STANDARD

IEDU360.EU

SHARE EUROPE
An European initiative for promoting spatial visualizations in education.

The current Standard is forming the process and quality of the users work in the IEDU360.eu Platform and the Image Bank – 360image.net. Those sites are created with the financial support of the **European Programme Erasmus+,** under the project **Sharing Interactive Education in Virtual and Mixed reality 2019-1-BG01-KA201-062321**. The project is implemented with the partnership of 7 organizations:

- Interactive Bulgaria Foundation – project coordinator
- Prosveta Foundation, Bulgaria – partner
- 18th High-school William Gladstone, Bulgaria – partner
- Geniko Lykeio Agios Nikolaos, Greece – partner
- KULTURALIS OROKSEG MENEDZSEREK EGYESULETE, Hungary – partner
- TUROREIN - Verein zur Förderung transnationaler Jugendinitiativen, Austria – partner
- Czech VR Agency s.r.o., Czech Republic – partner

More about the project, its results and activities, can be found at the project Web page - https://www.interact.bg/shareeurope

The project's general **objective** is to support the implementation of innovative teaching methods, through integration of virtual and mixed reality (VR and MR) technologies in the educational approaches across Europe. The project general objectives will be supported through the successful achievement of three specific objectives:

+ ensuring high-quality and inclusive education, through enriching learning experiences while supporting effective use of digital technologies and

encouraging activities that link learning with real life experience, through the application of virtual and mixed reality;

+ empowering teachers and school leaders by strengthening targeted collaboration, learning networks, online communities and innovative pedagogical practices among teachers and school leaders, and involving other relevant stakeholders;

+ enhancing European cooperation in the field of school education through building a European Network for VR Technology in Education for establishment of closer contacts between European schools stakeholders, teachers and school leaders, and supporting policy reforms in the educational field.

The **target groups** of the project include:

+ Disadvantaged groups of students in schools, such as children with difficulties in learning, within culturally diverse communities, as well as those with physical disabilities.

+ Teachers from all school grades, more specifically those teaching subjects in geography, history, nature and human sciences, ITC;

+ School leadership and networks, specifically school managers, influencers in the field of school education, policy and decision makers.

ФОНДАЦИЯ ИНТЕРАКТИВНА БЪЛГАРИЯ

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PLATFORMS AND TERMS

IMAGE BANK – 360IMAGE.NET

IEDU360 Image bank (360IMAGE.NET) implies a standard procedure for creation and upload of images. Adherence to those standards is a key to successful development of the IEDU educational resources and usability of these resources by the students, specifically those with specific educational needs. The following general specifications and restrictions are implied:

✅	❌
Dimensions: 6000x3000 pixels and 30000x15000 pixels. /2:1 aspect ratio/	No logos or advertisements are allowed
Projection: Equirectangular/spherical	No holes or black areas in the sky or distorted or badly retouched sky (zenith)
Format: RGB JPEG	No huge hole in the nadir nor distorted bottom of the panorama (nadir) - Exceptions: Shadows, tripods, small holes and small mirror balls are ok
File size: ~20 MBytes	No major stitching, color or exposure errors

Erasmus+

#ShareEurope

Sharing Interactive Education in Virtual and Mixed reality

2019-1-BG01-KA201-062321

❗ The panorama must be leveled. The horizon needs to be in the center of the image so it does not look curved or leaning one way or another unnaturally. One way to test this visually is to rotate the image while checking to be sure that vertical lines, like telephone poles or trees, remain vertical as you pan around

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IMAGE BANK – ROADMAP

The process for production of the images follows three main stages. The diagram represents the proposed production roadmap:

STAGE I

GEAR UP

BUY equipment that can meet the image requirements.

RENT equipment that can meet the image requirements.

STAGE II

SHOOT

Take the photos yourself.

Hire photographer to take them for you.

Team #ShareEurope will provide guidance.

STAGE III

PRODUCE

Produce the panoramic images yourself.

Provide the raw images to the #ShareEurope team for production.

Team #ShareEurope will provide guidance.

IMAGE BANK – STAGES

Stage I – Gear up

In order to shoot panoramic images with the aforementioned specifications, you have to use appropriate photo equipment.

The basic equipment includes:

❏   DSLR/Mirrorless Camera;
❏   Fisheye Lens /preferably/;
❏   Tripod;
❏   Panoramic Head;
❏   Shutter remote control;
❏   SD Card.

In this stage you have to choose either to buy or rent the needed equipment.

❖   One of the options is to rent the equipment. It will optimize the budget according to the shooting days. This option is recommended if you do not have the necessary expertise within your organisation, for it will save time by skipping the process of choosing the right equipment and calibrating it for action.

❖   The other way is to buy the recommended equipment. If you choose this option you should provide the necessary funds for the purchase. This option will be more resourceful in terms of time and funds, but on the positive side - it will

build capacity within your organisation and will raise your level of expertise. Our team will provide guidance for selecting the optimal equipment and calibrating it.

Stage II: Shoot

The process of shooting a panorama image requires specific expertise, which is usually provided by professional photographers, or experienced staff. If you do not have such an experience, you could try to upskill your organization in shooting panorama images. We are offering two options:

❖   The first option is to hire a photographer, who can operate the equipment and take the needed raw images. As in STAGE I, this way will save you time by skipping the process of learning how to operate the equipment in the context of taking panoramic images.

❖   The other option is to take the photos yourself, which requires basic photographic knowledge, as well as the use of advanced techniques, guidelines for which will be provided by our team.

Stage III: Produce

Once you've got the raw files, it's time to process them and put together a panorama. This stage is the most time consuming and requires the use of different types of software to achieve the end result. Again, we are offering two options, depending on your expertise and capacity, as well as willingness to spare time and to fund the purchase of the necessary software.

·   The first is to send us the raw files, and we will produce the images.

- The other option is to produce them yourself. Choosing this option will require a course in image processing and stitching to assemble a panorama, provided by our team. Also you may have to pay for software licenses. Possible options are:

  - Color Grading Software - Adobe Lightroom /optional, paid/
  - Stitching Software - Hugin /free/
  - Post Processing Software - Adobe Photoshop /paid/

IEDU360

Iedu360 is an innovative platform for creating digital educational content through the use of 360-degree spatial images, enhanced with clickable interactive elements containing educational content in various media formats.

The platform strives to maintain a constant set of high-quality educational resources, which we will henceforth refer to as **PROJECTS**.

We will also from here on refer to these 360 degree spatial images as **PANORAMAS**.

Any educational content in text, graphic or video format other than panoramas will be referred to as **CONTENT**.

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PROJECT = PANORAMA + CONTENT

In order for them to be classified as high quality, the projects must be created with a certain minimum acceptable **quality of the panoramas** used and the **content** by which they are upgraded must be quantitatively sufficient to achieve **educational integrity**.

Educational integrity means that a quality project will resemble a complete lesson that would achieve both the **broader goals** it aims for and the **specific goals** - the measurable outcomes of the lesson, namely the specific skills or knowledge that students should have acquired by the end of the lesson. Educational integrity is achieved not only through the **completeness of the educational content** used, but also through the **visual presentation of this content**.

All panoramas that can be used to create projects can be enhanced with additional clickable interactive elements such as:

- Text spot
- Video spot
- Image spot

IEDU360 – ROADMAP

IT IS RECOMMENDED THAT THE PROCESS OF CREATING A QUALITY PROJECT SHOULD GO THROUGH THE FOLLOWING STAGES:

STAGE I

SELECTION OF TARGET AUDIENCE AND TOPIC

STAGE II

SELECTION OF PANORAMAS

STAGE III

SELECTION OF CONTENT - TEXT/IMAGES/VIDEOS

STAGE IV

ASSEMBLING

IEDU360 – STAGES

STAGE I | SELECTION OF TARGET AUDIENCE AND TOPIC

In this document, we will outline the framework for creating a quality project. We will only pay attention to the recommended technical requirements when creating a project, since the selection of **target audience**, **topic**, **educational content** and **visual aids** is strictly related to the needs and goals of the author.

STAGE II | SELECTION OF PANORAMAS

After we have already selected the content based on the target audience and the topic, it is time to proceed to the creation of the project itself. When choosing suitable panoramas for the project, it is necessary to comply with the minimum technical parameters that they must meet:

TYPE

360 PHOTO SPHERE

RATIO

2:1

PROJECTION

EQUIRECTANGULAR

SIZE

<=15mb

FORMAT

JPEG | PNG

STITCHING

NO ISSUES

RESOLUTION

>=4000x8000px

HORIZON

STRAIGHT

According to the project, a repository for downloading panoramas for creating educational content has been created at the following domain: https://360image.net/. All panoramas available in this repository meet the recommended specifications above.

Attention! If you are creating a **video lesson**, you must use video material only from **YouTube**, and you must copy the link provided to you after pressing the **SHARE** button. In this project format, the **text/image/video spot** enhancement is not available.

STAGE III | SELECTION OF CONTENT - TEXT/IMAGES/VIDEOS

The selection of **target audience**, **topic**, **educational content** and **visual aids** is strictly related to the needs and goals of the author.

The additional **images** that can be used to enhance the panoramas can be in **jpeg** or **png** format.

The additional **videos** that can be used to enhance the panoramas can only be from **YouTube**, for which you need to **copy** the **main link** of the video.

STAGE IV | ASSEMBLING

In the project assembly stage, certain requirements must also be taken into account in order for the project to be classified as a quality one.

The minimum requirement for the number of used panoramas in one project is **3 panoramas**.

The distribution of the overall educational content in all formats should be balanced between the panoramas used through the text/image/video spots and the main content of the project.

For example, if you have prepared **25 small snippets of text/photos/video**, **main text** and **5 panoramas** in advance, this means that you should place the **main text**

in the main content of the project and distribute **5 text/image/video spots** in each of the **5 panoramas.**

It is recommended that the panoramas be located on the **map** as this would assist the lesson objectives. It is necessary to locate **each panorama separately** on the map.

If the panoramas are located at a **close distance** from each other, it is also necessary to place **transition spots** for movement between the respective panoramas.

FOR ADDITIONAL AND DETAILED INFORMATION ON HOW TO CREATE PROJECTS AND HOW TO USE THE PLATFORM TOOLS, PLEASE SEE THE PLATFORM TUTORIALS SECTION OR CONTACT US TO LEARN MORE ABOUT THE TRAININGS WE CONDUCT ON USING THE PLATFORM.

For Teachers - https://iedu360.eu/en/how-to/teachers

For Students - https://iedu360.eu/en/how-to/students

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