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Acronyms and abbreviations

ANAU	Armenian National Agrarian University
AM	Armenia
BE	Belgium
CBHE	Capacity Building in the field of Higher Education
DL	Deliverable leader
EAB	External Advisory Board
EACEA	The Education, Audiovisual and Culture Executive Agency
EC	European Commission
HE	Higher Education
HEI	Higher Education Institutions
GIT	Geo-Information Technologies
KG	Kyrgyzstan
KTH	Royal Institute of Technology
KSMU	Kyrgyz State University of Geology, Mining and Natural resources
KSUCTA	Kyrgyz State University of Construction, Transport and Architecture
LFM	Logical Framework Matrix
NUACA	National University of Construction and Architecture of Armenia
OshTU	Osh Technological University
PMO	Project Management Office
QAP	Quality Assurance Plan
QPLT	Quality Plan Leading Team
SC	Steering Committee
TOC	Table of Content
UL	University of Ljubljana
UPV	Universitat Politècnica de València
VUB	Vrije Universiteit Brussel
WP	Work Package
WPL	Work Package Leader
YSU	Yerevan State University

About GeoTAK

GeoTAK aims to support the needs of Armenia and Kyrgyzstan towards the development of postgraduate Higher Education programmes in Geoinformation Technologies (GIT) and to strengthen the links in research and innovation between Higher Education Institutions (HEI), industry and administration in Armenia and Kyrgyzstan.

More specific objectives of the project are:

- To identify research and development needs of Kyrgyzstan and Armenia in the field of Geoinformation Technologies;
- To create a Research Node in GIT per partner country to promote and harmonise collaborative innovation projects and joint research lines;
- To improve and/or update research laboratories of GIT;
- To train trainers from partner countries in relevant topics of GIT that have a special interest in the regional development of innovation and environmental protection;
- To provide teachers and managers from HEI's in partner countries knowledge and skills in transversal topics of higher education, such as quality assurance practices, innovation and entrepreneurship, curricula development by competencies and learning outcomes, and others following Bologna process standards;
- To create interdisciplinary postgraduate programmes (courses and joint PhD programmes) that enhance the potential of GIT in different areas and degrees and focus research outputs on contemporary problems at regional and global scales;
- To foster and strengthen the cooperation between university and industry in those topics identified as critical for the sustainable development of the partner countries;
- To exchange and share experiences and perspectives between two small countries with similar recent historical backgrounds, that are facing some common socio-economic challenges and need to stimulate new strategies in research and development.


The objectives of this project are focused on the development and reform of postgraduate degrees, particularly PhD, in a way that students from different disciplines –engineering, technology, environmental sciences and natural resources, etc.- can access this transversal knowledge and tools and apply to their original backgrounds. This interdisciplinary conception of postgraduate education will have a multiplicative effect in the modernisation of professional profiles and will foster innovation and applied research.

Another main goal of the project is to strengthen the links university-enterprise, by creating a National Research Node ruled by universities but with the participation of industry and other social stakeholders by the creation of an Advisory Board.

For more information <https://geotak.webs.upv.es/about-the-project/>

Academic Consortium partners:

 UNIVERSITAT POLITÈCNICA DE VALÈNCIA	Universitat Politècnica de València-UPV (COORDINATOR)
 VRIJE UNIVERSITEIT BRUSSEL	Vrije Universiteit Brussel - VUB, Brussels, Belgium
 University of Ljubljana	University of Ljubljana (UL)
	Royal Institute of Technology (KTH)
	Kyrgyz State University of Construction, Transport and Architecture (KSUCTA)
	Kyrgyz State University of Geology, Mining and Natural resources (KSMU)
	Osh Technical University (OshTU)
	National University of Construction and Architecture of Armenia (NUACA)
	Yerevan State University (YSU)

	Armenian National Agrarian University (ANAU)
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Non academic partners :

Ministry of Education and Science of Kyrgyzstan (MoES)

Ministry of Education, Science, Culture and Sports of the Republic of Armenia (MESCS)

Cadastral Committee of the Republic of Armenia (CCRA)

State Cartographic and Geodesic Service at the Kyrgyz State Agency for Land Resources under the Government of Kyrgyzstan (Goscartography)

1 Introduction

1.1 Purpose

The present document is the **Quality Assurance Plan (QAP)** for Erasmus+ CBHE (JP) GeoTAK towards developing Interdisciplinary Postgraduate Programmes and Strengthening Research Networks in Geoinformation Technologies in Armenia and Kyrgyzstan. The QAP defines the role and responsibilities of each partner and the procedures and templates to be followed for issuing reports and deliverables. It assists in monitoring the progress of the work and is to be used as an instruction guide for participants of GeoTAK regarding information management, document publication, quality assurance issues, project organisation and contact information.

It is important to note that due to the global COVID-19 outbreak, the timing and schedule in this QAP are indicative and can be subjected to changes.

1.2 Application and validity

The requirements contained in this QAP shall be applied by all staff engaged in GeoTAK. Revisions of the contents of the QAP become valid from the date of issue.

1.3 Administration

The Work Package Leader (WPL) is responsible for the administration of the QAP. Proposals for modifications or additions must be submitted to the WPL, which updates and issues the revisions of the QAP. All revisions need approval by the project Coordinator.

1.4 Dissemination

The QAP and its annexes are confidential information available only for the beneficiaries and may be publicly circulated only with the approval of the Coordinator.

Copies of this plan are distributed to each participant of the project after the Kick-off meeting. It will also be available on the project intranet web portal.

1.5 Quality plan structure

The quality plan is composed of 5 sections: an introduction, quality management, evaluation indicators, risk assessment and annexes (i.e. templates). The overview of the exact structure can be found in the graph below.

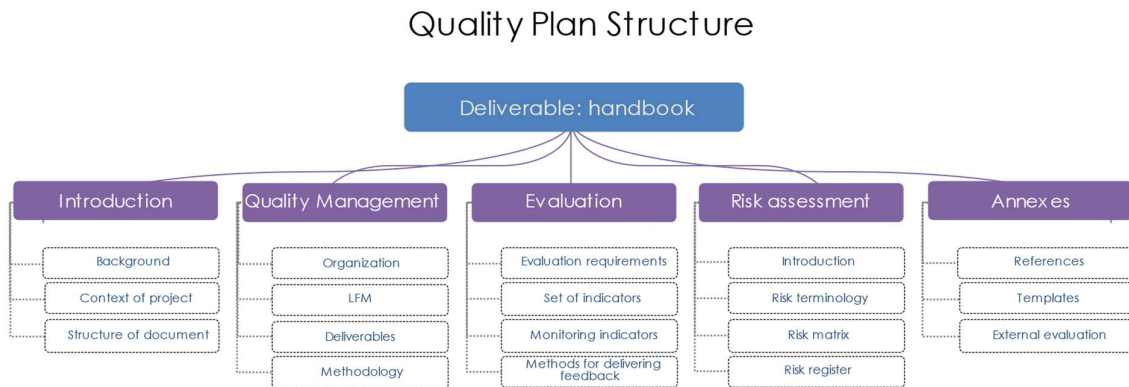


Figure 1: Quality Plan Structure

2 GeoTAK Project Organisation

2.1 Overall organisation

The overall organisation of the GeoTAK project is structured and managed to ensure the achievement of the overall goals of the project.

The project coordinator (UPV) supervises the WP4 project execution (in collaboration with the WPL) and act as the only intermediary vis-à-vis the European Commission, more specifically The Education, Audiovisual and Culture Executive Agency (EACEA), as defined in the Rules for Participation by the EC.

GeoTAK is divided into five Work Packages (WPs), in which most of the activities focus on research-based academic training and enhancing the master curricula in the involved partner HEIs. The scheme of governance (Figure 1) shows the structure of GeoTAK overall organisation for assuring project quality.

Project Organization: Internal Structure

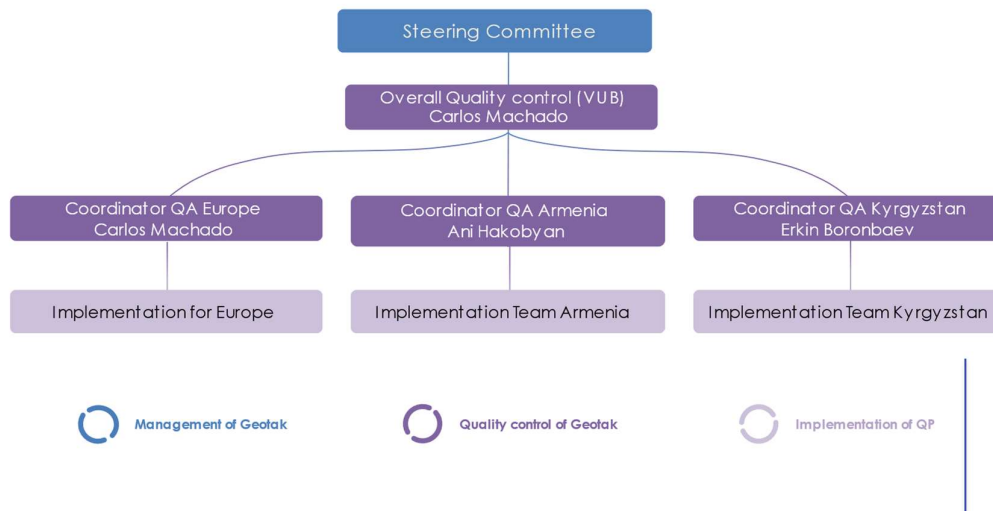


Figure 2: Quality Assurance Team

To ensure the high quality of GeoTAK, the consortium has put two monitoring and evaluation mechanisms into place: an internal evaluation and an evaluation with the contribution of an External Evaluator.

2.2 Roles and responsibilities of project bodies and actors:

2.2.1 Coordinating Team

The Coordinating Team (UPV) is the single point of contact between the EACEA and the Consortium and acts as the contractor for the EACEA with respect to the Grant Agreement.

UPV will:

- Ensure the overall coordination of the project in collaboration with the Joint Coordinating Team;
- Report to the Steering Committee on strategy and activities;
- Undertake all necessary legal and ethical responsibilities and obligations;
- Have the overall responsibility on financial management, including budgeting, resource allocation and distribution, the legal and financial contracting of potential subcontractors and all expenditure, financial controls and audits;
- Submit reports and deliverables to the EACEA;
- Issues the detailed project work plan;
- Act as a focal and representative point for all kind of external and internal requests;
- Verify, prior to dissemination, the application of any intellectual property rule.

2.2.2 QAP National Coordinators

The QAP National Coordinators as indicated in figure 1 shall work in close contact with the Coordinating Team and the WPL to assure a successful running of the overall organisation of the project in Armenia and Kyrgyzstan.

The QAP National coordinators will:

- Ensure the overall coordination of the project at national level in collaboration with the Coordinating Team;
- Mitigate differences in (academic) cultures and function as the point of contact for specific (technical or administrative) issues related to HEIs in Armenia and Kyrgyzstan;
- Work closely together with the WP Leaders (WPLs) in Armenia and Kyrgyzstan and assist them in their responsibilities as WPLs;
- Will report to the Coordinator and the WPL on these above-mentioned issues and proactively work together with the Coordinator and WPL in finding appropriate solutions;
- Will lead the WP at national level in collaboration with the WPL (VUB);
- Assist in the implementation of the QAP;
- Assist in the monitoring of work progress, planning and issuing of deliverables;
- Assist in the consolidation and edition of the reports.

2.2.3 QAP Implementation Committee (IC)

The QAP **Implementation Committee** (IC) is chaired by the WPL, in close collaboration with the main Coordinator and other WPLs.

The IC is responsible for:

- Day-to-day project QAP management decisions, follow-up and adaptations of technical roadmaps;
- Assessment of the QAP results obtained and the relevance of future work with regards to these results;
- Preparation of the periodic QAP management reports;
- Discussion and proposal of strategic orientations for the work plan;
- Discussion of risk issues and in particular possible mitigation schemes;
- Discussion of the harmonisation issues of the detailed work plan.

All partners are responsible for the quality of their input to the project, in particular their mobilities and their WP reports. They will fully participate in the evaluation process and defined activities. The IC monitors and analyses the WP reports; guides the delivery of milestones and deliverables with quality procedures; monitors timetables for the activities of each WP; and ensures cross-activity integration and gender-balance.

The IC shall discuss at least once every six months. For financial efficiency, these meetings will be organised in conjunction with the plenary meetings or by zoom.

All these reviews and assessments lead to proposals to be validated by the Steering Committee (SC).

2.2.4 Steering Committee (SC)

The Steering Committee is the governing body of the project. It consists of one representative from each partner at the decision-making level. The SC gives the strategic directions to the project and supervises the implementation of the activities.

The SC will decide on management issues, modification of the work plan, budget distribution, etc. All GeoTAK partners will be systematically consulted on decisions with significant impact on the project (such as modification of the consortium, major budget shifts, amendments of Grant Agreement, etc.). The SC shall meet at least once a year at alternate locations; for financial efficiency, these meetings will be in conjunction with the plenary meetings.

2.2.5 External Evaluation Committee

Three independent international experts and consultants will compose an External Evaluation Committee. The GeoTAK consortium will identify and suggest names of experts in GIT from EU, AM and KG. The selected experts will evaluate the project in situ at the end of the second year.

Selected experts will advise the consortium on the quality of the project by analysing the Internal Quality Assurance reports, visits and interviews to the partners. They will also meet the main actors (teachers, students, administration and industry), visit the new GIT laboratories, analyse the curricula development, and quality assurance outcomes, that will be presented to them by each partner. They will write an evaluation report highlighting the main advances, relevant issues and providing suggestions to the partners to improve the results. This will complement the evaluation at institutional and national levels performed during the project. The report is expected to be presented to the GeoTAK Steering Committee by the end of 2022.

The planned indicators for the evaluation of these objectives are: mobility reports and training tool-kits; workshops and conference records: participant lists, agendas, hand-outs, travel records, quality reports; the reports on deliverables; project website contents and updates, feedbacks, quality assurance reports; number of training modules; meeting minutes, among others. The measurement of the indicators will be conducted based on partner surveys and visits, self-assessment reports and analyses of activity reports.

2.2.6 Work Package Leaders (WPLs)

WPLs (see Table 1) are in charge of:

- Coordinating the work of their WP
- Ensuring a proper and timely execution and submission of the deliverables
- Implementing project management decisions in their WP
- Organising periodic or ad hoc technical meetings, when required for the optimised execution of the work plan
- Reporting to the Coordinator and Joint Coordinator when required for project management

Work Package	Work Package Leader
WP 1: PREPARATION – need analysis	KSUCTA
WP 2: DEVELOPMENT of research networks	KTH
WP 3: DEVELOPMENT of research capacities	UL
WP 4: Quality Plan	VUB
WP 5: Management	UPV
WP 6: Dissemination and Exploitation	NUACA

2.3 Contact information

Contact information of the Coordinator, Joint Coordinator, External evaluator, WPLs representatives and members of the Steering Committee, is available in the Annex 1 of this document. Future versions will be given on the project's intranet web portal.

2.4 LFM

The quality WPL team is responsible for monitoring, controlling the project progress and implementing and coordinating the project activities listed in the Logical Framework Matrix (LFM) and workplan. The quality WPL team will pay attention to the attention of progress and the indicators that need to be used to measure that progress as illustrated below.

Wider Objective:	Indicators of progress:	How indicators will be measured:
The main goal of the project is to develop postgraduate Higher Education programmes in Geoinformation Technologies (GIT) and strengthening the links in research and innovation between Higher Education Institutions (HEI), industry and administration in Armenia and Kyrgyzstan.	<ul style="list-style-type: none"> -Increased quality of postgraduate programs in GIT by training teachers and students. - Number of staff, stakeholders and external entities involved in the project. - Increased cooperation among universities, industry, and administration in GIT, innovation and research. - Satisfaction of people involved in the project: partners and trainees. 	<ul style="list-style-type: none"> - Mid-term and final evaluation reports. - Development of a Quality Plan for the project. - Contribution analysis on project documentation, records, feedback from the industry and administration. - Internal analysis of partners activities developed and their impacts, curricula, course descriptors, and educational programs. - Surveys and questionnaires on social actors, society and stakeholders.
Specific Project Objective/s:	Indicators of progress:	How indicators will be measured:
<ul style="list-style-type: none"> - To identify research and development needs of Kyrgyzstan and Armenia in the field of Geoinformation Technologies. - To create a Research Node in GIT per partner country to promote and harmonise collaborative innovation projects and joint research lines. 	<ul style="list-style-type: none"> - Number of social needs surveys sent and completed by stakeholders. - Number of research laboratories created. - Equipment purchased and installed in the new laboratories of GIT. - Number of mobilities for retrained teachers. - Number of courses and modules produced. 	<ul style="list-style-type: none"> - Social needs report and presentations. - Participation lists in workshops, trainings, and transversal trainings. - External evaluation report. - Project management documentation. - Reports on Quality system

<ul style="list-style-type: none"> - To create and/or update research laboratories of GIT. - To train trainers from partner countries in relevant topics of GIT that have special interest for regional development of innovation and environmental protection. - To provide teachers and managers from HEI's knowledge and skills in transversal topics of higher education, such as quality assurance practices, innovation and entrepreneurship, curricula development by competences and learning outcomes, and others following Bologna process standards. - To create interdisciplinary postgraduate programmes (master and PhD levels) that enhance the potential of GIT in different areas and degrees and focus research outputs on contemporary problems at regional and global scales. - To foster and strength the cooperation between university and industry in those topics identified as critical for the sustainable development of the partner countries. - To exchange and share experiences and perspectives between two emerging countries from different geographic regions, Armenia and Kyrgyzstan, that are facing common socio-economic challenges and need to stimulate new strategies in research and development 	<ul style="list-style-type: none"> - Number of on-line material produced. - Percentage of course completion and success rates. - Number of people participating in Quality system and surveys. - Number of new postgraduate programmes created (master and PhD). - Number of signed cooperation agreements between partner universities, industry and administration. - Number of international articles produced. - Number of attendants to the national and international workshops. 	<ul style="list-style-type: none"> developed, feedback from HEIs. - Project webs-statistics from partner countries. - Quality and impact of reports. - Training registration and certificates of attendance.
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Outputs/outcomes	Indicators of progress:	How indicators will be measured:
<p>WP1</p> <ul style="list-style-type: none"> - 1.1 Report on analysis of needs in research & development in Armenia and Kyrgyzstan. - 1.2 Two workshops on research and innovation <p>WP2</p> <ul style="list-style-type: none"> - 2.1 Two new National Research Nodes in Geoinformation Technologies with agreement signed. - 2.2 Two advisory boards created. - 2.3 Report about definition of industrial PhD thesis. - 2.4 Joint intl. workshop on experiences in R&D. <p>WP3</p> <ul style="list-style-type: none"> - 3.1 Report on analysis of needs of equipment. - 3.2 Installation and testing of GIT equipment in 7 universities. - 3.3 Six training courses on advanced GIT. - 3.4 Two transversal training courses in good practices in HE. - 3.5 Curricula reform at postgraduate level (interdisciplinary master and PhD). - 3.6 Development of courses syllabus and new learning materials. <p>WP4</p> <ul style="list-style-type: none"> - 4.1 Creation and development of quality 	<p>WP1</p> <ul style="list-style-type: none"> - If report of needs is delivered on time according to the plan. - Degree of satisfaction of partners and stakeholders about the content of the report. - Number of people involved in the meetings and workshops. - Number and variety of stakeholders participating and attending to the workshops. <p>WP2</p> <ul style="list-style-type: none"> - Number of agreements signed and universities and companies involved. - Number of universities participating in the report of industrial PhD thesis. - Degree of involvement of universities and industry with industrial PhDs. - Number of people involved and local stakeholders attending to the international workshop. <p>WP3</p> <ul style="list-style-type: none"> - Report of analysis of needs delivered on time. - Number of trainees attending to the six technical training and two transversal courses. - Equipment provided, software licenses. - Number of laboratories created and people attending to the opening ceremonies. - Number of degrees created/reformed, and number of potential students affecting 	<p>WP1</p> <ul style="list-style-type: none"> - Satisfaction survey to persons involved in the workshop. - Project and institutional documentation, media feedback, etc. - Quality report of WP1. <p>WP2</p> <ul style="list-style-type: none"> - Surveys to partners and target groups about the activities carried out. - Participant lists, inventories, and project reports. - Quality report of WP2. <p>WP3</p> <ul style="list-style-type: none"> - Survey to partners about the activities carried out. - Survey to target groups, beneficiaries and partners involved in the activities. - Quality report of WP3. <p>WP4</p> <ul style="list-style-type: none"> - Survey to target groups. - Overall satisfaction of partners. - External report by experts. - Quality report of WP4. <p>WP5</p> <ul style="list-style-type: none"> - Minutes of the project management meetings, EU delegations and EACEA reports. - Quality report of WP5.

plan. - 4.2 Monitoring visits to partner countries and reports. - 4.3 External evaluation visits and report. WP5 - 5.1 Project kick-off meeting. - 5.3 Project management committee meetings - 5.4 Meetings by videoconference. WP6 - 6.1 Project website and social networks. - 6.2 Promotional material of NRN-GIT. - 6.3 Final dissemination conferences. - 6.4 Actions to ensure project sustainability	- Usefulness of the equipment. - Number of courses developed. - Number and quality of learning materials produced. WP4 - Percentage of success / failure in development of Quality plan. - Evaluation report from the international and external quality reports. - Number of monitoring visits and degree of efficiency during the visits - Number of people participating during monitoring visits. WP5 - Number of stakeholders, students and media in the kick-off meeting. - Progress reports and monitoring from EU delegations and EACEA. - Number of minutes generated during management meetings and activities. WP6 - Number of partners in social nets. - Number of websites or social networks created. - Number of booklets and promotional material created. - Number of actions for ensuring sustainability. - People attending to the final dissemination conference and number of other projects attracted.	WP6 - Website statistics. - Number of visits and downloads of created material, presentations, agendas, etc. - Number of interactions in social networks. - Satisfaction surveys to the project partners. - Quality report of WP6.
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2.5 Deliverables

All GeoTAK activities are divided in six work packages. By breaking a project down into work packages, the development of Work Breakdown Structures becomes easier—and project managers will have a finer level of control over assignments.

Other benefits include:

WPs allow for simultaneous work on different components

Costs of activities are aggregated at the work package level so they can be measured, monitored, and controlled.

WPs allow for simultaneous work to be done on different components of a project in parallel by multiple teams. Each team follows the tasks defined for the work package and completes them by the specified deadline.

Once the teams have finished their individual work packages, the entire project comes together with seamless integration. Completion of a WP is most often overseen by a specific person: a manager, supervisor, a team lead, or a designated team member.

The WPs and deliverables of GEOTAK are given in table 1.

Ref. /WP	Title of expected deliverable	Type of expected deliverable	Target groups
1.1	Survey on social needs	Report	Teaching staff, students, industry
1.2	Workshops	Event	Teaching staff, students, industry
2.1	Creation of National Research Nodes in GIT	Service	Teaching staff, students, govt. industry
2.2	Advisory board	Service	Govt, industry
2.3	Industrial PhD thesis	Service/handbook	Teaching staff, students, govt. industry
2.4	Workshops R&I	Event	Teaching staff, students, govt. industry

Ref. /WP	Title of expected deliverable	Type of expected deliverable	Target groups
3.1	Equipment	Product	HEIs
3.2	GIT labs	Product	HEIs
3.3	GIT training courses	Service	Teaching staff, students, govt. Industry
3.4	Transversal training	Service	Teaching staff, students, govt. Industry
3.5	Curriculum	Product	Teaching staff, students
3.6	Course material	Product	Teaching staff, students

Ref./ WP	Title of expected deliverable	Type of expected deliverable	Target groups
4.1	Quality Plan	Report	Teaching staff, students, govt. Industry, EACEA
4.2	Internal Monitoring	Event/Report	HEIs, govt. Industry
4.3	External evaluation	Report	Teaching staff, students, govt. Industry
5.1-5.4	Project Management meetings	Event/report	Partners, advisory members
6.1	Project website and social media	Product	All interested parties
6.2-6.3	Promotion of NRN-GIT and dissemination events	Events	All key stakeholders
6.4	Actions for sustainability	Events	All key stakeholders

Progress and performance must be measured to attest a development in the project. With few, but carefully selected indicators, it is possible to get a good overview on the progress and performance. The following table shows the list of Key performance indicators that are designed to measure the progress of the project.

Table 2: Indicators of progress

INDICATORS OF PROGRESS		HOW INDICATORS WILL BE MEASURED
1	Increased quality of postgraduate programs in GIT by training teachers and students.	Contribution analysis on project documentation, records, feedback from the industry and administration.

2	Number of signed cooperation agreements between partner universities, industry and administration.	Project management documentation
3	Degree of satisfaction of partners and stakeholders about the content of the report	Project and institutional documentation, media feedback, etc.
4	Degree of involvement of universities and industry with industrial PhDs.	Survey to target groups, beneficiaries and partners involved in the activities
5	Number and quality of learning materials produced.	Survey to target groups, beneficiaries and partners involved in the activities.
6	Website and number of social networks created.	Webmetrics
7	Number of actions for ensuring sustainability	Project documentation
8	Reports approved by EACEA	Project documentation

Traditional project management theory stresses the iron triangle "of project success (time, cost, and quality of project outputs). Often it is being supplemented by the less tangible notions of value-add "project outcomes and benefits which are relatively difficult to formulate. Therefore, proper and qualitative outputs and reliable outcomes are the basis of the quality of the project. An intangible outcome is an effect or result that adds value but which is not tangible or formalised as a deliverable. Intangible outcomes are by definition more difficult to evaluate and validate than tangible ones. Project stakeholders are able to identify, prioritise and define intangible project outcomes when provided with a process for doing so (see Deliverable Preparation Process and Due process of deliverable preparation in following sections). The following table provides the list of outputs (tangible) and outcomes (intangible) of GEOTAK.

GEOTAK' outputs (tangible) and outcomes (intangible) results

WORK PACKAGES	OUTPUTS (TANGIBLE)	OUTCOMES (INTANGIBLE)
WP1 Needs analysis	OP 1: Survey for identification of research & development needs, and report Two workshops on Research & Innovation Two National Research Centers on GIT created	OC 1: Alignment of LOs and competencies within revised study structure to facilitate employability of graduates. Analysis of local and national research and development needs in the field of GIT. Feasibility of Industrial PhDs in AM,KG

WP2 -WP3 Development	OP 1: Two National Research Centers on GIT created	OC 1: Strengthening of cooperation university-industry-administration
	OP 2: Training teachers in specific GIT	OC 2: Upskilled staff with updated teaching/ didactic materials compiled
	OP3: Equipment installed and operational	OC3: Updated labs and classes to conduct GIT related courses
	OP 4: Curriculum development in GIT at MA, PhD level	OC 4 & 5: Implementation of efficient GIT programs through qualified staff
	OP5: Piloting of programs in Year 3	
WP4 Quality control and monitoring of GeoTAK	OP 1: Quality assurance system allocated to internship scheme; Internal quality control reports; External evaluation reports	OC 1: efficient project implementation; risk management and increase guarantees of achievement of project results
WP5 Management of G	OP 1: Management standards and procedures established, interim reports; Final financial audit report	OC 1: Consolidated working, mobility, training and budget plans
WP6 Raising awareness campaign and exploitation of GEOTAK outputs	OP1 : organisation of website and social networks	OC 1: Raised knowledge on project objectives and achievements among key stakeholders; Increased attractiveness of new courses for students
	OP2: Leaflets and brochures	OC2: visibility of project output and outcomes
	OP3: Dissemination conferences	OC 3: Dissemination of best practices at institutional and international level
	OP4: Workshops and meetings to enhance sustainability	OC 4: Collection of material for further research, joint ventures, elaboration of policy guidelines

All deliverables should be formed according to the Deliverable template below; this template is also maintained within the quality WPL team. The template provides a deliverable identity sheet and specifies formatting for the most used elements of deliverable report. The partners responsible for the deliverable are required to ensure that before releasing the first deliverable

draft to partners, it is in the correct template, specified format and the identity sheet is complete. The table below shows the indicative process for preparing deliverables.

Deliverable Preparation Process

Who	Action	To Whom	Duration
Deliverable Leader	Prepares Table of Content (ToC) and circulates the document to those involved	Contributing Partners	> 2 weeks from deliverable starting date
Deliverable Leader	Updates ToC according to comments. Proposes Assignments on the ToC and agree with the contributors circulates the document to those involved	Contributing Partners	> 1 Months from deliverable starting date
Contributing Partners	Work on the document Issue intermediate releases	Contributing Partners	Ad Hoc
Deliverable Leader	Consolidates all input Issues 1st complete draft Circulates for comments	Contributing Partners	1 Month Before Submission
Deliverable Leader	Updates document addressing comments received Circulates final draft for comments	Internal Deliverable Reviewer (see following sub-section)	2 weeks before submission
Internal Deliverable Reviewer	Returns document with comments and MS- Word track changes	Deliverable Leader	1 week before submission

Who	Action	To Whom	Duration
Deliverable Leader	Updates document addressing comments received and produces its final release Forwards deliverable to WPL and QMT for quality inspection	WPL, QWPLT	3 days before submission
QPLT	Final approval (if not approved it returns immediately back to the DL for revision)	SC, Project coordinator	2 days before submission
Project coordinator	Submits deliverable to the EACEA Places the submitted PDF version on the digital repository under the respective WP folder	EACEA	1 day before submission

Deliverable Reviewers List. The following table lists the internal reviewers assigned per Deliverable. During the course of the project a number of external reviewers (from the Advisory Board to be established; see objective 2.2) may be also assigned to a specific Deliverable according to the needs of the latter.

Del No.	Deliverable title	Leader	Internal Reviewer	Deliverable date	Dis. Level
D 1.1	Survey for identification of research & development needs	KSUCTA	All partners	M6	PU
D 1.2	Workshops on Research & Innovation	KSUCTA	All partners	M6	RE
D 2.1	Creation of National Research Nodes (NRN-GIT)	KTH	All partners	M6	PU

D 2.2	Creation of advisory boards for NRN-GIT	KTH	All partners	M8	RE
D 2.3	Definition of industrial PhD thesis concept	KTH	All partners	M17	PU
D 2.4	International workshop "Sharing experiences in R&I"	KTH	All partners	M24	PU
D 3.1	Analysis of needs and equipment acquisition	UL	All partners	M10	RE
D 3.2	Create/update research and innovation labs in GIT	UL	All partners	M13	RE
D 3.3	Delivering GIT training courses	UL	All partners	M27	RE
D 3.4	Transversal training in HE and innovation	UL	All partners	M30	RE
D 3.5	Curricula development at postgraduate level	UL	All partners	M30	RE
D 3.6	Development of courses and materials	UL	All partners	M34	RE
D 4.1	Quality plan: creation and development	VUB	KSUCTA, NUACA	M4	CO
D 4.2	Monitoring visits to PC	VUB	KSUCTA, NUACA	M36	CO

D 4.3	External evaluation	VUB	UPV, KSUCTA, NUACA	M36	CO
D 5.1	Project kick-off meeting	UPV	All partners	M2	RE
D 5.2	Daily project management	UPV	All partners	M36	CO
D 5.3	Project management committee meetings	UPV	All partners	M36	RE
D 5.4	One-on-one meetings by videoconference	UPV	All partners	M36	RE
D 6.1	Project website and social networks	NUACA	All partners	M36	PU
D 6.2	Promotion of NRC-GIT	NUACA	All partners	M36	PU
D 6.3	6.3 Final dissemination conference	NUACA	All partners	M36	PU
D 6.4	6.4 Actions to ensure project sustainability	NUACA	All partners	M36	PU

Insofar the confidentiality of deliverables and other documents, including presentations, is concerned, the following four (4) levels of security are considered:

PU: Public Usage. No restrictions on access (in secured PDF format).

PP: Restricted to other program participants (including the Commission Services).

RE: Restricted to a group specified by the consortium (including the Commission Services).

CO: Confidential, only for members of the consortium (including the Commission Services).

While developing the deliverables partners may be asked to follow a rigorous open due process. Outlined below, in overview terms, the due process steps followed in the 'Report' and Service/Product deliverables preparation.

The research programme involves the analysis of possible problems by collecting evidence on the nature and extent of the perceived shortcoming and assessing potential ways to improve or to remedy a deficiency. Also includes the consideration of broader issues, such as how the situation is evolving, to encourage debate on the matters among GEOTAK partners.

A discussion paper, request for information or research paper may be released, which are designed to elicit comments from interested parties that can help the DL decide whether to add any changes to its original proposals. Not all matters included in the research programme will proceed to a proposal for a new or modified deliverables. Once DL has formally decided what all relevant points of view are included, it proceeds to the development of an exposure draft. The exposure draft is issued for consultation with GEOTAK partners and key stakeholders and the DL may also undertake additional outreach activities such as meetings, discussion forums, webcasts and podcasts and roundtable meetings.

After the publication of an exposure draft, the DL proceeds to consider constituent feedback from the consultative process. In some cases, the DL may decide to re-expose proposals before proceeding to a finalised deliverables project. Once deliberations have been finalised, the DL technical staff will prepare the final text of deliverables to SC, coordinating unit and, if appropriate, to the Advisory Board.

2.6 Methodology

The primary source of the indicators to be used in the GeoTAK project is the LFM matrix described previously in section 2.1. The wider project objectives and the specific project objectives were entered into the success indicator folder of the indicator register, together with the related indicators and method for assessment. In this process, some goals, indicators and assessment methods were slightly reformulated in order to increase clarity and to follow the goal - indicator - assessment structure more clearly. These entries are marked as LFM in the "Source / status" field. In the same manner, result indicators as specified in the third row of the LFM were entered into the "Result indicators" folder of the indicator register.

The expected contributions to the EU policies are aligned to the main objective of GEOTAK. These objectives are mainly covered by the higher objectives as outlined in the upper part of the LFM. When entering these goals and indicators into the success indicator folder, only minor textual adaptations were required.

The funding authorities also expect that the project will contribute to the modernisation and internationalisation agenda of the targeted higher education institutions in the Partner Countries and with the development strategy for higher education in each Partner Country involved in the project. The indicators to use as reference are indicated in the LFM and other sections of the project proposal (e.g. impact) and consequently they should be used in the performance assessment.

The funding authorities (EACEA) may also expect that the project will pay attention to the issues of inclusion, diversity and socio-economically disadvantaged groups in the Partner Countries. These indicators are considered as cross-cutting issues and are also part of the relevance of the project. The project will also submit an interim report and a final report to the funding agency. The information to be provided in these reports are not published yet. Instead, corresponding report templates from previous years may be used. Such an analysis has however not yet taken place.

The specific project objectives are here defined as the direct benefits to the target group(s). It is important to distinguish between the benefits/outcomes/impacts and the results themselves. The results are something tangible that the project delivers, while the benefits/outcomes/impacts are the changes of the status/situation at the end of the project, for instance the river is cleaner, the education is better etc. Although the long-term impacts are of importance, they are often difficult to observe such effects during the project lifetime.

3 EVALUATION

3.1 Evaluation requirements

In order to evaluate the postgraduate programs developed within GeoTAK the following considerations need to be taken into account.

Internal Quality Assurance System

Institutional document of the Internal Quality Assurance System is understood as the ordered set of procedures that regulate the operation of actions for the continuous improvement of postgraduate programs and their articulation with research activities or professional work, the link and universal access to knowledge.

Policy and procedures for quality assurance

The institution has a policy and procedures for guaranteeing the quality of graduate programs. Likewise, it is explicitly committed to developing a culture that recognises the importance of continuous improvement in academic quality. The policy and procedures have a formal hierarchy and are publicly available.

Policies and procedures for the resolution of academic disputes

The institution has an academic and administrative policy and procedures for the resolution of controversies between the different actors involved in the activities of the program.

Actions aimed at improving quality

The Internal Quality Assurance System covers the aspects of training, research and innovation, the relationship with society and social projection, as well as the management associated with the development of the postgraduate program and attention to the recommendations received in our case and the execution of the improvement plan.

3.2 Set of indicators

GeoTAK will raise the quality level of the postgraduate programs and PhD programs developed, increase employability and raise awareness of the importance of Geo-information technologies in Kyrgyzstan and Armenia; it translates into more effective policy and management guidelines both at the national and regional level while increases international scientific collaboration. The set of indicators are based on the deliverables to be produced each year. A list of them can be found underneath.

DELIVERABLES. YEAR 1

Responsible team	Activity	Deliverable	Evidences
WP1	Collecting data from stakeholders to establish a portfolio of R&D needs in GIT.	An analysis for identification of research and development needs and opportunities at local and regional levels will be made by (1) compiling previous analysis, documents and reports in these fields, (2) elaborating a survey questionnaire and distribute among relevant stakeholders in both countries, (3) Analysis of information and survey, focusing development needs, priorities and opportunities (4) Integrate the results in a written report and publish it in the web and disseminate it.	<ol style="list-style-type: none"> 1. Stock-taking of previous literature, reports, documentation 2. List of participants in survey 3. Document: Relevance analysis of the needs, priorities and opportunities for GIT in AM and KG. 4. Report: Study of relevance of survey results and integration into new skills and competences in the new master's and PhD programs.
WP1	Kick-off meeting (KOM) + preparation	Meeting report	<ol style="list-style-type: none"> 1. KOM program 2. Invitations generated for sessions 3. List of participants 4. General report of the meeting, which observes the most relevant aspects of it, as well as the list of agreements (if applicable). 5. Access to documentation and recordings via MS Teams whenever necessary
WP1	Two workshops regarding Research and Innovation (Workshop / Staff Trainings)	Workshop report or book	<ol style="list-style-type: none"> 1. Program of the preparatory workshops on R&D 2. Invitations generated for sessions 3. List of participants 4. General report of the meeting, which describes the most relevant aspects of it, as well as the list of agreements or conclusions (if applicable).

			<ul style="list-style-type: none"> 5. Access to documentation and recordings via MS Teams whenever necessary. 6. Evidence (document) of participation
WP2	Creation of National Research Nodes	Formalisation of Research Nodes Structures	<ul style="list-style-type: none"> 1. Access to documentation and recordings via MS Teams 2. Evidence (document) of participation of stakeholders. 3. Official documentation
WP2	Creation of advisory boards for NRN-GIT	Formalisation of Advisory Boards in AM-KG	<ul style="list-style-type: none"> 1. List of members 2. Official documentation
WP2	Definition of industrial PhD thesis concept	Documentation with normative procedures for industrial PhDs	<ul style="list-style-type: none"> 1. Official documentation with normative procedures in AM-KG
WP3	Analysis of needs and equipment acquisition	Equipment inventory	<ul style="list-style-type: none"> 1. Excel file with equipment to purchase 2. Inventory with equipment purchased
WP3	Create/update research and innovation labs in GIT	Establishment/modernisation of GIT labs	<ul style="list-style-type: none"> 1. Institutional charts 2. Videos, pictures of opening ceremonies 3. Official visits to lab premises
WP4	Establishing the Quality Assurance Plan	Quality Assurance Plan	Document: Quality Assurance Plan
WP4	Internal Monitoring of Quality	Reports	Access to reports via MS Teams
WP5	Manage project and coordinate internal communication	Reports	Access to reports via MS Teams
WP5	Activity reports, communications, self-assessment	Reports	Access to reports via MS Teams
WP6	Publish the public deliverables on the GEOTAK website	GeoTAK website in operation and updated	Access to the GeoTAK website
WP6	Visual branding of the project, promotion of NRC-GIT and Dissemination Plan	Dissemination Plan, including the mechanisms to be used. It is important that through the selected diffusion mechanisms, the impact can be quantifiable.	<ul style="list-style-type: none"> 1. Dissemination Plan 2. Calendar of dissemination activities 3. Statistics of impact (views and / or interactions) 4. Results of opinion polls

Responsible team	Activity	Deliverable	Evidences
WP2	International workshop "Sharing experiences in R&I"	Workshop report	<ol style="list-style-type: none"> 1. List of participants and stakeholders 2. Agenda and workshop program 3. Documents via MS Teams or similar (if online)
WP3	Delivering GIT Trainings	Training activities	<ol style="list-style-type: none"> 1. Training plan 2. Calendar of training activities 3. Statistics of training impact (feedback and / or interactions)
WP3	Enhancing the Master curricula, curriculum development	Updates to study plans	<ol style="list-style-type: none"> 1. Updated study plans (advances), emphasising the changes in favour of the acquisition of new skills and competences that contribute towards the sustainable management of ecosystems and aquatic resources, both nationally and in a cross-border context.
WP3	Transversal training in Higher Education (Workshop 'Quality Assurance in Higher Education')	Workshop report or book	<ol style="list-style-type: none"> 1. Workshop Program Follow-up of work practices' QA practices 2. Invitations generated for sessions 3. List of participants 4. General report of the meeting, which observes the most relevant aspects of it, as well as the list of agreements or conclusions (if applicable). 5. Access to documentation in MS Teams – recordings whenever necessary 6. Evidence (document) of participation.
WP3	Development of courses and materials at Master and PhD level	Syllabi, normative procedures	<ol style="list-style-type: none"> 1. Curricular plan developed 2. Calendar of curriculum development activities accomplished 3. Official curriculum documentation
WP4	Internal Monitoring of Quality (Midterm report)	Meeting reports	<p>For each meeting:</p> <ol style="list-style-type: none"> 1. Program 2. Invitations generated for sessions 3. List of participants 4. General report of the meeting, which observes the most relevant aspects of it, as well as the list of agreements (if applicable). 5. Access to documentation via web
WP5	Project management meetings, activity reports, communications, minutes	Reports	Access to reports via MS Teams
WP5	Follow-up contacts with EACEA and reporting	Reports	Access to reports via MS Teams

WP6	Communicate on the multiplier events and promotion of NRC-GIT	Report	<ol style="list-style-type: none"> 1. Document that describes the diffusion mechanisms implemented 2. Flyers, Twits, Facebook, Instagram, web page (including number of views and / or interactions), etc. 3. Results of opinion polls
WP6	Publish the public deliverables on the GeoTAK websites	GeoTAK websites in operation and updated	Access to the GeoTAK websites

DELIVERABLES. YEAR 3			
Responsible team	Activity	Deliverable	Evidences
WP3	Transversal training in Higher Education ('Workshop on Research and Innovation')	Workshop report	<ol style="list-style-type: none"> 1. Workshop Program Follow-up of work practices on innovation 2. Invitations generated for sessions 3. List of participants 4. General report of the meeting, which observes the most relevant aspects of it, as well as the list of agreements or conclusions (if applicable). 5. Access to documentation and recordings via MS Teams 6. Evidence (document) of participation.
WP3	Enhancing the Master curricula and PhDs	Report	<ol style="list-style-type: none"> 1. Present updated Master curricula and approved by the highest corresponding institutional academic instance. 2. Present the new and approved PhDs (or in process of being so) by the highest institutional academic instance.
WP4	Internal Monitoring of Quality (Final meeting Steering Committee + Implementation Committee)	Meeting report	<ol style="list-style-type: none"> 1. Meeting programs 2. Invitations generated 3. List of participants 4. General report of the meeting, which observes the most relevant aspects of it, as well as the list of agreements (if applicable). 5. Access to documentation and recordings via web
WP5	Project management meetings, activity reports, communications, minutes	Reports	Access to reports via MS Teams
WP5	Follow-up contacts with EACEA and reporting	Reports	Access to reports via MS Teams

WP6	Communicate on the multiplier events	Report	<ol style="list-style-type: none"> 1. Document that describes the diffusion mechanisms implemented 2. Flyers, Twits, Facebook, Instagram, web page (including number of views and / or interactions), etc. 3. Results of opinion surveys
WP6	Final dissemination conference	Dissemination activities accomplished, including used mechanisms. It is important that through the selected diffusion mechanisms, the impact can be quantifiable.	<ol style="list-style-type: none"> 1. Final conference report 2. Agenda and participant list 3. Statistics of impact (feedback and / or interactions)
WP6	Publish the public deliverables on the GeoTAK websites	GeoTAK websites in operation and updated	Access to the GeoTAK websites
WP6	Actions to ensure sustainability	Plan to ensure sustainability	<ol style="list-style-type: none"> 1. Plan to ensure sustainability, indicating tools, means and general needs of the participating institutions for its implementation. Graduate monitoring program

3.3 Monitoring indicators

STRUCTURE AND ACADEMIC STAFF OF THE PROGRAM				
Criteria	Statements guidance counsellors	Level of compliance	indicators of performance	Means of Check
Master curricula	Complete document of the master's program, which specifies the entry and exit profiles, articulates the foundation, goals, contents, strategies and curricular map to support the student's comprehensive training according to the program's orientation. The curricular organisation has a flexible structure that allows developing a panoramic vision of the field of knowledge, of research and development methods, which favours intellectual autonomy, creativity, the ability to carry out original research and innovation of its students and academics. The curricular organisation favours the transfer of knowledge to the sectors of society.	Required	Adherence to Bologna standards Accreditation procedures	Documents of the Master curricula: 1. Document analysing the social and educational relevance of the program, 2. Curricular map, 3. Synthesis of the program's study plan, in which the distribution of the training areas (subjects, sequences) of conformity to the institutional educational model
PhD curricula	The vice-rectorate for academic affairs is responsible for the academic rules of an Industrial PhD program. The jury composition is made up of the institution's full-time professors and the other associated institutions and private companies, formalised through collaboration agreements.	Required	Collaboration agreements, industrial professionals involved in PhD theses Recognition procedures of Industrial PhDs	List of professors, indicating the degree, institution in which they obtained their degree, their specialty and their appointment and affiliation institution. List of collaboration agreements and members of juries. Institutional/ministerial documentation recognising Industrial PhDs
	Minimum number of members of the academic staff.	Desirable	60% of the staff are from the institution offering the postgraduate degree / 40% of the industry or associated institutions	
	Openness and capacity for dialogue in the integration of industrial professional staff: At least 50% of professional bodies must have obtained their highest degree in an institution offered by the program (alumni).	Desirable	50% Alumni	

STUDENTS				
Criteria	Statements guidance counsellors	Level of compliance	indicators of performance	Means of check
National and international student mobility	The postgraduate program has mobility mechanisms.	Required	At least one international mobility per student / year	Report cards, records, reports, photographs
Monitoring the academic career of students	Student / Teacher ratio, ratio of students to full-time teacher (tutorials in relation to the enrolment of the program).	Desirable	Up to 5 MA students.	List of students served by tutor
Thesis supervision or final project at Master level	Attention capacity of the Thesis Director.	Desirable	Up to 5 students simultaneously.	Relation of students directed by tutor
	Plural composition of the graduation juries (with at least one member outside the program).	Required	At least one member old to the program	Thesis release records and exam degree records
Thesis supervision at PhD level	Attention capacity of the Thesis Director.	Desirable	Up to 2 students simultaneously.	Relation of students directed by tutor
	Plural composition of the PhD juries (with at least one member from industry).	Required	At least one member from Industry	Thesis release records and exam degree records

RESULTS AND LINKAGE				
Criteria	Statements guidance counsellors	Level of compliance	indicators of performance	Means of check
Parameters for Calculating Cohort Efficiency	Average success rate per generational cohort of the program.	Recent creation.	At the end of the project	Basic indicators: 1. Generation cohort 2. Admitted students 3. Students withdrawn 4. Graduate students 5. Active students 6. Cohort success rate (%) 7. Duration (Years)
		Desirable	60%	
Graduate Networks	Job placement Percentage of graduates who work in an activity related to the training in which they have been trained (Research, academic, productive, social or government sector).	Recent creation.	—	—
		Desirable	60%	1. Implementation and / or continuation of a plan for monitoring graduates. 2. Graduate follow-up survey data
	In addition to having: 1. Academic awards. 2. Membership of Academies, Societies and / or professional organisations (Certification, Professional Colleges, etc.). 3. Participation in research networks. 4. Continuation of academic/professional career in GIT disciplines. 5. National postdoctoral scholarships.	Recent creation.	At the end of the project.	—
		Desirable	No threshold	Databases and supporting documents

Finally, we expect each postgraduate program to develop its own website or linked to the institutional website that must be updated at least once a year, with information on the following sections:

1. Graduate profile
2. General and particular objectives of the postgraduate program.
3. Synthesis of the study plan.
4. Number of students enrolled by generational cohort.
5. Academic core (desirable with a brief curriculum review of the participants).
6. Lines of generation and / or application of knowledge of the program.
7. Mentoring (list of directors of theses and tutors for research work).
8. Relevant academic productivity of the graduate program.
9. Collaboration with industry and other sectors of society.
10. Administrative processes (deadlines and pre-registration procedures for enrolment and enrolment) and other information of interest to the student about the program (name of the program coordinator, contact addresses and telephone numbers, etc.).
11. In the case of programs with the participation of several universities, the information must appear on the website of each one.

Links to this information should be available on the GEOTAK website.

3.4 Methods for delivering feedback

Depending on a variety of factors, the appropriate feedback technique could be decided for a project based on the management approach. One thing that should remain intact irrespective of the methodology chosen, is the process to ensure learnings and scope for improvements are documented. More often than not, project completion ends with feedback from the business stakeholders/customers. While that is of pivotal importance for ensuring quality delivery, in order to better the internal processes collecting feedback from the individual contributors becomes imperative. This internal project feedback questionnaire should be a part of what is called as 'Task, Work Package or Project Closure Activities'.

WHEN

To receive a crystal clear feedback, the best time to ask for it is when the project activities are still fresh in team members' minds. That is, immediately after each task completion or just before the individuals are moved onto their next Work Package – timing of the feedback is crucial as it reinforces the management's commitment to improving the processes. Even a week of delay would mean change in perception of the employees, turning it into a 'just another formality.'

HOW

Depending on the level of comfort amongst the GEOTAK partners, the feedback questionnaire can be responded to anonymously or openly. If we sense that the individuals are not going to be open about what they feel unless they are protected by anonymity, that is the best way to go about it. Questions in the feedback form should 'subtly force' team members to be 'future focused'. Thus rather than just criticising the past, encourage them to provide a solution for the problems faced. The questions should be designed in a way that they extract positive and negative responses, in a state of balance. In annex I there is an example to the project feedback template, designed as a Google form.

4 RISK MANAGEMENT PLAN

4.1 Introduction

By its nature, curriculum development in GEOTAK must be effectively organised in order to handle any type of change, since its evolution is less predictable than relevant commercial activities. To this end, the objective of the risk management procedure is to provide the process and techniques for the evaluation and control of potential project risks, focusing on their precautionary diagnosis and handling.

4.2 What is 'Risk Management'?

Risk management is a systematic process of identifying and assessing risks and taking actions to protect a partnership against them. Some risk managers define risk as the possibility that a future occurrence may cause harm or losses, while noting that risk also may provide possible opportunities.

The purpose of Project Risk Management is to identify project risks and develop strategies to prevent them from occurring or minimise their impact to the project if they do occur.

Project risks exist because of uncertainty. There is always the possibility that something known or unknown could impact the achievement of project's goals. Risk management is about being prepared to handle these risks.

There are four basics of risk management that you can use to manage project's:

- Identify Risks
- Risk Assessment

- Risk Response Development
- Monitor and Control Risks

4.3 Identifying Risks

The first step of risk management is to identify any risks that may impact the project. One should essentially answer the question, "What could go wrong?". It's important to encourage critical thinking when trying to identify risks.

There are several techniques that one can use to help identify risks, namely:

Brainstorming

Interviewing

Risk Profiles

Historical Data

Assumptions Analysis

Work Breakdown Structure Analysis

It should be kept in mind that this is not a one-time activity. As the project progresses, new risks may evolve or become known while others may no longer be relevant.

When one has a list of potential project risks, he needs to determine which risks need to be managed. Generally, those risks that would have the greatest impact to the project as well as those that are more likely to occur are the ones that should be focused on.

A basic risk assessment will analyse each risk event for the likelihood that the risk will occur and for the impact it will have if it occurs. This type of qualitative risk analysis information can be plotted on a Risk Assessment Matrix which incorporates the risk rating rules as defined in Project Risk Management Plan.

4.4 Risk Assessment Matrix

For each risk, there are four response strategies that one can choose from:

Avoid : In some cases, risk avoidance is possible by making a change to the project management plan. Some examples include extending or shortening the schedule, changing the project strategy, or reducing scope.

Transfer : Risk transfer involves passing the risk to a third party. This doesn't change or eliminate the risk, it simply gives another party the responsibility to manage the risk. Examples of risk transfer include insurance and guarantees.

Mitigate : Risk mitigation means to reduce the probability and/or impact of a risk event. Examples of risk mitigation include safety training and simplifying processes.

Accept : Risk acceptance is when the project team decides not to change the project management plan to deal with the risk or is unable to identify any other risk response strategies for a risk event. This strategy can be passive where the project team decides to just deal with the risk if it occurs. Or it can be active where the project team has a contingency reserve allocated and plan in place in case the risk occurs.

Monitor and Control Risks

Monitoring and controlling project risks involves implementing risk response strategies, tracking identified risks, monitoring triggering events, and identifying new risks. This should be done throughout the project.

Risk evaluation

Risk evaluation will determine the quantitative and qualitative values of risk related to a concrete situation or a recognised hazard. Each partner should contribute to the risk assessment process by the definition and the identification of the different kind of risks and hazards that might be generated by a specific WP of GEOTAK. The collection and classification of the risks needs specific description and formulation in a unique matrix for each subsystem/module in order to be feasible their systematic analysis; as illustrated in the matrix below.

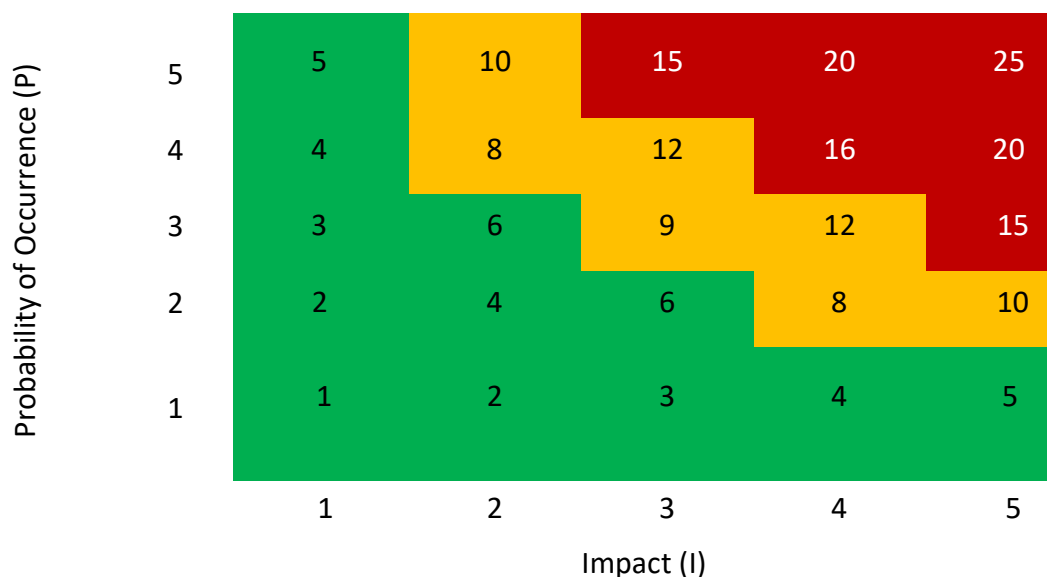


Figure X: Assessment of the identified risk according to its probability and impact level. A risk will be considered as low for 1-6 (green), medium for 8-12 (yellow) and high for 15-30 (red).

Expected risks

Several risks are predicted to occur during the implementation of the project as result of a risk assessment exercise at the beginning of the project.

Their definition, likelihood of occurrence and remedies follow:

Technical infrastructure, cooperation KG-AM and role of Advisory Board. During the implementation of the project, there is a possibility of conflicting activities among project team members and overlapping of dependent activities. Advisory Board members might not be actively involved in the project. Technical infrastructure may not be available in partner countries.

Risk management strategy: Constant communication with all stakeholders and focusing all implementation activities in target groups of the project. Already established cooperative links of partnering HEIs non-academic entities will be used to remedy this problem. Existing Infrastructure analysed and operational for the project.

Level of risk: Low

Incorrect need assessment, Covid situation and Political instability may have low to moderate impact in the project since academic activities may be stopped. Incorrect need assessment would lead to wrong curricula.

Risk management strategy: Meticulous planning of project activities and scheduling during the preparation phase. Constant communication among project coordinators of each team will ensure that any arising conflicts are resolved immediately.

During the implementation of the project, there will be possibilities that external conditions of economic, political or legal nature may impede or endanger the implementation of project activities as well as covid-19 pandemic.

Level of risk: Low-moderate

Accreditation, Lack of qualified GIT staff and setting targets for GIT nodes. There is a relative risk that accreditation processes will be delayed, trainees will not have the adequate skills to maintain European standards and that network enterprise-university will not be operational.

Risk management strategy: At least two different scenarios for implementing the project activities should be prepared during the Preparation Phase in order to smooth out any external effects that might occur throughout the project period.

Due to either/both internal or external factors, delays of project activities like accreditation and/or project implementation may occur – linking companies with universities in AM and KG for joint ventures.

Level of risk: Moderate

Bureaucracy, organisational issues and staff turnover. There is a non-negligible risk that trained GIT staff will move to private sector and that bureaucracy will delay important processes within the project (e.g. accreditation and curriculum).

Risk management strategy: Meticulous planning of project activities and scheduling during the preparation phase. Tools like CPM (Critical path method) and PERT (Program Evaluation Review Technique) charts may help to map milestones and deadlines for the project, as well as constant communication with partners, in order to ensure deadlines are met and delays do not occur.

During the implementation of the project, risk assessment should be made on regular intervals (i.e. every 4-6 months), in order to ensure that objectives are met and risk management strategies are in action. If required, project partners may change or adapt risk strategies to respond to current and expectant conditions.

Risk: Moderate-High

Mobility issues, lack of internships in industry and English skills. There is a potential risk that mobilities will not take place during the lifespan of the project. There is a lack of enterprises willing to accept students in both KG and AM. English skills of specialised staff stands usually at A1-A2 level.

Risk management strategy: The consortium is prepared to conduct as many meetings and trainings online via Zoom or Microsoft Teams. However, since trainings would be in English there is a serious risk

that not all participants will be able to follow. It would be recommended the integration of software applications that provide subtitles or alternatively to include audio tools that facilitate simultaneous translations. The lack of internships in industry will hinder the effectiveness of the project since students will not be able to acquire professional competences and skills. Support of Ministries and non-academic partners to identify enterprise willing to cooperate in the project should limit the impact of the previously mentioned risk.

Risk: High

An overview of the qualitative risk assessment for GeoTAK can be seen below.

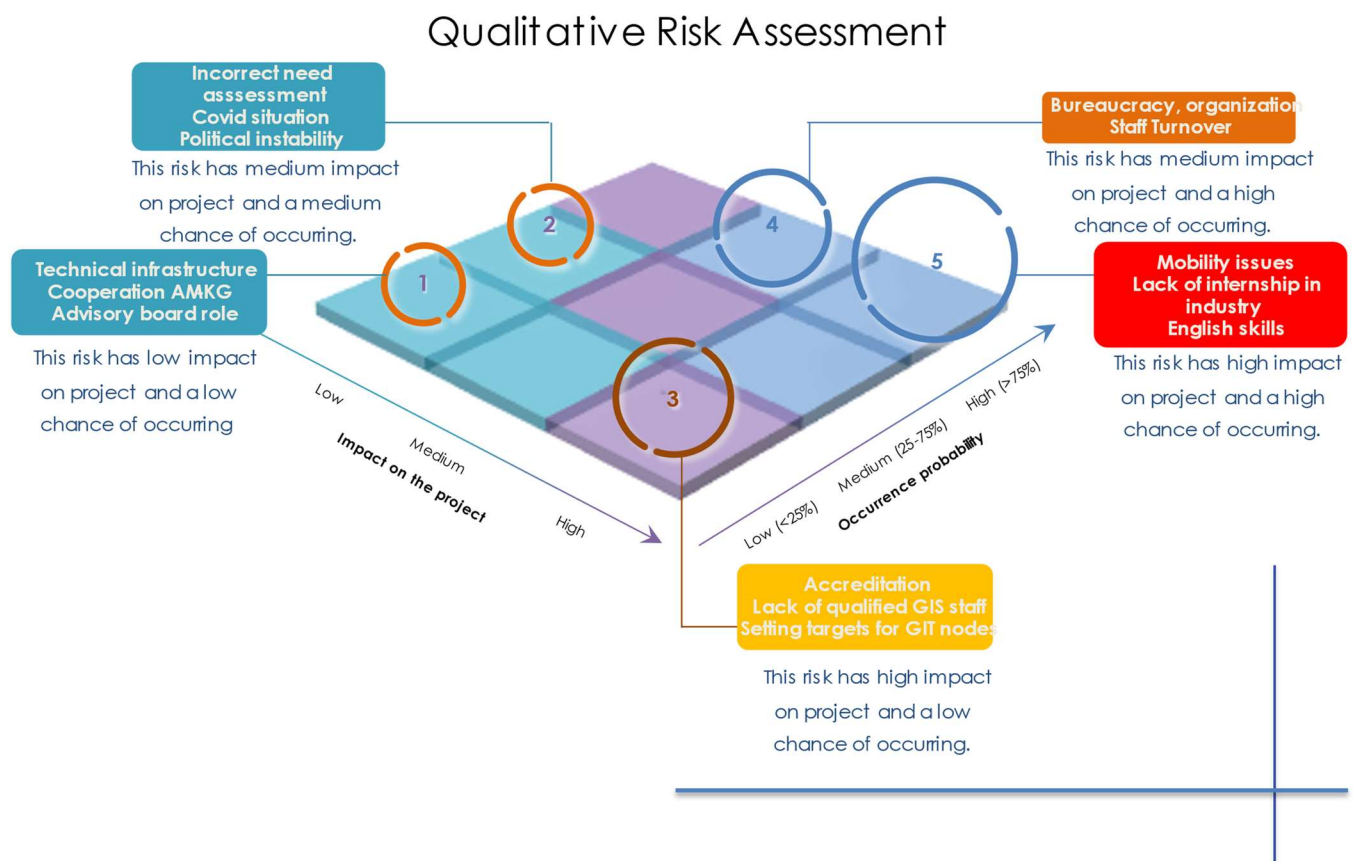


Figure X: GEOTAK qualitative risk assessment

4.5 Risk Register

A Risk Register can take a number of formats, including:

- Document, spreadsheet or database
- Stand-alone register or a carry forward in progress review minutes
- Entry in a project management tool
- Part of an integrated project register for all risks, actions, decisions, assumptions, issues, lessons etc

The composition, format and presentation of the Risk Register will be derived from the Risk Management Strategy. Entries are made on the Risk Register once a new risk has been identified. There may be one or more risks inherent in the project mandate. New risks may be discovered when creating the Project Brief, designing and appointing the project management team, establishing the project's controls and developing its plans, when issuing WPs, when reviewing WP status, or when reviewing task status. The status indicates whether action has been taken. Risks should be uniquely identified, including information about which product they refer to. Access to the Risk Register should be controlled by the Quality WPLs and kept in a secure place (e.g. cloud or digital repository).

An example of risk register is shown below.

Risk ID	Author	Date Registered	Risk Category	Description					Impact	
				Cause	Event	Effect	Inherent	Residual		
1										
2										
3										
4										
5										

Probability		Expected Value		Risk Response Categories	Risk Response	Risk Status	Risk Owner	Risk Action
Inherent	Residual	Inherent	Residual					

ANNEX I

Project Feedback (Internal)

Thank you for your invaluable contribution to the recently concluded <project name> project. While we are still gathering feedback from business stakeholders/customers, we wanted to hear your experience working on this project.

Intent of this questionnaire is to further improve the internal project management processes. Increasing everyone's satisfaction & engagement is of prime importance for us at <company>. We expect candid participation from you.

*Required

How satisfied are you with the project, overall? *

1 to 5 not very to very much

How was the workload during the course of this project? *

1 to 5 too light to too heavy

Did the project help you improve your skill set, offered opportunities to learn? *

1 to 5 not very to very much

Do you think the tools available to complete your tasks were sufficient? *

1 to 5 not very to very much

Did you get along well with your project colleagues? *

1 to 5 not very to very much

Did you receive feedback from your manager, on an ongoing basis? *

1 to 5 not very to very much

Were the conflicts (if any) handled appropriately & in time? *

1 to 5 not very to very much

3 things that the management should continue to do in future projects?

Your answer

3 things that the management should improve upon in future tasks? If possible, please suggest improvements.

Your answer

Any other feedback that can help us improve.

Your answer