




The use of the modern methodologies for the study of hydrometeorological measuring systems

Sabirova Marina Valerievna, Kazan (Volga Region) Federal University, E-mail: Imarina.isaeva@mail.ru


Bakanin Alexandr Sergeevich, Kazan (Volga Region) Federal University, E-mail: mailaru@mail.ru

Korotkova Nadezhda Vladimirovna, Saratov National Research State University named after N.G. Chernyshevsky, E-mail: fonadia@yandex.ru





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Mobile application technology that allows processing images and recognizing various objects of hydrometeorological measuring systems on them has been analyzed. Examples of real image processing results and images of the submitted application are given. Recommendations for the use of this modern methodology in different focus areas of hydrometeorology are given.

The objective of this research and of electronic educational product obtained by it is to provide conditions for the students' development in different areas of hydrometeorology, for professional and personal self-determination of student.




Aurasma mobile application

Aurasma operation principle is akin to routine recognition technology of QR codes. The application uses phone camera, GPS, Bluetooth, WI-FI, acceleration indicator and horoscope to identify various objects from the external environment. In the following these objects are broadcast on the device screen with overlaid video, pictures, photographs or other files called auras.

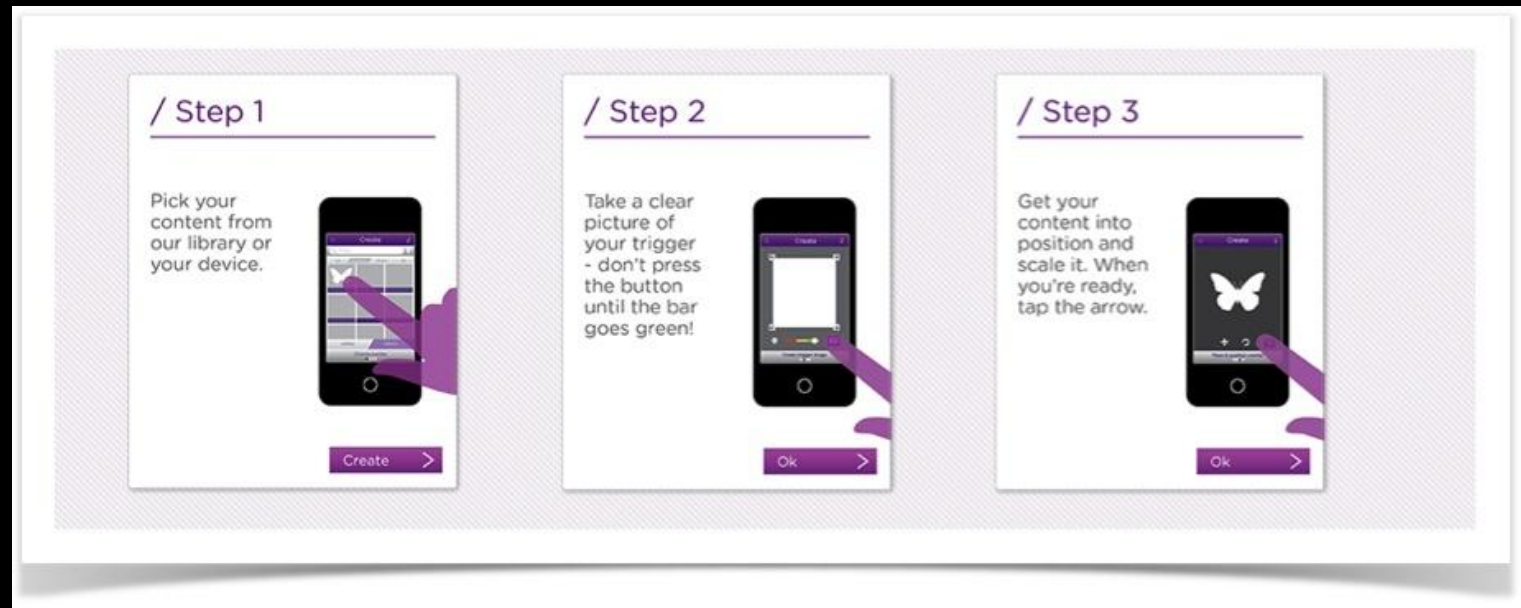




Necessary elements for the work with Aurasma:

1. Smartphone, tablet or phone with integrated camera
 2. Android (IOs) operating system.
 3. Internet access.
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Creating your own Auras using Aurasma Studio



The sequence

1. Become a Partner
2. Create Trigger
3. Create Overlay
4. Create Channel
5. Create Aura then users follow your Channel

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The creator of mark upon which Aurasma will recognize object customizes displaying result and broadcasting time.

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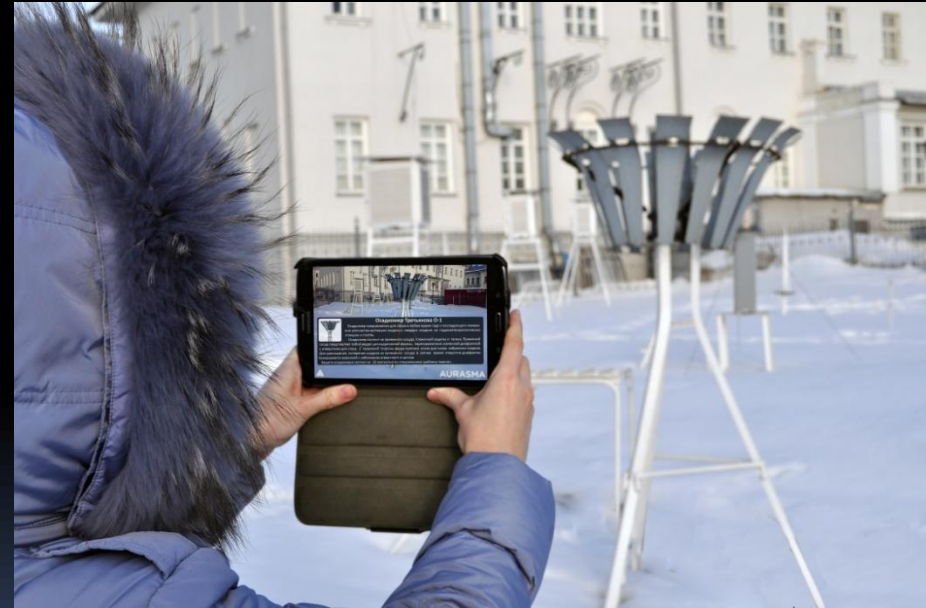
Creators of Aurasma enclosed a pack of predefined auras, but it is assumed that all of them will be created by the users themselves.

Non commercial user account allow also to create unlimited auras in application. Aurasma application refers to the channels when searching. Latter are used as a folders holding a collection of auras.



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Most common use of this application is possible in studying discipline "Information-retrieval instruments in hydrometeorology" in particular on practical classes. Catalog of hydrometeorological instruments and complexes will help to easily identify the type and the model of measuring device in practice.



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In “auras” (channels) you could bring in copious information on operating principles and description of each and every hydrometeorological instrument. Location and number of meteorological instruments and thermometer screens on site according to the Russian meteorological service requirements and rules could be checked using a model plan itemized in Aurasma application.



Use of this application is possible in studying

In Meteorological physics module students could use this application while studying sections:

- "Types and forms of clouds";
- "Optical phenomena in atmosphere";
- optical and light phenomena (color of the sky);
- studying types of mixed and solid precipitations;
- definition and analysis of developmental stages of one or another convective phenomenon (for example cumulonimbus and Cb cloud, sandstorm);
- Aerological diagrams;
- when studying module "Space research methods" it is possible to use Aurasma application in the analysis of cloud field space images and state of the atmosphere;
- hydrologic phenomena.





Thanks for your attention!

