PART 1 - General information about the respondent

*I am responding to this survey representing:

   Part-147 organisation or association representing the Part-147 organisation

   Part-145 organisation or association representing the Part-145 organisations;

Name of your organisation

   Aeronautical Repair Station Association
   Aviation Technician Education Council

Your first, family name

   Marshall Filler, Managing Director & General Counsel, ARSA, marshall.filler@arsa.org
   Crystal Maguire, Executive Director, ATEC, crystal.maguire@atec-amt.org

Note: Information about the respondents will be kept confidential.

PART 2 - Specific information, regarding Part-66 and Part-147 rules

Section 2.1 General remarks — Generic issues

Please add below the main Part-66 and Part-147 concerns; high-level suggestions; adequacy of the current concepts; omissions or inconsistencies; new approach(es); any needs to modernise the rules; needs for more precise rules regarding the approval of courses and the issue of Aircraft Maintenance Licence (AML); undue   complexity; standardisation matters; expected Agency action(s) such as safety promotion; etc.

Issue number	Text and proposal
1.	Recognition of competency through knowledge, which must be based on training and experience—the current system is too dependent upon "seat-time" (hours of training) rather than ability to perform an assigned task or tasks.
2.	Rules need to be interpreted or changed to recognize the various responsibilities of each certificate holder. The part 147 is responsible for providing basic elements through training programs. The part 145 is responsible for employing competent individuals (some of which need individual licences) and for ensuring the totality of the work scope is performed properly. The individual certificate holders have unique but limited roles in that multi-layered safety system.

Section 2.2 Specific remarks - Detailed Part-66 and Part-147 requirements

You are invited to provide your comments/suggestions/remarks, regarding detailed Part-66 and Part-147 requirements. You can do that by one of the following ways:

1. Please use the attached file (Annex A Part-66 and 147 tables – detailed requirements) and provide input in one table or/and the other. You can select the requirements for which you have remarks by indicating 'Yes'. In such a case, a qualitative judgement should be provided under the heading 'Justification and proposal'. When needed, please indicate whether the review of the Implementing Rules and/or just the   development/adjustment of AMCs/GMs could be the appropriate action or specify any other expected Agency action(s). After filling in the file, please upload it, using the button below.

2. Alternatively, you can use the table below and provide your input on the detailed Part-66 and Part-147 requirements:

Part-66/14	Justification and proposal
1.	See responses to specific questions, below.

Question number	Issue	Comments and proposals
	Section 2.3 Specific questions on Part-66 AIRCRAFT MAINTENANCE LICENCE (AML) TYPE RATING TRAINING (TRT)	

1	**Simplification of Part-66**
	
	(a) Do you think that Part-66 has become too complex?
	
	(b) Should the basic licence system (AML issuance) be simplified (number of categories, combination of privileges (e.g. B1.1 + B2), simpler qualification requirements, etc.)?
	
	(c) Would it be possible to provide an alternative to the rating endorsement by introducing the possibility for a 'company authorisation' for specific aircraft or tasks (only valid within the maintenance organisation, but staff can release to service aircraft registered in any Member State)?
	
	— Should this alternative be limited to non-complex aircraft?
	
	— Should this be also possible for B2 license holders for more complex aircraft (similar avionics equipment lines for a wide range of aircraft types)?
	
	— Should this be possible for aircraft for which Part-147 type rating training is not available (e.g. 'legacy aircraft')?
	
	(d) Should type rating training courses directly approved by a competent authority be automatically recognised by all competent authorities for the purpose of type rating endorsement in the licence?
	
	(e) Should the current category C license be kept? Should the 'release to service' requirement for line and base maintenance be reviewed?
	
	(f) Are there elements from the FAA licensing system (or any other licensing system) which could be taken into consideration? If yes, which ones?
	
	(g) Do you have any other suggestion?
		(1)
		
		(a) Yes, part 66 has become too complex and may not achieve the result of imparting the desired knowledge to ensure persons are capable of performing assigned tasks associated with the "rating". While certain basic standards of knowledge, skills, and professional attitude is expected, ultimately the newly hired employee will begin his/her career performing only the most basic tasks. His assessment by the part 145 will determine levels of his/her increased responsibility. Part 66 should bring more people into the industry, not to seek out barriers to prevent them.
		
		(b) Yes
		
		(c) Yes, approved maintenance organisations are responsible for training (147.A.145) and business requirements do not easily match governmental "categories" of knowledge and skills necessary to ensure individuals are capable of performing assigned tasks correctly without further training by the organization.
		
		   – No, the AMO is responsible as an organization for the individuals assigned tasks, so it should not matter what type of product or article is being worked on.
		
		   – Yes, for the same reason as stated above.
		
		   – Yes, since this is an obvious hole in the part 147/66 arena.
		
		(d) Yes, if type rating training requirements are retained, organisations should not have to obtain approval from multiple authorities. Acceptance of another competent authority's approvals would increase regulatory efficiencies without any increase in safety risks. Indeed, it enhances standardization and ensures centralized control and oversight by EASA.
		
		(e) The category can be eliminated if the part 145 is responsible for the approval for return to service of the work performed—the individual must know the technical requirements for performing the maintenance while the organisation remains responsible for the work performed.
		
		(f) The FAA's system provides the basic knowledge required to hold the certificate, but does not allow the work to be performed without the skills necessary for the particular task (see 14 CFR § 65.79). This places the responsibility on the individual for the task, where it must reside.
		
		(g) A recognition of the difference between knowledge and training would be realized if the system established baseline knowledge validation (through standard oral and practical testing) and requiring the part 145 to ensure competency in the tasks assigned.

Question number	Issue	Comments and proposals

2	**Maintenance of components**
	
	(a) Currently, component certifying staff are qualified in accordance with national rules, which creates a level playing field within the EASA Member States.
	
	— Should, instead, component certifying staff be qualified in accordance with company procedures?
	
	— Should a Part-66 licensing system be introduced for engines, propellers and other components? If yes, for which types of components?
		(2)
		
		(a) From an industry point of view, the qualifications by each member state does not provide a level-playing field with respect to the information provided, expected to be learned or learned by the individual being trained or attempting to establish qualifications. Indeed, having each member state establish qualifications makes the standardization of the information imparted extremely problematic. Under the current system, an individual can "forum shop" for the member states with the least stringent expectations/requirements.
		
		  – Yes, but not by "type".
		
		  – EASA should consider establishing criteria for repairmen certificates that is more formalized than the system used by the FAA and interlinked with the AMO's ratings and capabilities. In other words, part 66 licenses would be issued based upon standardized knowledge and practical capabilities at two levels, the first by "formalized" training "acceptable to or approved by the EASA" through a part 147 or 145 organization (as applicable) and part 145/AMO-specific training which ensures the individual can apply the general knowledge and capabilities to the particular operation.

3	**Practical training** (a) What are the implementation issues encountered with the 'practical training elements' of the basic knowledge requirements? (See Part-66 Appendix I, and Part-147) (b) What solution(s) would you propose to ensure a sufficient level of competence?	**(3)** (a) Prescriptive requirements in regulations prohibit revisions that ensure knowledge and capabilities of individuals can evolve with the technical changes in the industry. Practical/baseline training elements must be regularly reviewed and updated to ensure each individual has been provided a standard level of knowledge which can be tested to a uniform competency. (b) The rule must be competency-based, outlining the basic knowledge requirements and ensuring that testing is of both knowledge and skill. By providing an EASA knowledge test "standard" and requiring the part 145/AMO to ensure license candidates can apply that knowledge in a practical manner, the agency and industry can constantly adjust to the various technological environments—from the non-complex aircraft to the most sophisticated integrated components.
4	**Practical training** What are the implementation issues encountered with the 'practical training and assessment' of the TRT course? (See Part-66 Appendix III) In order to ensure that trainees receive sufficient hands-on training before the assessment and the endorsement of the type rating in the licence, what solution(s) would you propose to ensure a sufficient level of competence?	**(4)** There will always be a gap between what a student learns in the classroom and the knowledge and skill required for a specific company. There must be a transition from the "book" learning imparted by a technical school (even one that requires "hands-on" experience) and applying that knowledge in the operating environment of a particular part 145/AMO. The AMO must be able to evaluate the ability of the individual to accomplish the assigned task without "time" constraints or dictates. If the individual has the knowledge and practical skills to accomplish the assigned task (up to and including "certifying" the work on an article), s/he must be allowed to obtain the requisite licence.

Question number	Issue	Comments and proposals
5	**Robustness of the assessment (for any practical or on-the-job (OJT) training or certifying staff privileges evaluation)** Thorough analysis of maintenance-related occurrences strongly supports that deviation from the standard operating procedures and 'attitude' are the major contributing factors to accidents and incidents. How would you reinforce the 'assessment' process? To which extent should the assessment become competency-based? How to measure 'attitude'?	**(5)** The agency must carefully balance the duties and responsibilities of the individual vis-à-vis the duties and responsibilities of the AMO. The individual's work within a quality control/assurance and/or safety management system must be assessed to determine the "risk" of the potentially harmful "attitude". In other words, if the human factor consideration is that persons are more likely to deviate from standard operating procedures, checks and balance must be in place at the more sophisticated AMO, while recurrent training on potential harmful "attitudes" for the individuals working on non-complex aircraft must be considered. Therefore, even if you cannot measure the "attitude" you can remind individuals that breaking rules (deviating from the standard) is subject to fines and certificate action. All regulations and licences should be competency based, i.e., performance-driven, not prescriptive.
6	**Basic knowledge requirements** Current Part-66 only requires the basic modules examination (i.e. training is not mandatory). — Should training be mandatory? — Do you think there is a conflict of interest within Part-147 organisations (they provide both training and examination)? How would you address this conflict in the absence of a European Central Question Bank (ECQB)? *Note:* For further details about fraud cases, please refer to EASA Opinion No 07/2015[13].	**(6)** – Very little training should be mandatory; all knowledge should be tested regularly to determine competency in the area or field. – There is only conflict for the part 147 schools that are trying to "game" the system; if the part 147 is training persons adequately, the testing should prove that fact. As far as we know all schools are expected to "test" the student after the training is provided. No rule guarantees that someone won't break it—if EASA is concerned with non-compliance, it must enhance its oversight role by controlling the requirements and using part 145/AMOs as a double-check on the part 147' ability to impart the baseline knowledge and testing A common test bank has the additional advantage of superior ongoing quality control. Analysis done for the purpose of refining QDB quality is far more accurate with thousands of samples rather than dozens. It also insures that the agency doing the analysis has the appropriate skills and resources to do this job well. A common and expert testing organization can do this. A small school struggling to maintain minimum enrolment cannot. It is unfair to determine an applicant's fate based on anything less than the highest quality testing experience. A further benefit of a common QDB is ease of entry by a new Part 147 into the training market. The development and management of unique and high quality QDBs is a tremendously difficult and expensive task and a significant barrier to a new school seeking approval and beginning operation. Given a standard test bank, a part 147 can use its limited resources for instructor training and/or improved shop facilities rather than the otherwise problematic management of individualized question banks.

Question number	Issue	Comments and proposals
7	**Training Need Analysis (TNA)** *Note:* Currently the TNA is only required for the theoretical element of the Type Rating Training (TRT). Should the TNA also cover the practical elements of the TRT or is the material contained in Part-66, Appendix III, subparagraph 3.2, sufficient? Should the TNA also cover the basic knowledge training course?	**(7)** EASA should move towards competency based training and testing in every element of parts 66 and 147. An individual should be able to "test out" (knowledge and practical testing) of any subject or element. The EASA or its member states need the power to review (and approve) the training and testing for any individual or company program.
8	**On-the-Job Training (OJT)** What are the implementation issues encountered with the OJT, which is required for the first Type Rating endorsement? When approved by the competent authority of the maintenance organisation (through the MOE) where it takes place, should the OJT programme be automatically recognised by any other Member State without any further check?	**(8)** Not all OJT is created equal; again, the standard must be set by EASA based upon competency in areas shown to directly impact aviation safety. A person should be able to learn those elements through "formalized" training with a part 147 OR OJT OR any combination that enables the person to pass the knowledge and practical tests required to obtain or maintain the licence. Yes, if the authority is deemed competent then there should be no reason why other member states would not accept its approval.
9	**Difference training** Are the current provisions for TRT difference training adequate? *Note:* See Part-66, Appendix III, subparagraph 1(c).	**(9)** Any training coupled with a practical test to ensure the knowledge was properly imparted and requisite skill obtained for the operational environment is adequate.
10	**English language proficiency** 66.A.20(b)4 mentions that an Aircraft Maintenance Licence (AML) holder may not exercise his/her privileges unless he/she is able to read, write and communicate to an understandable level in the language(s) in which the technical documentation and procedures necessary to support the issue of the certificate of release to service are written. In the future, would it make sense to introduce a minimum level of English as a prerequisite before issuing the AML? If yes, then: — What should be the minimum criteria or syllabus to be met? — Who should conduct the examination?	**(10)** Given that the majority of maintenance manuals are written in English, aircraft moving around the world are expected to have maintenance manuals (and records) written in English, and ICAO Annex 1 standards require that certain airman certificates have English language proficiency endorsements in order for those airmen to act as required crew of an aircraft internationally, a minimum level of English should be required. Standards should be based on ICAO document 9835, which provides implementation procedures for English language proficiency requirements. The person conducting the written and/or practical test should be responsible for determining that minimum English aptitude standards are met. Providing exams in English, and requiring that the applicant responses be in English, would adequately evaluate aptitude.

Question number	Issue	Comments and proposals
	Section 2.4 Specific questions on Part-147 AIRCRAFT MAINTENANCE LICENCE (AML) TYPE RATING TRAINING (TRT)	
1	**Safety Management System (SMS)** To which extent would the introduction of SMS requirements into Part-147 be beneficial?	(1) This is a bit hard to understand the risk of bad training on aviation safety; licenced individuals will be working under a part 145 that is required to assess the knowledge and capabilities of each person performing work. While not all part 145 SMS are created equal, all require an assessment of risk of "bad maintenance" – we are not sure how applying SMS to a school will enhance aviation safety.
2	**Activity and performance report** Would you support that a Part-147 organisation regularly communicates or makes available an 'activity and performance' report to its competent authority (CA)? *Note: Such report could help the CA to perform its oversight activities as part of the collection and sharing of data in a performance-based environment. By including examination-related indicators, it would also enhance the robustness of 'examinations' — see next questions.*	(2) Depending on whether the information collected will be useful in assessing compliance to part 147 or merely reflect the school's "activity and performance" by numbers of students and passage rates and the like. What data and how it is collected and analyzed is extremely important to understanding the results. So, our initial reaction is that the collection of data without parameters or assessing the employers' reaction to the knowledge and capabilities of the students will not be useful.
3	**Examination** The current system shows a conflict of interest between teachers and examiners. How to improve the robustness of the Part-147 examinations?	(3) Written exams should be judged differently than practical tests; all schools conduct their own exams in one way or another; by ensuring that the part 145 (employer) or the competent authority applies the practical tests in most cases, the conflict is eliminated.
3bis	**Examination** The current system shows a conflict of interest between teachers and examiners. Should the examination privileges as per 147.A.145(a)3 be revoked or limited? To which extent should the use of a European Central Question Bank (ECQB) be considered (mandatory, recommended or optional)?	As stated above, if the competent authority or part 145 organization provides the practical test then the conflict would be eliminated. A centralized bank of questions would create a welcome standard amongst training organizations, though mandatory utilization should only be considered if there is concern about the "conflict" creating a less qualified applicant.
	Should examinations be conducted by approved examination centres independent from the Part-147 organisations as it is currently the case for flight crew licensing[14]?	We do not believe this is a necessary step provided there is a double-check of competency by the part 145/AMO. However, if this is necessary to ensure all countries accept the licences issued, then the extra expense may be warranted.

Question number	Issue	Comments and proposals
4	**Examination** How to make the examination process more robust? How would you address the significant number of fraud cases that have been recently reported to EASA? *Note:* For further details, please refer to the EASA Opinion No 07/2015[15].	**(4)** If the competent authority or part 145 organization provides the practical test, applicants would have to demonstrate that they have the minimum knowledge and skill required. The practice would require schools to ensure their graduates have the requisite skill and knowledge, no matter what their testing practices. We did not find a "significant number" of fraud cases nor did the cases at issue reflect a lack of competency by the individuals "graduated" from the part 147 institutions. The EASA can double check competency through the hiring and qualification elements of the part 145/AMO organization.
5	**Structure of the rules** Would you agree with a full restructuration of Part-147 rules close to the horizontal approach? (See structure of Commission Regulation (EU) No 965/2012 or of EASA Opinion No. 06/2016[16] for Part-CAMO.)	**(5)** We see no need for a full rewrite or review of part 147; we do see a need to ensure recognition of the multiple layers of safety established by EASA (and other agencies). The need to ensure licenced individuals are competent to perform assigned tasks begins with a part 147 imparting basic knowledge, that will be tested, enhanced and refined in a part 145 environment.
6	**Simpler rules** In order to be able to respond to a fast-evolving world, would it be better to have the minimum in the implementing rules (IRs) (i.e. hard law — objective-based requirements providing main criteria) and the maximum in the acceptable means of compliance (AMC)/guidance material (GM) (i.e. soft law, which allows some flexibility)?	**(6)** Competency-, or outcomes-based regulation would provide an efficient, flexible approach to education that emphasizes accountability and would allow students to progress through programs based on an ability to demonstrate specified competencies. The model would require that EASA set the minimum skill and knowledge standard, and provide its competent authorities and the industry the freedom to ensure applicants meet that standard. The model would also decrease oversight responsibility but enhance the ability to quickly deal with non-compliance by a part 147 or part 145/AMOs. It is unclear to the commenters how setting a maximum standard in the guidance materials would increase safety.
7	**Development of the course material** What type of support do you expect from the Type Certificate Holder (TCH) for the design, update and approval of a Type Rating Training (TRT) course?	**(7)** Availability of technical data for educational purposes.
8	**Practical training** What are the main concerns expressed during the practical portion of the TRT course?	**(8)** Practical training equipment differs greatly between schools. The "concern" should not raise issue so long as the training equipment meets the requirements of the regulation and properly tests the requisite skills.
	How to ensure that trainees receive sufficient hands-on training before the assessment and the endorsement of the type rating in the license?	Competence based assessments through examinations or part 145 hiring and retention practices can be used to assess "sufficiency" of hands-on training elements.

Question number	Issue	Comments and proposals
9	**Instructors, examiners, assessors** Would you recommend qualification criteria for instructors, examiners and assessors? If yes, what are your suggestions for each category of staff? Does it make sense to introduce the concept of 'subject matter experts' for the development of the courses?	(9) Competency-based criteria in every aspect of the parts 66/147 rules is strongly encouraged. Instructors, examiners and assessors must be thoroughly familiar with the subjects, topics and issues being taught, examined or assessed. Obviously, subject matter expertise will be developed over time; however, competency of the individuals being taught, examined and assessed must always be central to the development of any concepts. Additionally, subjects, matters and expertise needs to be adapted to the technical advancements as well as the basic concepts inherent to aviation safety.

Part 3 Any other comments

There is a wide disparity regarding the difficulty of various modules. Particularly in modules 11, 12, and 13, the content required to be learned for examinations is enormous. The modules should be split into further sections with multiple testing points.

Regarding essay exams, they are too subjective to be of dependable value in assessing a student's grasp of basic knowledge. Scoring may be too dependent on the whim of the evaluator or the nuance of language and dialect. While an assessment of a student's ability to communicate is critical, it can be determined through an interactive oral and practical evaluation.