

Doc. 300.1.3

Date: Date

Feedback Report from EEC Experts

- **Higher Education Institution:**
University of Cyprus

- **Town:** Nicosia

- **Programme of study**
Name (Duration, ECTS, Cycle)

In Greek:

ΜΑΣΤΕΡ ΠΡΟΗΓΜΕΝΑ ΥΛΙΚΑ ΚΑΙ NANOTECHNOLOGIA

In English:

MASTER IN ADVANCED MATERIALS AND
NANOTECHNOLOGY (AMN)

- **Language(s) of instruction:** English

- **Programme's status:** Currently Operating

- **Concentrations (if any):**

In Greek: Concentrations

In English: Concentrations



The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the “Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws” of 2015 to 2021 [L.136(I)/2015 – L.132(I)/2021].

A. External Evaluation Committee (EEC)

<i>Name</i>	<i>Position</i>	<i>University</i>
Artemis Stamboulis	Professor of Biomaterials	University of Birmingham
Chiara Bertarelli	Professor in Materials Science and Technology	Politecnico Di Milano
Ibrahim M. El-Sherbiny	Prof of Materials Science and Nanomedicine	University of Science and Technology, Zewail City
Name	Position	University
Name	Position	University
Name	Position	University



B. Guidelines on content and structure of the report

The EEC based on the external evaluation report (Doc.300.1.1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4) and the Higher Education Institution's response (Doc.300.1.2), must justify whether actions have been taken in improving the quality of the programme of study in each assessment area.

1. Study programme and study programme's design and development (ESG 1.1, 1.2, 1.7, 1.8, 1.9)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
It was noted that the number of the available running elective courses is very small although in the programme of study a much larger number of elective courses are offered. Specifically, in the last three years only one elective course was delivered for reasons that were not clear to the EEC but seem to be related to the teaching staff being involved in other activities including administrative roles. It is therefore important to review the current situation and try to provide all the elective courses offered in the original programme curriculum.	We do recognize that during the last 3 years the number of elective courses offered at the AMN postgraduate programs was very limited, as correctly identified by the EEC. This is attributed to the fact that some of the teaching staff involved in the program were/are involved in administrative positions or were/are absent on a sabbatical leave (e.g. Prof. I. Giapintzakis holds the position of the Vice Rector for International Affairs, Finance and Administration since October 2018, Prof. T. Krasia currently holds the position of the Dpt. Chairperson, Assoc. Prof. M. Zervos, Prof. Krasia and Prof. Kyratsi were on a sabbatical leave during the Spring semester 2021-2022, the Spring Semester 2022-2023 and 2022 (annual leave) respectively. Considering this gap, so far, our efforts were mainly focused in hiring special teaching staff to deliver the compulsory courses offered in the program. Moreover, due to the limited number of students enrolled in the PhD program and the limited number of teaching staff involved in the AMN graduate programs (that also contribute to the teaching load of the undergraduate program), it is not feasible to offer all elective courses appearing in the initial list on a regular basis. More precisely, due to the existing UCY regulations requiring the enrolment of at least 5 students per postgraduate course, we cannot offer all elective courses	Compliance We believe that the solution offered is feasible and viable for the future of the course and satisfies the expectations of the EEC.

	<p>(some of them are cancelled because of the limited number of students enrolled). For this reason, the list of elective courses was revised and the updated list appears in Annex I.</p> <p>In January 2025, 4 compulsory courses will be offered namely: MMK508 (Research Methodology), MMK553 (Surface Engineering), MMK554 (Materials Characterization Methods) and MMK557 (Polymer Nanocomposites).</p> <p>From September 2025 onwards a balanced program will be applied, following the program structure appearing under https://www.ucy.ac.cy/mme/programmes/phd/amn/?lang=en.</p> <p>More precisely, the following courses will be offered in September 2025: MME505, MME506, MME555, MME567, MME516, MME518, MME512 and MME523.</p> <p>We should also notice that technical elective courses can also be selected from the list of courses appearing in Annex I, and from other departments of the Faculty of Pure and Applied Sciences and the Faculty of Engineering that are relevant to the students' research interests. This increases the number of available courses for the students to enroll.</p>	
<p>The EEC noticed that the interaction with the stakeholders is limited to research arrangements between the stakeholders and the individual academics involved. This is an area of improvement through increasing the involvement of the industrial stakeholders in the curriculum design satisfying the requirement of the industry needs including the local industry and develop feedback opportunities from industry to improve the overall running of the programme</p>	<p>Following the suggestion of the EEC Committee, a decision was reached at the 01/2025 departmental meeting that was held on the 22nd of January 2025, for creating a Steering Committee for the AMN graduate programs, consisting of 3-4 industrial stakeholders (local and external) and 2 academics from external universities working in similar area of research, who will be actively involved in the curriculum design and have the capacity to comment on the compliance of</p>	<p>Compliance EEC is happy to see this development. Both academics involved are excellent choice as are the industrial partners too.</p>

<p>and the students learning and professional development experience. The EEC also recommends that it is necessary to create a steering committee dedicated to advise and review the activities of the programme, also involving a larger number of the key stakeholders including: i) international industrial stakeholders, ii) at least one other academic from an external university working in similar area of research and iii) one key professional association that has the capacity to comment on the compliance of the programme with the needs of the local industry.</p>	<p>the programme with the needs of the industry. It is expected that this Action will be completed by March 2025.</p> <p>Proposed Names:</p> <p>Industrial stakeholders:</p> <ol style="list-style-type: none"> 1. Oerlikon Surface Solutions AG (Balzers/Lichtenstein) – Klaus Boebel, R&D Portfolio Manager 2. AmaDema Ltd. (local, design and manufacturing of advanced composite materials, Cyprus Entrepreneurship Award “Research and Innovation” winner 2023) – Dr. Vassilis Darkonakis, Managing Director and Co-Founder 3. Elysee Irrigation Ltd. (local, the largest plastics manufacturer in Cyprus) – Mr. Panos Protopapas, General Manager. <p>Academics:</p> <ol style="list-style-type: none"> 1. Prof. Urszula Stachewicz (Professor in Material Science at AGH University of Krakow, Poland) 2. Prof. Jochen M. Schneider (Professor and Chair of Materials Chemistry, RWTH Aachen/Germany) 	
<p>The EEC noted that the programme admits students with diverse background. The design of the curriculum should take this factor into consideration, and it is recommended that an introductory course to Advanced Materials is also included within the context of the programme. This course should be compulsory at least for the students who do not have background in the field. These students will have to choose one Elective course to balance the obtained credits.</p>	<p>Following the suggestion of the EEC, a decision was reached at the 01/2025 departmental meeting that was held on the 22nd of January 2025, for including a new course in the list of elective courses of the AMN graduate programs entitled: “Introduction to advanced materials”. This course will be compulsory for the students who do not have a background in the field. An indicative syllabus is provided in Annex II. It is expected that this Action will be completed within the academic year 2025-2026.</p>	<p>Compliance</p>

The committee noticed that statistics are not used to help with programme reviews and generally quality assurance is not applied to high standards. The UCY administrative staff could undertake this task.

The following statistics were collected by the MME administrative staff, indicating a steady increase in the number of students enrolled in the AMN graduate programs from 2022-2025.

SEMESTER	MSc		PhD
	FEMALE	MALE	FEMALE
Fall Semester 2022	0	0	0
Spring Semester 2022	0	0	0
Fall Semester 2023	0	2	0
Spring Semester 2023	0	0	0
Fall Semester 2024	2	2	0
Spring Semester 2024	0	2	0
Fall Semester 2025	2	4	0
Spring Semester 2025	2	0	0

Foreign Students, Years 2022 - 2023 -2024-2025: 5
No student dropouts during the years 2022-2025.

Employment of AMN graduate students – examples: ALERGO Management consulting and engineering - Health and Safety Officer; R&D Engineer, Engineering Design & Prototyping (EDP) Division - Cyprus Research & Innovation Center Ltd; Research Scientist - Research Scientist, ATSP Innovations, USA; postdoctoral research associate – UCY; eBOS - Project Manager; Teaching Personnel – European University Cyprus, etc.

Formalized procedures for quality assurance are applied at the departmental level including the following points:

- Students' engagement in the improvement of the educational procedures, is realized through their representatives (5 in total – elected through student elections and may include both undergraduate and

Compliance

	<p>postgraduate students) in the Departmental Council.</p> <ul style="list-style-type: none"> • Students' further participation in the Department's educational process assessment involves engagement participation on a fundamental level thus enhancing its efficacy. The Postgraduate Studies Committee organizes an annual meeting with the graduate students and discusses possible issues that need the Department's attention so as to improve the educational process. The last meeting took place on the 16th of October 2024. • Academic personnel has been actively involved in shaping (among others) the departmental strategy related to its postgraduate studies, through the preparation of its Strategic Plan. More precisely, at the 09/2020 departmental meeting (September 23, 2020), the department's academic personnel worked effectively and collaboratively on the finalization of the 2021-2025 Departmental Strategic Plan that was drafted by the members of the Strategic Plan Committee. For the continuous monitoring and periodic revisions (once per year) of the departmental goals set in the Strategic Plan related to its mission and vision, the Department at its 08/2024 meeting that was held on the 26th of May 2024, re-appointed the Strategic Plan Committee (consisting of 4 faculty members) https://www.ucy.ac.cy/mme/home/the-department/?lang=en). • The Departmental Council (08/2024 meeting; May 16, 	
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	<p>2024) decided to establish an External Advisory Board (EAB). The EAB is teamed by 8 distinguished academics and investigators from abroad as well as investigators / executive personnel from the industry (members confirmed in December 2024 – invitation acceptance). The EAB will meet annually to internally assess the Department and suggest actions in order to meet the goals of the Department's Strategic Plan. The EAB will also foster links between the Department and the local (and international) industry while it will also serve to bridge the gap between the academia, the society and the market.</p> <ul style="list-style-type: none"> In 2023, the Department's Postgraduate Studies Committee evaluated the outcome of the Study Program evaluation results. Based on that, a document on the implementation of improvement actions in the graduate program of study was prepared and submitted to UCY's Internal Quality Assurance Committee after being approved by the Departmental Council (08/2023; November 8, 2023). The same process will be also applied for this year's study program evaluation results that were received in December 2024. <p>Concerning plagiarism, UCY provides antiplagiarism online tools <i>SafeAssign</i> and <i>Turnitin</i> to academic staff through Blackboard (https://help.blackboard.com/SafeAssign/Instructor/Language_Support; https://help.blackboard.com/Learn/Instructor/Ultra/Grade/Turnitin). UCY has well-established policies</p>	
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	<p>and procedures to safeguard the quality and the fairness of exams. Plagiarism cases are reported to the Disciplinary Committee for Student Issues, an institution-wide committee pertinent cases are thoroughly investigated. Penalties include the following: (a) verbal reprimand; (b) written reprimand; (c) graded penalties for offenses related to exams or assignments; (d) in-campus social work (unpaid); (e) suspension of student benefits, except benefits that affect learning.; (f) Imposition of a fine for partial or total compensation for damages caused to equipment or the buildings or any other property of the University (g) Expulsion from the University for a period of one or two semesters. (h) Removal from Student Register. (i) Combination of the aforementioned penalties. Non-compliance with a penalty is considered a disciplinary offense, while students who do not fulfill any sentence that it has been imposed on them, they don't get a degree.</p>	
<p>The committee also noted that the marketing of the programme is almost non-existent. There is a profound lack of strategy to attract international students. Although there is an effort from the teaching academic staff to promote the programme to the undergraduate students. This is not established and should be done on a regular basis and target undergraduate students from other schools/departments too.</p>	<p>The department advertises the AMN postgraduate programs in online platforms such as FindAUniversity Ltd. (FindAPhD.com/ FindAMasters.com). In order to reinforce the marketing of the program and attract international students, a LinkedIn page was created specifically for the AMN graduate programs offered by the department. (https://www.linkedin.com/company/105986573/admin/dashboard/). It is expected that the new state-of-the-art premises of the School of Engineering will attract new postgraduate students. To this end, research groups will be preparing short promo videos at the new facilities and research laboratories to be included in</p>	<p>Compliance</p>

	<p>advertising platforms, social media etc.</p> <p>Moreover, during the last 2 years the department organizes on an annual basis (January) an Info Day aiming to inform its undergraduate students and students from other departments about the postgraduate programs the Department is offering (the invitation is sent to all departments of the School of Engineering and to all departments of the School of Pure and Applied Sciences). The day includes presentations from all faculty members on their research activities, followed by a poster session during which the students can actively interact with faculty members, postdoctoral researchers and postgraduate students. The latest Info Day took place on the 22nd of January 2025.</p>	
<p>Although the programme has achieved the targeted number of students for this year and January 2025 entrance, the number of students is too low to secure the sustainability of the programme, and the EEC recommends that a significant effort should be placed in this particular issue.</p>	<p>By taking specific actions (as described above) in order to promote the AMN graduate programs within the University and also attract students from abroad, we will be targeting an increase of the number of students admitted from 10 to at least 20 within the next 3 years.</p>	Compliance
<p>There is a profound lack of sufficient technical support which has a significant impact on the students' learning experience because of the small available practical and hands-on labs offered in the courses. This will have a significant impact on the sustainability of the programme as well as its quality as it compromises the capability of the programme to reach its targeted potential and objectives.</p>	<p>Practical, hands-on laboratories are already offered within the AMN postgraduate courses. Examples include the following:</p> <p>MME557: Polymer Nanocomposites</p> <ul style="list-style-type: none"> • Synthesis of polymer-coated metallic nanoparticles • Fabrication of magnetic electrospun polymer nanocomposite fibers • Fabrication of polymer/carbon fiber composites by 3D printing • Materials characterization: Mechanical testing, microscopy (SEM, AFM), UV-vis, FTIR. 	Compliance

	<p>MME554: Materials Characterization Techniques</p> <ul style="list-style-type: none"> • Powder X-Ray Diffraction • Scanning Electron Microscopy • Elemental Analysis via Energy Dispersive Spectroscopy • Thermal Analysis <p>MME553: Surface Engineering</p> <ul style="list-style-type: none"> • Mechanical and thermal surface treatments • Deposition of thin films and coatings • Tribological evaluation of surfaces and coatings • Analysis of morphology, topography and mechanicals properties <p>As pointed out by the EEC, for many years the department was lacking sufficient technical staff to support the large number of teaching and research laboratories that are available in the department. Fortunately, since March 2024, a new permanent position (technician-Machinery) was given to the department and very recently (December 2024) the 3rd permanent position (laboratory technician) was allocated to the department. The strengthening of the technical support in the department will certainly improve the quality of the AMN programs by enabling the introduction of new laboratory exercises/demos and ensuring effective technical support of the research activities of students and faculty on a daily basis.</p>	
<p>The EEC also noticed that there is not adequate career support for postgraduate students although career support is offered to undergraduate students. It is therefore recommended that appropriate career support is offered to all postgraduate</p>	<p>All the services of the UCY Career Center are addressed to both, undergraduate and postgraduate students.</p> <p>More precisely the Center offers:</p> <p>(a) career guidance services;</p> <p>(b) jobs and internships in companies and organizations in</p>	<p>Compliance</p>

<p>students including the students of this programme.</p>	<p>Cyprus and Europe (e.g. professional mobility through EURES, jobs in European institutions through EPSO), c) Career academy, seminars and workshops to develop professional and job search skills (e.g. resume, interview, etc.), (d) Networking activities with employers (eg Career Fairs, Meet the Employers). More information can be found under: https://www.ucy.ac.cy/careercentre/?lang=en</p>	
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2. Student - centred learning, teaching and assessment (ESG 1.3)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
Despite the low number of students can be positive for constructive teaching, it is also a limitation in terms of course viability. A manageable number of students would benefit the viability as well as meet the international standards for this type of programmes.	As previously mentioned, by taking specific actions in the near-future, we will be targeting towards an increase in the number of graduate students admitted in the AMN graduate programs from 10 to at least 20 within the next 3 years.	Partially Compliance It is understandable that the increase in the number of students can only happen gradually and in the future.
A larger number of students is necessary to apply modern teaching technology such as digital tools to improve lecture delivery and the learning experience of the students.	20+ graduate students (the number to be targeted in the next 3 years) is considered a manageable number for applying modern teaching technologies, such as digital tools. The latter promote active and collaborative learning, access to a wide range of scientific resources, enhanced communication between students and the instructor and a flexible learning environment. This group size can actually be ideal for personalized and interactive learning experiences which are enabled by such technologies. All the above emphasize on the necessity of increasing the number of admitted students within the next 3 years.	Partially Compliance It is understandable that the increase in the number of students can only happen gradually and in the future.
It is recommended to increase the practical content within the offered coursework to prepare the students for their future academic or industrial career development and employability.	As mentioned above, the new administrative personnel (technicians) hired/to be hired in the department will certainly improve the quality of the AMN programs by enabling the introduction of new laboratory exercises/demos and ensuring an effective technical support of the research activities of students and faculty on a daily basis.	Partially Compliance
There is space for improvements related to quality assurance of the assessment methods that include the use of rubrics (standardised	The University of Cyprus (UCY) utilizes continuous assessment in all academic programs. According to the general rules of studies, a	Partially Compliance Standardised marking (including second marking for reports and written exams) could be also

<p>grading) and introduction of consistent continuous assessment without relying 100% on exam outcomes.</p>	<p>student's performance is evaluated in at least 2 different ways. One must be the final written examination that must not exceed 60%. Students are evaluated through various methods (besides midterm and final exams) including among others homework, oral and poster presentations, lab reports, team projects etc. For more information on the assessment methods employed in AMN graduate courses please visit – https://www.ucy.ac.cy/mme/programmes/phd/amn/?lang=en (course description/course details).</p>	<p>introduced for written or oral examination, presentations etc.</p>
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3. Teaching staff (ESG 1.5)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
The EEC noted that there are no visiting teaching staff, and it is recommended that visiting teaching staff could be included to ensure diversity of knowledge share from research backgrounds related to Advanced Materials but rich in interdisciplinary activities especially benefiting the elective courses.	We recognize the necessity of recruiting visiting teaching staff with an academic background related to Advanced Materials. In fact, the department offered such a position to a distinguished Professor from Australia to teach the course "MMK551–Nonlinear Mechanics of Solids and Structures" during the Spring Semester 2025, but unfortunately, in October 2024, he informed the department that he will not be able to travel to Cyprus due to personal reasons. The department will continue seeking distinguished visiting academic personnel that could share their knowledge and expertise through the teaching of both, compulsory and elective AMN graduate courses.	Compliance
An effort should be made to retain the numbers of publication to the possible optimum numbers as this reflects on the productivity of the students and the teaching staff in the programme of study.	The number of publications appearing in the presentation that was held on the 8 th of November 2024, was calculated based on the publications of 5 members of the academic staff (T. Krasia, T. Kyratsi, I. Giapintzakis, M. Zervos, C. Rebholz). This number was re-calculated by also including the publications of Dr. Tzeranis and Dr. Vavourakis. The updated Figure is provided in Annex III.	Compliance

4. Student admission, progression, recognition and certification (ESG 1.4)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
It is recommended and the EEC encourages the participation in Erasmus student exchange programmes to strengthen the international exposure of the programme and improve the students learning experience from different research environments.	<p>The MME faculty encourages the participation of graduate students in Erasmus student exchange programmes. Examples include:</p> <ul style="list-style-type: none"> The participation of Mr. Paraskevas Kyriacou (former MSc student in AMN MSc program and currently enrolled in the AMN PhD program) in an Erasmus student exchange program during Spring semester 2023 (University of Naples "Federico II") The participation of Ms. Georgia Maria Christodoulou (enrolled in the AMN MSc program) in Erasmus+ Internships during the summers of 2024 and 2025, for a period of six months in total (University of Leoben/Austria) The participation of Mr. Kyriacos Ioannou (enrolled in the AMN MSc program) in an Erasmus+ Internship during the summer of 2025, for a period of three months (Maria Curie-Skłodowska University, Lublin/Poland) 	Compliance
The admissions criteria are not clear, for example, the entrance requirements should be made known to the applicants and be presented in an official document uploaded on the website of the programme study.	<p>The department follows the University regulations concerning the admission criteria set for postgraduate studies, as appearing under the following link: https://www.ucy.ac.cy/graduateschool/research/admission-requirements/?lang=en This link has been included on the website of the programme of study (see under Specific Admission Requirements).</p>	<p>Partially Compliance</p> <p>It is understandable that the department follows University regulations that are general rules applied throughout the University. We believe that the admissions criteria for the master's degree should follow the University guidelines but should also have specific minimum requirements, for example minimum performance in specialized subjects, or minimum degree classification (e.g., good or</p>



		very good). This will ensure high quality student admissions.
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5. Learning resources and student support (ESG 1.6)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
Students could be mentored by external to the programmes academics who have extensive experience in mentoring students and postgraduate researchers to support their professional and personal skills development if the system of the University of Cyprus allows.	The University of Cyprus organizes several seminars addressed to postgraduate students for supporting their professional and personal skills development. Examples include several actions organized by the UCY Career Center as stated above, (recent examples can be also found in https://www.ucy.ac.cy/careercentre/news-and-events/), the Interdisciplinary Forum organized by the Graduate School, aiming to the strengthening of the dialogue between young scientists and the wider scientific community, etc. Moreover, as part of the course MME508 – Research Methodology (see course description in Annex IV), seminars are given by members of the Research and Innovation Foundation entitled “The Research Innovation Foundation and National Funding Opportunities for Young Researchers” and «European R&I Funding Opportunities for Young Researchers».	Partially Compliance Mentoring schemes offer a more personalized support to students and researchers, helping them to structure and plan their personal and professional development better and more effectively. If the University of Cyprus allows to develop a mentoring scheme for the course, it would be a great support to students.

6. Additional for doctoral programmes (ALL ESG)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
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7. Eligibility (Joint programmes) (ALL ESG)

EEC's final recommendations and comments on the HEI's response

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
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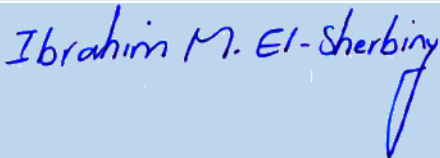
C. Conclusions and final remarks

The EEC must provide final conclusions and remarks, with emphasis on the correspondence with the EQF.

EEC's final conclusions and remarks

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	EEC's final recommendations and comments on the HEI's response
Overall, the programme of study is of a high quality, and it is delivered by satisfying a good number of standards as described in the different sections in this report. There is no doubt that improvements can be made in several areas including the design of the curriculum, the assessment methods, the expanding in the number of running elective courses, the more effective involvement of stakeholders in the curriculum design improving learning experience and employability of students, the career support of students and the increase of the number of students in the programme by improving the marketing strategy and advertising the programme in both national and international levels.	The points appearing in Conclusions and final remarks have already been addressed in previous sections.	Compliance Most points have been addressed above with some showing partial compliance.

D. Signatures of the EEC

Name	Signature
Artemis Stamboulis	
Chiara Bertarelli	
Ibrahim M. El-Sherbiny	
Click to enter Name	
Click to enter Name	
Click to enter Name	

Date: Click to enter date

