Annex 1
Contract no
Terms of Reference

giz

Programme: Private Sector Development and TVET in South Caucasus (PSD TVET SC)
PN: 16.2179.6-002.00

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Activity: Introduction of Virtual Reality (VR) tools for Dual TVET

Period: June – December, 2021

1. Brief information about the programme

The Private Sector Development and Technical Vocational Education and Training programme developed jointly with the public partners and private sector in the South Caucasus Countries, aims at promoting the private sector development with high attention to employment impacts and close integration of vocational education and training.

Due to the small domestic markets with limited purchasing power, the South Caucasus Countries have focused so far on expanding foreign trade to promote economic development. The export-dedicated strategy achieved only limited success in improving the employment situation and living conditions. Employment growth in sectors that afford the greatest potential for *pro-poor growth* and employment promotion in comparable economies and also in South Caucasus, such as tourism and agricultural, cannot be sustained, because businesses lack well-trained skilled labour.

The core challenge consists thus in the difficult framework conditions for sustainable economic development in the sectors relevant for employment. The capacities available are not yet sufficient to generate the envisaged employment and growth momentum.

Therefore, the programme **module objective** is: The conditions for sustainable economic development have improved in selected sectors relevant for employment.

The programme adopts the integrated approach of German development cooperation in employment promotion. It addresses both the supply and demand side of the labour market to lay a better foundation for employment.

The programme operates in three intervention fields:

Intervention field 1 aims to strengthen capacities for improving competitiveness in the sectors relevant for employment.

In **intervention field 2**, it supports the cooperation of the private and public actors to improve the labour-market relevance of selected training courses.

Intervention field 3 seeks to strengthen the regional and international exchange of experience in sustainable private sector development and dual-oriented vocational training.

The programme is scheduled for a term of 6 years (from April 2017 to April 2023).

2. Context and current situation in the field of assignment

The growing computing power of mobile devices and global digital transformation have taken augmented reality (AR) and virtual reality (VR) technologies to a fundamentally new level, going beyond the entertainment industry and covering a wide range of new areas of human activity. Nowadays AR and VR technologies are widely used for the design, training and retraining of engineers, architects, designers, realtors and retailers. The training programs and simulators which are based on VR technologies, find their special niche for the development of future specialists' professional skills.

In the learning environment, VR technologies create a complex effect on human perception and provide interaction in real-time with support by the helmets or other technical means that dynamically update the space visible to the learners. The possibility to recreate a real training environment, which in normal conditions is associated with high risk, costs of consumables or personnel, the need to reproduce certain working conditions and processes, increase the geography of VET learners, undoubtedly make VR technologies attractive for vocational education and training (VET).

The development of content and software for VR can be compared with the mobile applications and categorised into two types:

1. focused on the development of soft skills and providing the creation of impressions, emotional experiences in certain situations, as well as counselling and guiding, for example, demonstration of the product and its characteristics;
2. focused on the development of the professional skills of future employees so that they can solve applied problems and increase economic efficiency, for example, prototyping and visualisation, assistance in the operation of equipment.

Nevertheless, despite the great interest, there are certain challenges in the development of VR and AR technologies:

- sizeable or inconvenient headsets for use with VR products. Users are confused by the design and report on the inconvenience of glasses;
- lack of quality content, its monotony, an imperfection in implementation;
- high cost of devices;
- legal issues related to data privacy and cybersecurity.

The partners' assessment in Armenia shows a high potential for the integration of VR videos in the processes of VET, especially in the field of career orientation. In a further stage, such videos could also be integrated into the learning processes of VET, e.g. in the form of soft skills development.

Furthermore, the assessment shows a large interest in developing capacities and local expertise in the elaboration of VR videos. This would enable the possibility of developing VR videos locally, which could be integrated into the career guidance and learning processes of VET. The overall remaining questions arise with respect to the potential demand for such technologies in VET as well as with the financing and maintenance of such videos in future.

3. Conditions of the assignment

3.1 Objective and tasks

The objective is to develop a 360-degree (or 360° video) immersive video for career guidance and professional orientation of the pupils and VET students in hotel services based on VR technology. Hotel services include reception guests, room, food and laundry service, restaurant and bar in the hotel, and security. By using 360° video, target groups will experience the full location and engage further with the other informational materials presented.

360° video, as a way to showcase complex situational scenarios in hotels that are difficult to explain with images, words or even conventional video, will support the target group to feel the potential of work environment and decide on future professional development.

General Requirements:

- 360° video is recorded in an omnidirectional form so that viewers can look in any direction while the video plays.
- 360° video will be used on Oculus Quest standalone headset VR[1] as native application. If necessary the applicants can visit the PSD TVET GIZ office to get familiar with the tool.
- The navigation design should support to scene-to-scene transition.
- The human's actions and narrative specification should be produced and used during the video production and editing process.

[1] Oculus Quest is an all-in-one gaming system built for VR. The system consists of a VR headset and a pair of Oculus Touch controllers. The headset has four wide-angle sensors that power Oculus insight, which precisely tracks the environment and instantly translates movements in to VR. The controllers can be moved freely in space, allowing the user to use gesture control to operate the player. The interface is also extended through both simple voice control and integration with Bluetooth controllers.

- A methodological approach for the design of 360° videos should be presented in the proposal.
- The 360° video should be in line with the Web Content Accessibility Guidelines (WCAG).
- The length and pace of the video have to ensure that it contains all the necessary information and does not result in symptoms such as motion sickness, dizziness, and headaches.

3.2. Tasks and deliverables

The tasks are divided in three phases: a) design, b) development, c) testing and finalisation and will include analysis of the content areas (career guidance and hotel services) and needs of the target groups. During the last phase the final content and using guidelines will be presented to VET stakeholders.

The hired company will be responsible for the selection, coordination and liaising with the subcontractors and beneficiaries throughout the whole process of the project. Selection of the subcontractors should be discussed and approved by GIZ. Development process will be coordinated with the VET stakeholders: Ministry of Education, Science, Culture and Sport, National Centers for VET development and professional orientation. The selection of the filming place will be done by GIZ.

Step	Tasks/Deliverables	Time / location	Man/Days
A. Design of the content			
1.	Needs assessment and analysis of the content areas: - Career guidance and professional orientation process of pupils and VET students; - Existing job descriptions and positions in hotel services. **a)** Evaluation of the questionnaires, **b)** Development of recommendations for the scenarios.	June, 2021/ Yerevan	Up to 15 days

Step	Tasks/Deliverables	Time / location	Man/Days
2.	Design of the concept and scenario: - Storyboard; - Scripts; - Place; - Actors. **a)** The scenario is discussed and agreed **b)** Mid-term report	June – July, 2021/ Yerevan	Up to 25 days
B. Development of the 360° video			
3.	Production of the video material: - Filming - Voice acting (Armenian, English) - Style frames - Draft animation - Timing and transitions between the scenes - Interaction functionality The draft video is agreed, all comments and suggestions are integrated.	August-September, 2021/Yerevan	60 days
4.	Composing, rendering and sound design. The final video created by the software.	October, 2021/ Yerevan	10 days
C. Testing and finalisation of the 360° video			
5.	Testing of the video content and interactive elements Video content is checked grammatically and technically and is ready for hand over	October, 2021 /Yerevan	Up to 20 days
6.	Presentation of the VR content to VET stakeholders Approval by the VET stakeholders and final report	November, 2021/ Yerevan	3 days
Total			**138 days**

Round-table discussions, presentation and reimbursable costs are not foreseen in the implementation of this assignment. The timeline with exact days for each task will be agreed before the implementation of this assignment.

3.3. Coordination and communication

- The hired company shall report to PSD TVET Programme Expert and closely cooperate with VET stakeholders. The Contractor is responsible for monitoring all deadlines and transmission of deliverables.
- The team shall keep GIZ updated about all the stages of project implementation including selection of subcontractors and shall provide any information related to this assignment and required by GIZ.
- GIZ visibility should be kept throughout the whole period of implementation of the assignment. Wording, logos and other GIZ corporate branding elements in materials should be agreed with GIZ beforehand.
- The hired company shall comply with GIZ regulations for procurement, service provision and/or data security.

3.4. Submission Requirements

The hired company should meet the following requirements:

- Proven expertise in IT application development, design of video materials and VR content,
- Present the example(s) of the 360° videos (min 2 min),
- Pool of experts: CVs of the experts and/or profiles of subcontracted companies that will be working on the project for the whole contracted period with work samples shall be submitted,
- Excellent understanding of and ability to meet the demands and standards of an institution working in field of international development cooperation. Prior experience with international organisations is an asset,
- Recommendations from international organisation will be regarded as an asset
- Fluency in English and Armenian; all final deliverables in Armenian,
- Flexibility and ability to meet tight deadlines.

3.5. Other provisions

- Please note that for data security reasons, filled-in paper or digital declaration of consent for all the photos or videos taken during the events, round-table discussion and etc. will be required. GIZ will provide the consent form.
- Please note that the selection of all the subcontractors should be agreed with GIZ. GIZ should also be involved in key working meetings with subcontractors including brainstorming, strategy development etc.

- All the personal data (names, surnames, contact details, emails, phone numbers etc.) processed before, during and after the event and related to it should be treated as confidential, transferred to GIZ and by no means disclosed to other parties.
- All the print and digital materials produced before, during and after the events and related to it should be transferred to GIZ. In this regard, the contractor shall sign an annex on transfer of copyright, attached to the agreement.