



Smart Grid Technology – A Master Program [SGT-MAP]

WP7 – Quality Control and Monitoring of the SGT-MAP

7.1 Internal assessment of QA activities

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1 Introduction

To monitor and assess the quality of the implemented activities and deliverables of the SGT-Map project, two kinds of assessment were performed: internal and external. The internal assessment was conducted on two levels. The first level is the internal auditing that performed by each partner university which was managed by the contact person and QA representative of each partner. The second level is the peer-evaluation that conducted among partner universities for inter-partner assessment purposes. On the other hand, the whole project implemented activities and deliverables were evaluated through qualified external assessors. The internal and external quality assurance set-up have been carried out from the start of the project. Quality assurance representatives in the consortium partners worked in close coordination with the quality assurance committee to assure all the planned activities and their close cooperation through the project duration.

2 Objectives of the Deliverable

The main objective of this deliverable is to provide an internal assessment for the different deliverables and activities that conducted by the project partners in the first half period of the project. This report is shared by all contact persons of the project partners as well as the project PI through the project sharing point “Project Dropbox folder” which shows the mechanism followed for the internal assessment process in the project as well as the performance review provided by the internal assessors in different partners for implementing the project activities allocated to them. Therefore, different correction actions are taken by the contact person of each partner based on the evaluation results if it required and also, useful lessons and good practices are shared among partners through the available assessment reports.

3 Methodology

The Internal auditing for self-assessment purposes was conducted within each partner university to assess the quality of the project deliverables and the produced teaching materials. Quality auditing reports were produced regularly. This was achieved through the follow up of the project schedule and reviewing the produced courses according to the intended outcomes and objectives. Therefore, the methodology for assessing the different deliverables and activities conducted by each partner in the project is based on continuously monitoring of the different activities achieved by the team in each partner in accordance to the tasks allocated to this partner which are defined in the Project Application Form and agreed on it during the kick-off meeting that was held in Aberdeen. For this purpose, each partner was asked to hire two qualified non-project members to act as internal assessors for

internal auditing. The internal assessment process in each partner university was mainly managed by the contact person and the QA representative of each partner and conducted periodically every four months during the project time life.

As HU (P6) managing the implementation process of WP7 which includes the internal assessment activities, the QA responsible team at HU developed the Project Activities Monitoring Spread sheet (PAMS) which was sent to contact persons and QA representatives for all partners to be used by the WPLs and internal assessors as a tool for monitoring the status of all project activities and deliverables in terms of the on-time completion. The following shows some snapshots from the developed Project Activities Monitoring Spread sheet (PAMS).

SGT-MAP Project Activities Monitoring Sheet									
First Year (15/10/2016 – 14/10/2017)									
Activity No.	Activity title	Lead Partner	Participating Partners [Egyptian Partners (EGP)/ European Partners (EUP)]	Total duration (in weeks)	Start Date	End Date	Deliverable Type	Evaluation Level	QA Form Used for Evaluation
1.1	Establishment of the project organization and discussion of the strategic plan.	UNIABDN	EUP	2	15/10/2016	14/1/2017	Report	Internal, Peer	SGT-MEF, SGT-DEF
			EGP	3	15/10/2016	14/1/2017			
1.2	Plan the multidiscipline interaction map and subject area	UNIABDN	EUP	2	15/10/2016	14/11/2016	Report	Internal, Peer	SGT-DEF
			EGP	4	15/10/2016	14/12/2016			
1.3	Preparation of the program curricula map	UNIABDN	EUP	5	15/12/2016	14/3/2017	Report	Internal, Peer, External	SGT-DEF
			EGP	5	15/12/2016	14/3/2017			
2.1	Approve the suggested curriculum map	ASSTMT	EUP	1	15/2/2017	21/2/2017	Report	Internal, Peer	SGT-DEF
			EGP	1	15/2/2017	21/2/2017			
2.2	Distribute the course among the consortium members	ASSTMT	EUP	2	15/2/2017	14/4/2017	Report	Peer	SGT-DEF
			EGP	2	15/2/2017	14/4/2017			
2.3	Development of program courses	ASSTMT	EUP (See Table 1&2 in courses sheet)	14	15/4/2017	14/10/2017	Courses Specifications	Internal, Peer, External	SGT-CSEF
			EGP (See Table 1&2 in courses sheet)	14	15/4/2017	14/10/2017			
7.1	Internal assessment of QA activities	HU	EUP	3	15/1/2017	14/10/2017	Report	Internal	SGT-DEF, SGT-IEF
			EGP	3	15/1/2017	14/10/2017			
7.2	Peer review of teaching materials	HU	EUP	3	15/2/2017	14/8/2017	Report	Peer	SGT-CCEF
			EGP	3	15/2/2017	14/8/2017			
7.3	External assessment of QA activities	HU	EUP	2	15/3/2017	14/8/2017	Report	External	SGT-DEF, SGT-PEEF
			EGP	2	15/3/2017	14/8/2017			
7.4	Conducting surveys	HU	EGP	8	15/4/2017	14/9/2017	Report	Internal, Peer	SGT-DEF
8.1	Design and maintenance of project website	AU	EGP	7	15/11/2016	14/9/2017	Service	Internal, Peer, External	SGT-WEF
8.4	Organizing information sessions	AU	EGP (HU) --> (See Table 1 in Events Sheet)	2	15/4/2017	14/6/2017	Event	Internal, Peer External	SGT-EEF
8.8	Community awareness of SGT-MAP services	AU	EGP	4	15/4/2017	14/6/2017	Service	Internal, Peer	SGT-PEF
9.1	Monitoring of MNGT activities by PMT	UNIABDN	EUP	7	15/11/2016	14/10/2017	Report	Internal, Peer	SGT-PEF, SGT-DEF
			EGP	7	15/11/2016	14/10/2017			
9.2	MNGT activities and organization of PCT	UNIABDN	EUP	4	15/1/2017	14/8/2017	Report	Internal, Peer	SGT-MEF, SGT-CEF, SGT-DEF
			EGP	4	15/1/2017	14/8/2017			
9.3	Follow up of project expenses	UNIABDN	EUP (See Table 1 in Reports sheet)	6	15/11/2016	14/10/2017	Report	Internal	SGT-DEF

SGT-MAP Project Activities Monitoring Sheet									
Second Year (15/10/2017 – 14/10/2018)									
Activity No.	Activity title	Lead Partner	Participating Partners [Egyptian Partners (EGP)/ European Partners (EUP)]	Total duration (in weeks)	Start Date	End Date	Deliverable Type	Evaluation Level	QA Form Used for Evaluation
2.3	Development of program courses	ASSTMT	EUP (See Table 1&2 in courses sheet)	12	15/10/2017	14/2/2018	Courses Specifications	Internal, Peer, External	SGT-CSEF
			EGP (See Table 1&2 in courses sheet)	12	15/10/2017	14/2/2018			
2.4	Development of teaching materials	ASSTMT	EUP (See Table 3 in courses sheet)	6	15/8/2018	14/10/2018	Teaching material	Internal, Peer, External	SGT-CCEF
			EGP (See Table 3 in courses sheet)	6	15/8/2018	14/10/2018			
2.5	Accreditation of the developed program	ASSTMT	EUP	3	15/3/2018	14/5/2018	Report	Internal	SGT-DEF
			EGP	6	15/2/2018	14/5/2018			
3.1	Determination and purchasing of experimental kits and equipments	ASWU	EUP	6	15/11/2017	14/2/2018	Report	Internal	SGT-DEF
			EGP	8	15/11/2017	14/6/2018			
3.2	Development of experiments materials	ASWU	EGP	8	15/6/2018	14/10/2018	Teaching material	Internal, Peer, External	SGT-CCEF
4.1	Development of the self study reports of the professional training courses to be accredited	AASSTMT	EUP	5	15/2/2018	14/5/2018	Training material + Report	Internal	SGT-CCEF, SGT-DEF
			EGP	5	15/2/2018	14/5/2018			
5.1	Organizing a workshops on future smart grid	UNI-KLU	EUP (UNI-KLU) --> (See Table 1 in Events Sheet)	3	15/10/2017	14/3/2018	Event	Internal, Peer External	SGT-WSEF
			EGP	2	15/1/2018	14/3/2018			
5.2	Development of a roadmap toward upgrading the conventional grid	UNI-KLU	EUP	8	15/11/2017	14/7/2018	Report	Internal, Peer	SGT-DEF
			EGP	8	15/11/2017	14/7/2018			
7.1	Internal assessment of QA activities	HU	EUP	3	15/1/2018	14/10/2018	Report	Internal	SGT-IEF
			EGP	3	15/1/2018	14/10/2018			
7.2	Peer review of teaching materials	HU	EUP	2	15/12/2017	14/2/2018	Report	Peer	SGT-CCEF
			EGP	4	15/12/2017	14/9/2018			
7.3	External assessment of QA activities	HU	EUP	6	15/10/2017	14/9/2018	Report	External	SGT-DEF, SGT-PEEF
			EGP	6	15/10/2017	14/9/2018			
7.4	Conducting surveys	HU	EGP	4	15/8/2018	14/10/2018	Report	Internal, Peer	SGT-DEF
8.1	Design and maintenance of project website	AU	EGP	3	15/10/2017	14/8/2018	Service	Internal, Peer, External	SGT-WEF
8.2	Marketing activities of the training courses	AU	EUP	2	15/2/2018	14/8/2018	Report	Internal	SGT-DEF
			EGP	8	15/1/2018	14/8/2018			
8.4	Organizing information sessions	AU	EGP(ASWU) --> (See Table 1 in Events Sheet)	4	15/3/2018	14/5/2018	Event	Internal, Peer External	SGT-EEF
8.5	Securing financial sustainability of SGT-MAP	AU	EGP	12	15/11/2017	14/10/2018	Report	Internal	SGT-DEF
8.6	Establishment of a spin-off service	AU	EGP	5	15/10/2017	14/10/2018	Service	Internal	SGT-PEF
8.7	Linking SGT-MAP with labor market	AU	EGP	2	15/6/2018	14/8/2018	Event	Internal, External	SGT-PEF
8.8	Community awareness of SGT-MAP services	AU	EGP	10	15/1/2018	14/8/2018	Service	Internal, External	SGT-PEF
9.1	Monitoring of MNGT activities by PMT	UNIABDN	EUP	5	15/10/2017	14/10/2018	Report	Internal, Peer	SGT-PEF, SGT-DEF
			EGP	5	15/10/2017	14/10/2018			
9.2	MNGT activities and organization of PCT	UNIABDN	EUP	5	15/10/2017	14/8/2018	Report	Internal, Peer	SGT-MEF, SGT-CEF, SGT-DEF
			EGP	5	15/10/2017	14/8/2018			
9.3	Follow up of project expenses	UNIABDN	EUP (See Table 1 in Reports sheet)	6	15/11/2017	14/10/2018	Report	Internal	SGT-DEF

SGT-MAP Project Activities Monitoring Sheet									
Third Year (15/10/2018 – 14/10/2019)									
Activity No.	Activity title	Lead Partner	Participating Partners [Egyptian Partners (EGP)/ European Partners (EUP)]	Total duration (in weeks)	Start Date	End Date	Deliverable Type	Evaluation Level	QA Form Used for Evaluation
2.4	Development of teaching materials	ASSTMT	EUP (See Table 3 in courses sheet)	6	15/10/2018	14/12/2018	Teaching material	Internal, Peer, External	SGT-CCEF
			EGP (See Table 3 in courses sheet)	6	15/10/2018	14/12/2018			
2.6	Implementation of the program courses	ASSTMT	EUP	18	15/12/2018	14/5/2019	Report	Internal, Peer, External	SGT-DEF
			EGP	18	15/12/2018	14/5/2019			
3.3	Implementation of the experiments	ASWU	EGP	19	15/12/2018	14/9/2019	Teaching material + Training material	Internal, Peer, External	SGT-CCEF
4.2	Implementation of the professional training courses.	AASMTM	EGP	4	15/12/2018	14/9/2019	Training material + Report	Internal, Peer, External	SGT-CCEF, SGT-DEF
7.1	Internal assessment of QA activities	HU	EUP	3	15/1/2019	14/10/2019	Report	Internal	SGT-IEF
			EGP	3	15/1/2019	14/10/2019			
7.2	Peer review of teaching materials	HU	EUP	2	15/2/2019	14/4/2019	Report	Peer	SGT-CCEF
			EGP	2	15/2/2019	14/4/2019			
7.3	External assessment of QA activities	HU	EUP	10	15/11/2018	14/8/2019	Report	External	SGT-DEF, SGT-PEEF
			EGP	10	15/11/2018	14/8/2019			
7.4	Conducting surveys	HU	EGP	5	15/10/2018	14/2/2019	Report	Internal, Peer	SGT-DEF
8.1	Design and maintenance of project website	AU	EGP	5	15/11/2018	14/10/2019	Service	Internal, Peer, External	SGT-WEF
8.2	Marketing activities of the training courses	AU	EUP	3	15/11/2018	14/8/2019	Report	Internal	SGT-DEF
			EGP	11	15/10/2018	14/9/2019			
8.3	Organizing a workshop on impacts of smart grid on the society	AU	EGP(AASTMT and ASWU) -> (See Table 1 in Events Sheet)	4	15/4/2019	14/5/2019	Event	Internal, Peer, External	SGT-WSEF
8.4	Organizing info. Sessions	AU	EGP(AASTMT, AU and HU) -> (See Table 1 in Events Sheet)	8	15/1/2019	14/9/2019	Event	Internal, Peer, External	SGT-EEF
8.5	Securing financial sustainability of SGT-MAP	AU	EGP	6	15/12/2018	14/10/2019	Report	Internal	SGT-DEF
8.6	Establishment of a spin-off service	AU	EGP	14	15/10/2018	14/10/2019	Service	Internal	SGT-PEF
8.7	Linking SGT-MAP with labor market	AU	EGP	9	15/10/2018	14/9/2019	Event	Internal, External	SGT-PEF
8.8	Community awareness of SGT-MAP services	AU	EGP	20	15/10/2018	14/9/2019	Service	Internal, External	SGT-PEF
9.1	Monitoring of MNGT activities by PMT	UNIABDN	EUP	6	15/10/2018	14/10/2019	Report	Internal, Peer	SGT-PEF, SGT-DEF
			EGP	6	15/10/2018	14/10/2019			
9.2	MNGT activities and organization of PCT	UNIABDN	EUP	6	15/10/2018	14/8/2019	Report	Internal, Peer	SGT-MEF, SGT-CEF, SGT-DEF
			EGP	6	15/10/2018	14/8/2019			
9.3	Follow up of project expenses	UNIABDN	EUP (See Table 1 in Reports sheet)	6	15/11/2018	14/10/2019	Report	Internal	SGT-DEF

Also, the QA responsible team at HU developed a special QA evaluation form “SGT-IEF” to be used by the internal assessors for evaluating the overall performance of the project implementation in each partner according to some specific performance metrics formulated in a form of questions. This form was filled by the internal assessors in addition to the other required QA forms for evaluating other activities such as SGT-DEF, SGT-CSEF, and SGT-CCEF to evaluate the deliverable documents, developed course specifications, and developed course contents, respectively which are also developed by HU team and shared between all partners.

Moreover, the QA responsible team at HU contacts all partners and described clearly to all of them the different activities that need to be evaluated by the internal assessors in each partner. Moreover, the deliverables that need to be provided by each contact person/WPL to the internal assessors to aid them to evaluate the quality of each activity are also defined. In addition to that, the evaluation forms that should be used by the internal assessors to

evaluate the implementation of each activity are developed by HU team and defined for each partner. The following table shows this description which sent to all partners to be followed for the internal assessment process.

Partner	Activities to be evaluated by the internal assessors	Deliverables provided by WPL to the internal assessors	Evaluation Form used by internal assessors	Deliverable by the internal assessors
UNIABDN	Establishment of the project organization and discussion of the strategic plan.	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	Internal assessment report based on the filled evaluation forms and the monitoring process of different activities and deliverables provided by the partner
	Plan the multidiscipline interaction map and subject area	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Preparation of the program curricula map	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Monitoring of MNGT activities by PMT	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	MNGT activities and organization of PCT	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Follow up of project expenses	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	
	Development of courses materials allocated to the	Developed Courses	SGT-CCEF (Course Contents	



	partner	Materials	Evaluation Form)	
	Project implementation process by the partner members	All supported documents and evidences	Internal Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	
UNI-KLU	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	Internal assessment report based on the filled evaluation forms and the monitoring process of different activities and deliverables provided by the partner
	Development of courses materials allocated to the partner	Developed Courses Materials	SGT-CCEF (Course Contents Evaluation Form)	
	Project implementation process by the partner members	All supported documents and evidences	Internal Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	
US	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	Internal assessment report based on the filled evaluation forms and the monitoring process of different activities and deliverables provided by the partner
	Development of courses materials allocated to the partner	Developed Courses Materials	SGT-CCEF (Course Contents Evaluation Form)	
	Project	All supported	Internal	



	implementation process by the partner members	documents and evidences	Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	
ASSTMT	Approve the suggested curriculum map	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	Internal assessment report based on the filled evaluation forms and the monitoring process of different activities and deliverables provided by the partner
	Distribute the course among the consortium members	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	
	Development of courses materials allocated to the partner	Developed Courses Materials	SGT-CCEF (Course Contents Evaluation Form)	
	Project implementation process by the partner members	All supported documents and evidences	Internal Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	
AU	Design and maintenance of project website	Service + All supported documents and evidences	Website Evaluation Form (SGT-WEF)	Internal assessment report based on the filled evaluation forms and the monitoring process of different
	Organizing	Report on the	Deliverable	



	information sessions	event + All supported documents and evidences	Evaluation Form (SGT-DEF)	activities and deliverables provided by the partner
	Community awareness of SGT-MAP services	Report on the service + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	
	Development of courses materials allocated to the partner	Developed Courses Materials	SGT-CCEF (Course Contents Evaluation Form)	
	Project implementation process by the partner members	All supported documents and evidences	Internal Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	
HU	Internal assessment of QA activities	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	Internal assessment report based on the filled evaluation forms and the monitoring process of different activities and deliverables provided by the partner
	Peer review of teaching materials	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	External assessment of QA activities	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	



	Conducting surveys	Report + All supported documents and evidences	Deliverable Evaluation Form (SGT-DEF)	
	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	
	Development of courses materials allocated to the partner	Developed Courses Materials	SGT-CCEF (Course Contents Evaluation Form)	
	Project implementation process by the partner members	All supported documents and evidences	Internal Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	
ASWU	Development of program courses allocated to the partner	Courses Specifications + All supported documents and evidences	SGT-CSEF (Course Specifications Evaluation Form)	Internal assessment report based on the filled evaluation forms and the monitoring process of different activities and deliverables provided by the partner
	Development of courses materials allocated to the partner	Developed Courses Materials	SGT-CCEF (Course Contents Evaluation Form)	
	Project implementation process by the partner members	All supported documents and evidences	Internal Evaluation Form (SGT-IEF)	
	Any other activity conducted by the partner	Related supported documents and evidences	Suitable QA Form according to the nature of the activity	



All the reports prepared by the internal assessors in each partner in addition to the QA forms filled by the internal assessors were shared by the contact person of each partner through the project Dropbox folder which are accessible by all partners for exploring them and proposing the required corrective actions in different partners for different activities.

4 Results

Based on the provided internal assessment reports and filled QA forms by the internal assessors in different partners (available in project Dropbox folder), Internal auditing for self-assessment was conducted in each partner university through hired internal assessor(s) to evaluate the quality of the project deliverables and the produced teaching materials. Five QA forms were developed and mainly used for the internal assessment process in each partner which are SGT-DDT, SGT-DEF-SGT-IEF, SGT-CSEF, and SGT-CCEF. The number of filled QA forms (SGT-IEF) was 16 and the average Performance Evaluation Percentage of all partners based on the filled SGT-IEF was rated by 87.64% which indicates that a good performance was recognized by the internal assessors for implementing the project activities within the project partners.

5 Conclusions

The project partners almost succeeded in achieving all their allocated tasks with the targeted level of quality for different activities and deliverables. However, not all the partners provide the internal assessment reports that supposed to be submitted by the internal assessors hired in each partner. Therefore, the overall evaluation was done based on the available reports and filled QA forms by project partners.