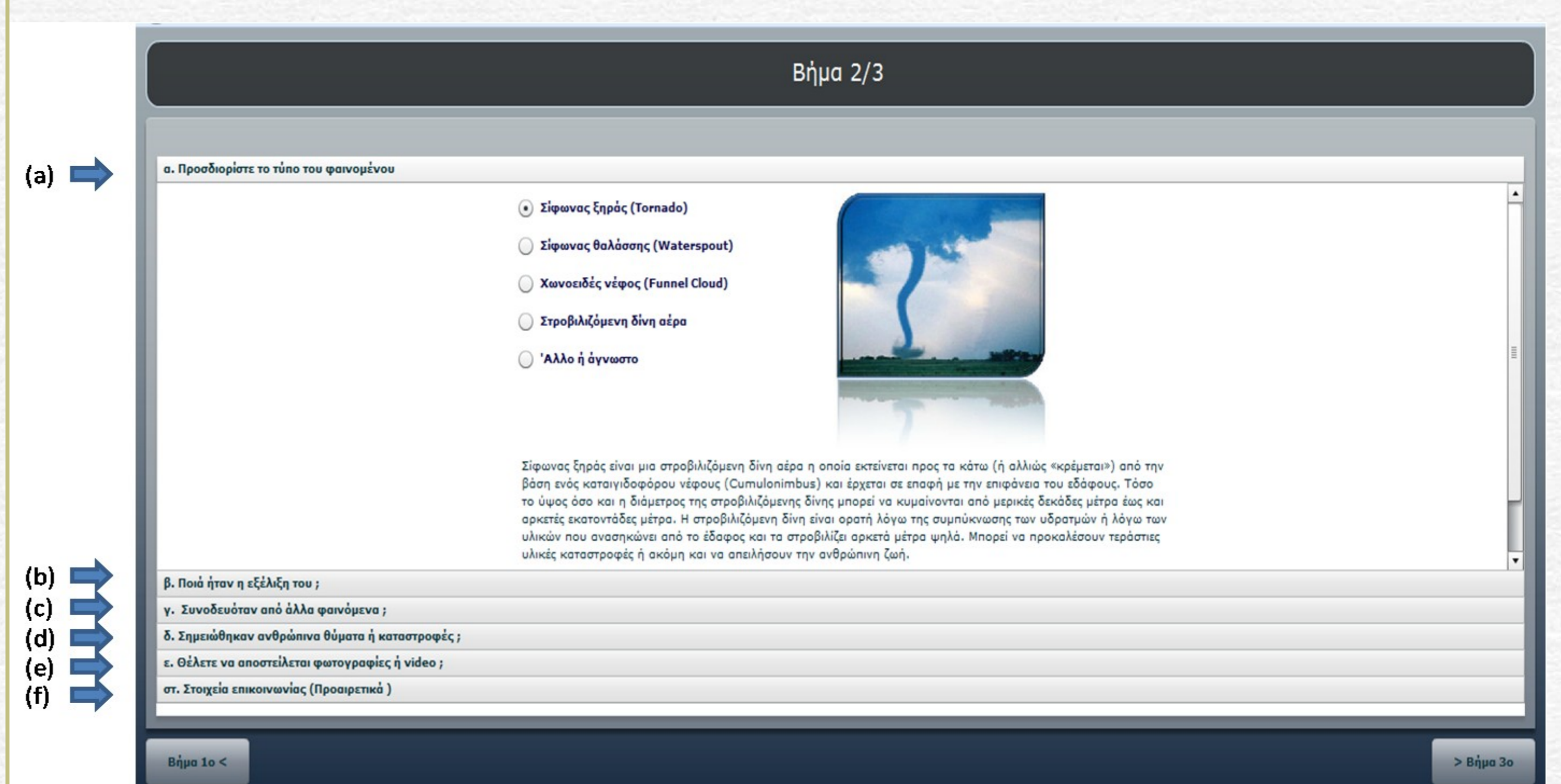

Fig.1: Screenshot (in Greek) of the first step LACAE's online tornado report system (http://tornado.geol.uoa.gr).

3rd step

At the 3rd step (Fig. 4), the system provides a review of all inserted data (left panel in Fig.4) and asked the user to verify that all submitted data are not violating any copyrights of third parties and can be used by University of Athens (right panel Fig.3).
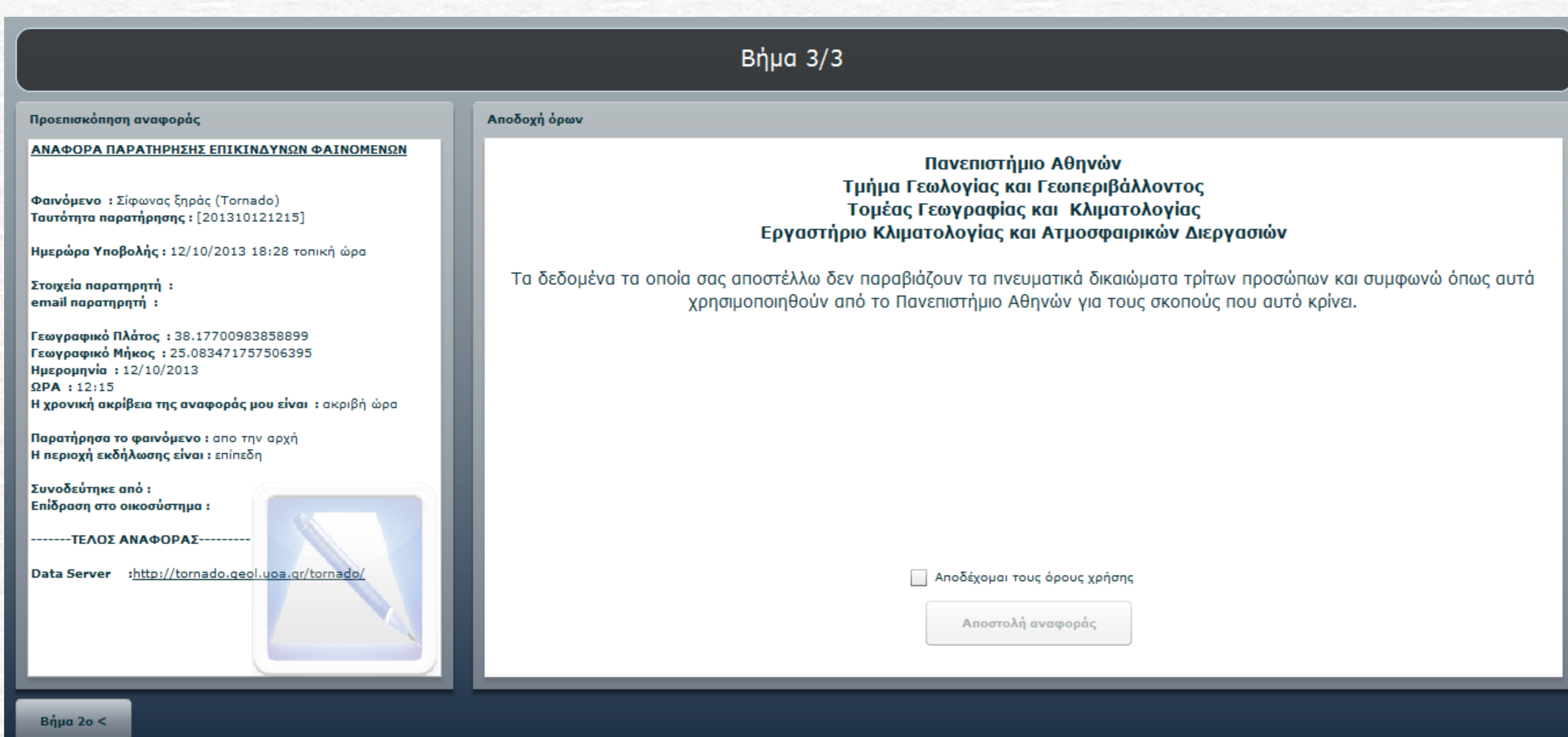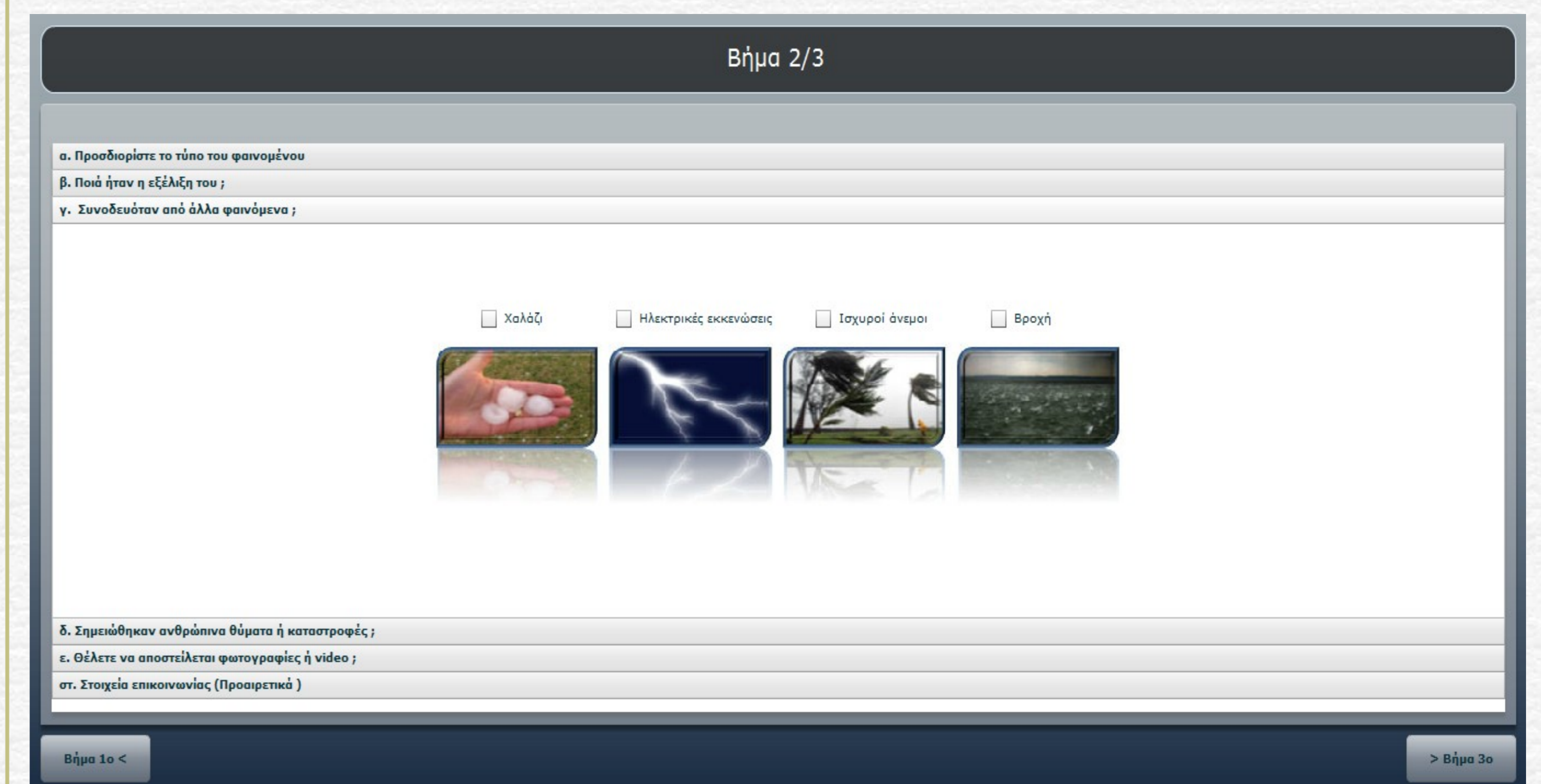

Fig.4: Screenshot (in Greek) of the third step LACAE's online tornado report system (http://tornado.geol.uoa.gr).

2nd step

At the 2nd step, the user should submit detailed information regarding: 1) the type of event (Fig.2), 2) a short description about the evolution of the event, 3) the accompanied phenomena (hail, gale winds, precipitation and lightning (Fig.3), 4) the number of fatalities/injuries and the damage on crops/structures, 5) upload files verifying the event and 6) user's contact details


Fig.2: Screenshots (in Greek) of the second step LACAE's online tornado report system (http://tornado.geol.uoa.gr). The screenshot illustrates the six subcategories (a-f) regarding the type (a), the evolution (b), the accompanied phenomena (c), the number of fatalities or injuries, (d) attach media files (e) and user's contact details (f).

Fig.3. Screenshot (in Greek) of the second step LACAE's online tornado report system (http://tornado.geol.uoa.gr), illustrating the reported accompanied phenomena.

Overview and Quality control flowchart
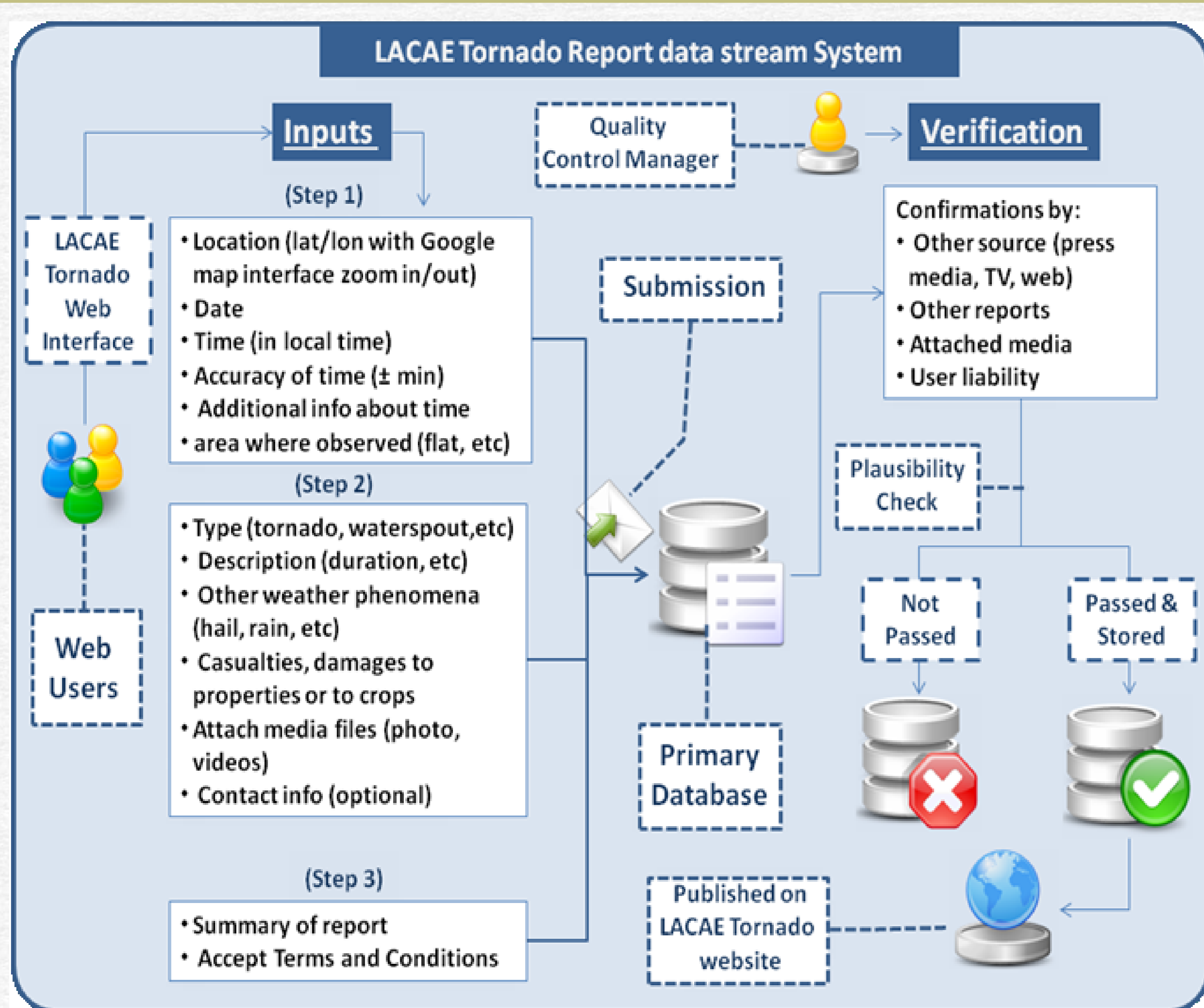
Conclusions

LACAE is in close collaboration with ESSL and constantly contributes ESWD database with numerous verified tornadoes and waterspouts events that occurred in Greece. More than 181 reports have been submitted to LACAE's online tornado report system, but only 168 passed the plausibility check. The 23 unconfirmed tornado reports have been remained stored in LACAE's server for future cross check with other sources (e.g. ESWD).

Future plans concern the development of the second (updated) version of LACAE's online tornado report system that will be available to multilingual users and expand the categories of reporting severe weather events introducing, hail, severe precipitation, gusty winds and lightning impact. To this direction, the updated version will be able to illustrate online thematic maps and all events will be easily accessed by individual researchers or public in a compatible format to GIS software or Google earth application.

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