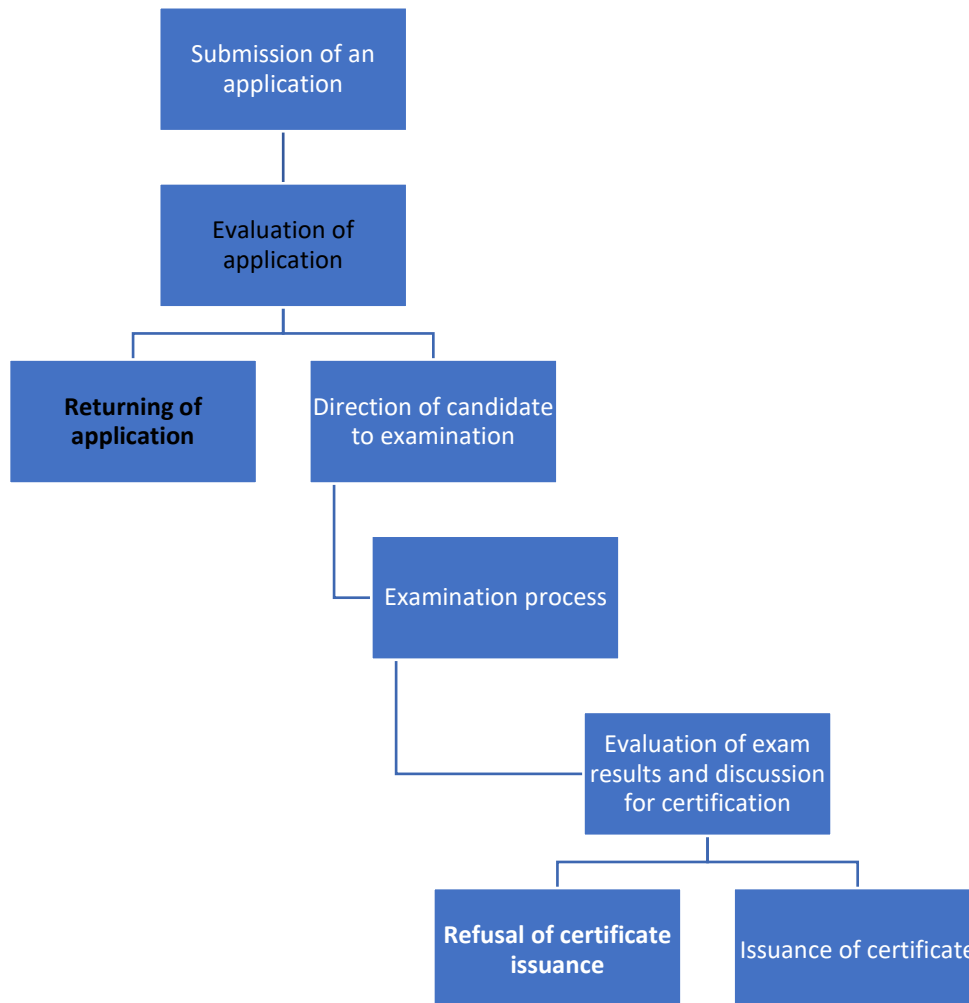

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Certification of personnel in the NOVA EXPERT PCB is carried out using the certification scheme, which contains the following procedures:

1. Submission of an application to NOVA EXPERT PCB for certification with the required documents attached;
2. Assessment of compliance of the application with the requirements of NOVA EXPERT PCB and decision-making on it;
3. The direction of the candidate to the exam (practical and theoretical);
4. Examination at an approved examination center, notified by the NOVA EXPERT PCB;
5. Analysis of the exam results by the NOVA EXPERT PCB certification committee and issuance of a certificate of competency to the candidate;
6. Continuous monitoring of the certificate holder's compliance with the requirements for certification.



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The candidate on certification schemes Level 3 in methods ET, MT, PT, RT, UT, VT, shall comply with following regulations:

Table 1 - NDT Methods and abbreviated terms used in NOVA EXPERT

NDT method	Abbreviated terms
Eddy current testing	ET
Magnetic testing	MT
Penetrant testing	PT
Radiographic testing	RT
Ultrasonic testing	UT
Visual testing	VT

The candidate shall fulfil the minimum requirements of vision and training prior to the qualification examination and shall fulfil the minimum requirements for industrial experience prior to certification according the following requirements:

1. The candidate shall provide documentary evidence of satisfactory vision in accordance with the following requirements:
 - a. near vision acuity shall permit reading a minimum of Jaeger number 1 or Times Roman N 4.5 or equivalent letters (having a height of 1,6 mm) at distance not less than 30 cm with one or both eyes, either corrected or uncorrected;
 - b. color vision shall be sufficient that the candidate can distinguish and differentiate contrast between the colors or shades of grey used in the NDT method concerned;
 - c. Further, after certification, on an annual basis, a sharpness check should be carried out.
 - d. The certification body may consider replacing the requirements in a) by compliance with an appropriate alternative.
 - e. Subsequent to certification, the tests of near visual acuity shall be carried out annually and verified.


2. Theoretical training

The candidate shall satisfactorily complete a course of theoretical and practical training in NOVA EXPERT PCB approved training organization.

Table 2 - Minimum Training Requirements

NDT method	Amount hr., Level 3 (Total amount hr.)
ET	48
MT	32
PT	24
*RT	40
UT	40
VT	24

NOTE* For RT, training hours do not include radiation safety training.

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NDT method	Amount hr., Level 3 (Total amount hr.)
	<ul style="list-style-type: none"> Part of training are based on candidates with basic mathematical skills and prior knowledge of materials and processes. In the absence of the above listed skills and knowledge, the NOVA EXPERT will ask the candidate to undergo additional training. Hours of study include both practical and theoretical courses. Duration of training includes both practical and theoretical training. Duration of training may be reduced to 50% when certification is requested in the limited scheme. For candidates who have graduated in a relevant subject from technical college or university, or have completed at least two years of relevant engineering or science study at college or university, the total required number of training hours may be reduced by up to 50 % of total required training hours by a NOVA EXPERT. For candidates seeking certification in more than one method (e.g. MT, PT), or for those already certified and seeking certification in another method, when the training syllabus concerned duplicates certain aspects (e.g. product technology), the total number of training hours for these methods (e.g. PT, MT, VT) may be reduced in line with the training syllabus; <p>NOTE: It is appropriate for the subject to be relevant to the NDT method (chemistry, mathematics or physics) and/or to the product or industry sector (chemistry, metallurgy, engineering, etc.).</p>

For **Level 3**, in addition to the minimum training given in Table 2, the preparation for qualification can be completed in different ways dependent on the scientific and technical background of the candidate, including attendance at other training courses, conferences or seminars, studying books, periodicals and other specialized printed or electronic materials.

The minimum duration of training for which the candidate is taken for certification on level 3, preparation for qualification can be carried out in accordance with Table 2 on the application of the NDT method.

3. Industrial NDT experience

The minimum duration of experience to be gained in the sector where the candidate is seeking certification shall be as given in Table 3, with the possible reductions. When the candidate is seeking certification in more than one method, the total time of experience shall be the sum of the experience in each method.

In the event that a part of the experience is sought following successful examination, the results of the examination shall remain valid for **five years** or for the total experience time required for the methods concerned, whichever is the greater.

Industrial experience in NDT can be obtained either before or after passing a qualifying exam. Documentation of experience data is confirmed by the employer and submitted to the NOVA EXPERT by authorized examination organization. In case if after a successful pass of exam, the experience is required, then the results of examination should remain valid for up to five years.


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Table 3 - Minimum industrial experience

NDT method	Work experience in month (cumulative amount)
	Level 3
ET, RT, UT	18
MT, PT, VT	12
Work experience is based on a nominal 40 h/week or the legal week of work. When an individual works in excess of 40 h/week , he may be credited with experience based on the total hours, but he shall be required to produce evidence of this experience.	

Level 3 responsibilities require knowledge beyond the technical scope of any specific NDT method. This broad knowledge may be acquired through a variety of combinations of education, training and experience. Table 3 details minimum experience for candidates who have successfully completed a reductions or at least **2 years** of engineering or science study at an accredited college or university. If this is not the case, the duration has to be multiplied by a factor of 2.

For Level 3 certification, the work experience shall consist of time as a Level 2. If the individual is being qualified directly from Level 1 to Level 3, with no time at Level 2, the experience shall consist of the sum of the times required for Level 2 and Level 3. No reduction in the period of experience shall be allowed.


3.1. Experience duration reductions

The total reduction shall not exceed **50 %** of the experience duration. Any reduction shall be accepted by NOVA EXPERT PCB. When considering possible reduction in the duration of experience, the following elements are taken into consideration:

- The quality of the acquired work experience may be variable, and skills may be assimilated faster in an environment where work experience is focused and has a high degree of relevance to the certification sought;
- When gaining experience simultaneously in two or more surface NDT methods, i.e. MT, PT and VT, the experience gained in the application of one NDT method may be complementary to the experience gained in one or more other surface methods;
- Experience in one sector of an NDT method for which certification is already held may be complementary to the experience in a different sector of the same NDT method;
- The level and quality of education possessed by the candidate should also be considered. This is particularly the case for the Level 3 candidate, but it can also be applicable for other levels. Graduating from a technical college or university or going for at least two years of study engineering science in a college or university, can be a justification for reducing of work experience.

Credit for work experience may be gained simultaneously in two or more of the NDT methods covered by this procedure, with the decrease in the overall required experience as follows:

- two testing methods: reduction of total required time by **25 %**;
- three testing methods: reduction of total required time by **33 %**;

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— four or more testing methods: reduction of total required time by **50 %**.

In all cases, the candidate is required to have at least half of the required experience for each NDT method and sector combinations for which certification is requested, and it will never be less than one month in duration.

The duration of the experience may be reduced by up to **50%**, but shall not be less than one month, when the required certification is limited in use, for example, thickness measurement or automated testing.

Up to **50%** of the practical experience time may be achieved by an appropriate practical course, the duration of which may be weighted by a maximum factor of **five (5)**. The course focuses on practical solutions of frequently occurring testing problems and will include an important element of testing known defective samples. The course programme is to be approved by the NOVA EXPERT.

4. Qualification examination

The qualification examination includes this NDT method, as applied in one industrial sector or to one or more product sectors. NOVA EXPERT PCB determines and publishes the maximum amount of time allowed for candidates to complete each exam, which is based on the number and difficulty of the questions.

4.1. Examination content and grading

All candidates for Level 3 certification in any NDT method shall have successfully completed (with a grade of $\geq 70\%$) the practical examination for Level 2 in the relevant sector and method, except for the drafting of NDT instructions for Level 1.


A candidate who is Level 2 in the same NDT method and product sector or who has successfully passed a Level 2 practical examination for the NDT method in an industrial sector, as defined in para 8.6 EN ISO 9712. Is exempt from passing again the Level 2 practical examination. This exemption is only valid for the product sectors covered by the industrial sector concerned and, in any other circumstances, the relevant sector is the sector in which the candidate seeks Level 3 certification.

4.1.1. Basic examination shall assess the candidate's knowledge of the basic subjects using at least the number of multiple-choice questions shown in Table 4. Examination questions shall be selected in an unpredictable way from the current collection of questions approved by the NOVA EXPERT PCB at the time of the examination.

Estimation of the basic examination on the basis of the main method is carried out separately. In order to be eligible for certification, an applicant must pass both the basic examination and the examination based on the main method.

The basic examination includes only questions selected in a random basis from a given set of basic examination questions valid at the date of examination from the NOVA EXPERT PCB or approved training organization. The candidate shall be required, as a minimum, to give answers to the number of multiple-choice questions shown in Table 4.

The basic examination should be passed as first and remain valid, provided that the first main method examination is passed within **5 years** after passing the basic examination. A candidate holding a valid Level 3 certificate is exempt from the need to retake the basic examination.

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In order to achieve success in basic examination, the candidate must score at least **70%** in each of the three parts (A; B; C)

Table 4 - Minimum required number of basic examination questions

Part	Subject	Number of questions
A	Technical knowledge in materials science and process technology.	25
B	Knowledge of the qualification and certification system based on EN ISO 9712 requirements. This may be an open book examination.	10
C	General knowledge of at least four methods as required for Level 2 and chosen by the candidate from the methods given in Clause 1. These four methods shall include at least one volumetric method (UT or RT).	15 for each test method (total 60)


4.1.2. Main method examination shall assess the candidate's knowledge of the main method subjects using the minimum required number of multiple-choice questions shown in Table 5. Examination questions shall be selected in an unpredictable way from the current collection of questions approved by the certification body at the time of the examination.

Exam on the basis of the main method, includes only questions selected in a random basis from the current set of NOVA EXPERT PCB and the approved examination center questions based on the main method. The candidate is required to at least provide answers to a certain number of questions shown in Table 5. Candidates shall not be permitted to bring into the examination area personal items, unless specifically authorized to do so by the examiner. All candidates for Level 3 certification in any NDT method shall have successfully completed (with a grade of $\geq 70\%$) the practical examination for Level 2 in the relevant sector and method, except for the drafting of NDT instructions for Level 1. A candidate who is Level 2 in the same NDT method and product sector or who has successfully passed a Level 2 practical examination for the NDT method in an industrial sector, is exempt from passing again the Level 2 practical examination. This exemption is only valid for the product sectors covered by the industrial sector concerned and, in any other circumstances, the relevant sector is the sector in which the candidate seeks Level 3 certification.

In order to achieve success in main method examination, the candidate must score at least **70%** in each of the three parts (D; E; F)

Table 5 - Minimum required number of main method examination questions

Part	Subject	Number of questions
D	Level 3 knowledge relating to the test method applied.	30
E	Application of the NDT method in the sector concerned, including the applicable codes, standards, specifications and procedures. This may be an open book examination in relation to codes, standards, specifications and procedures.	20

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F	<p>Drafting of one or more NDT procedures in the relevant sector. The applicable codes, standards, specifications and other procedures shall be available to the candidate.</p> <p>For a candidate who has already drafted an NDT procedure in a successfully passed Level 3 examination, the certification body may replace the drafting of a procedure with the critical analysis of an existing NDT procedure covering the relevant method and sector and containing errors and/or omissions.</p>	—
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4.2. Grading of qualification examinations

The grading of the basic and main method examinations is conducted separately. To be eligible for certification, a candidate shall pass both the basic and main method examinations.

For the three parts A, B, and C (Table 4) of the basic examination and parts D and E (Table 6) of the main method. the following requirements apply:

NOVA EXPERT PCB e-assessment systems that automatically score candidate responses against stored data and grade the completed written examination according to prepared algorithms are used.

4.3. Conduct of examinations

All examinations are conducted in NOVA EXPERT PCB approved examination centers, which compliance with this certification scheme has been continuously monitored by NOVA EXPERT PCB. The list of approved examination centers can be found on NOVA EXPERT PCB webpage.


Upon arriving in examination center, candidate shall have on hands his possession valid proof of identification and an official notification of the successfully passed training program in the Approved Training Organization, which shall be shown to the examiner or invigilator upon request.

Any candidate who, during the course of the examination, will not abide by the examination rules or who perpetrates, or is an accessory to, fraudulent conduct will be excluded from all further qualification examinations for a period of **at least one year**.

Examination questions are validated by the NOVA EXPERT PCB Commission of Certification Scheme:

- When offline e-assessment examination used for theoretical exam, system generated randomly selected questions are distributed by examiner to candidate, and after completion answers uploaded to the system by examiner for system automatic grading based on para 4.1.
- When online E-assessment systems that are validate and approved by NOVA EXPERT PCB, selects randomly selected questions which are presented to a candidate on a computer and the grading is done by system automatically based on para 4.1.

Written (whether e-assessment or offline) and practical qualification examinations shall be observed by an examiner.

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An examiner shall not be permitted to examine any candidate:

- That was trained by examiner for the examination within a period of two years when training activities were concluded;
- Who is working (permanently or temporarily) in the same facility as the examiner.

For a practical examination candidate may use his own equipment when it is coordinated and approved with examination centers.

Table 6 — Guidance on the percentile weighting for the Level 3 NDT procedure examination (Part F)

Item	Subject	Weight factor maximum (%)
1.	Part 1 — General: (including the function and verification of the setting of the apparatus).	
	a) scope (field of application, product);	2
	b) document control;	4
	c) normative references and complementary information.	2
	Sub-total:	8
2.	Part 2 — NDT personnel	2
3.	Part 3 — Materials and equipment:	
	a) main NDT equipment (including defining calibration status and pre-test serviceability checks);	10
	b) ancillary equipment (reference and calibration blocks, consumables, measuring equipment, viewing aids, etc.).	10
	Sub-total:	20
4.	Part 4 — Test piece:	
	a) physical condition and surface preparation (temperature, access, removal of protective coatings roughness, etc.);	1
	b) description of area or volume to be tested, including reference datum;	1
	c) discontinuities sought.	3
	Sub-total:	5
5.	Part 5 — Performance of the test:	
	a) NDT method(s) and technique(s) to be used;	10
	b) setting up the apparatus;	10
	c) conducting the test (including reference to NDT instructions);	10
	d) characterization of discontinuities.	10
Sub-total:	40	
6.	Part 6 — Acceptance criteria	7
7.	Part 7 — Posttest procedure:	

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Item	Subject	Weight factor maximum (%)
	a) disposition of non-conforming product (labelling, segregation);	2
	b) restoration of protective coatings (where required).	1
	Sub-total:	40
8.	Part 8 — Production of the test report	5
9.	Part 9 — Overall presentation	10
	Grand total	100

4.4. Re-examination

4.4.1. A candidate failing for reasons of unethical behavior (e.g. does not abide by the examination rules, perpetrates, or is an accessory to, fraudulent conduct)(requirement from en iso 9712 para is excluded from all further qualification examinations for a period of at least one year and shall wait at least **12 months** before reapplying on examination.

4.4.2. A candidate who fails to obtain a satisfactory grade required for certification may be re-examined twice in any the failed part(s), provided that the re-examination will take place not sooner than **30 days** after the previous exam and no later than five years after the initial exam.

NOVA EXPERT PCB has full freedom of action regarding the resolution of an earlier re-examination if additional/ further training acceptable to the NOVA EXPERT PCB is satisfactorily completed.

Note: Examination portions in this context refers to basic examination, Parts A, B, and C (Table 4); for the Level 3 main-method examination, Parts D, E, and F (Table 5).

4.4.3 A candidate who failed to pass the second re-exam may apply and pass the exam in accordance with this procedure established for new candidates.


4.4.4 Examination exemptions are applied for individual changing sectors or adding another sector for the same NDT method. Such candidates are exempt from the need to retake the basic examination and the Level 3-part D of the main method examination according the Table 5.

5. Validity of certificate

5.1. The maximum period of validity of the certificate is five years from the date when certificate was issued and all of the requirements for certification (training, experience, satisfactory vision test, success in examination) are fulfilled.

5.2. Certification becomes invalid:

- a) at the discretion of the NOVA EXPERT, e.g. after reviewing evidence of behavior incompatible with the certification procedures or failure to abide by a code of ethics;
- b) if the individual becomes physically incapable of performing his duties based upon failure of the visual acuity examination taken annually under the responsibility of his employer;

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- c) if a significant interruption (e.g. absence or change of activity) takes place in the method for which the individual is certified;
- d) if the individual fails recertification, until the individual meets the requirements for recertification or initial certification.

5.3. Revalidation

The certification body shall define the conditions for revalidation in the case of 5.2, a) and b). For revalidation of the certification after a significant interruption, the individual shall pass a recertification examination. The certification is revalidated for a new period of validity of five years from the date of the revalidation.

6. Certificate Renewal

Certificate revalidation without examination can be done at any time up to **five years** after success in an initial, supplementary or recertification examination.

Prior to the completion of the first period of validity and every 10 years thereafter, certification may be renewed by the certification body for a new period of five years on production of:

- a) documentary evidence of a satisfactory visual acuity examination taken within the preceding 12 months;
- b) verifiable documentary evidence of continued satisfactory work activity without significant interruption in the method and sector for which certificate renewal is sought, if continued work activity is not achieved, the recertification procedure shall be applied.

It is the responsibility of the certificate holder to initiate the procedure required for renewal. The renewal files shall be presented within six months before the date of expiration of the certification. As an exception, and based upon decision of the NOVA EXPERT PCB, files presented within 12 months after the date of expiration may be considered.

Over this period, no exception is admitted and the candidate shall be permitted to attempt a recertification examination


7. Recertification

7.1. Prior to the completion of each second period of validity (**every 10 years**), the certified individual may be recertified by NOVA EXPERT PCB for a new period of **five years** or less, provided the individual meets the criterion for renewal and meets the applicable conditions.

7.2. It is the responsibility of certificate holders to initiate the procedures required to obtain recertification. If the recertification is applied for more than 12 months after expiry of the period of validity, a complete examination (general, specific, and practical) a main method examination for Level 3 shall again be passed successfully.

7.3. Level 3 certificate holders seeking recertification shall provide evidence of continued qualification confirmed by:

- a) Compliance with the requirements of Level 2 for the practical exam, as well as the requirements of Level 3 for the written exam. The individual shall successfully complete an examination that includes a **minimum of 20 questions** on the application of the test method in the sector(s) concerned which demonstrates an understanding of current NDT techniques, standards, codes

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or specifications, and applied technology and, at the option of the NOVA EXPERT PCB, five additional questions on the requirements of the certification scheme.

- b) Comply with the requirements for a structured credit system, as given in Structured credit system for Level 3 recertification.

7.4. The individual may decide between the examination or credit system for recertification. If the credit system is chosen and requires submission of employer's documents or access to an employer's premises, the individual shall provide to the certification body a written statement of approval from the employer. In both cases, the individual shall either provide appropriate documented evidence, acceptable by NOVA EXPERT PCB, of his continued practical competence in the method or pass a Level 2 practical examination, except for the drafting of NDT instructions.

7.5. If the individual will fail to achieve a grade of at least **70 %** in the recertification examination, a maximum of **two retests** of the recertification examination will be allowed. The time period within tests are taken shall be **12 months**. In the event of failure in the **two allowable retests**, the certificate will not be revalidated and, to regain certification for that sector and method, but will be require to achieve success in the appropriate main examination method.

7.6. A candidate who applies for and does not meet the requirements of the **Credit system for Level 3**, recertification shall be proceeded, according the article 7.5. In the event of failure at the first attempt at recertification by examination, only **1 retest** of the recertification examination shall be allowed within **12 months** of the date of application for recertification via the structured credit system.

7.7 Credit system for Level 3 recertification

Candidate gains the credit for participation during the five years prior to recertification, in the various NDT activities shown in Table 7.


Limits are placed on the maximum number of points which can be gained in each year, and in any activity over the five years, to ensure an even spread of activities. To be eligible for recertification:

- **≥ 70 points** shall be gathered during the five years validity of the certificate;
- a maximum of **25 points** per year are accepted.

In addition to the recertification application, the candidate shall submit evidence of satisfying the criteria of Table 7 as follows:

- agenda and list of attendees for the meetings under items 1 to 4;
- a brief description of research and development under item 5;
- references of technical or scientific publications authored under item 5;
- a summary of training delivered under item 6;
- for each certificate, evidence of work activity per year under item 7.


Table 7 — Structured credit system for Level 3 recertification

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Item	Activity	Points accorded for each item or function	Annual max points per item	Max points per 5-year period per item
1	Membership of an NDT society, attendance at seminars, symposia, conferences and/or courses covering NDT and related sciences and technologies	1	3	8^a
2.1	Attendance at international and national standardization committees	1	3	8^a
2.2	Convenorship of standardization committees	1	3	8^{ab}
3.1	Attendance at sessions of other NDT committees	1	3	8^a
3.2	Convenorship of sessions of other NDT committees	1	3	8^{ab}
4.1	Attendance at sessions of NDT related working groups	1	5	15^a
4.2	Convenorship of NDT related working groups	1	5	15^{ab}
5.1	NDT related technical/ scientific contributions or publications	3	6	20^{cd}
5.2	NDT related research work published	3	6	15^{cd}
5.3	NDT research activity	3	6	15^{cd}
6	NDT technical instructor (per 2 h) and/or NDT examiner (per examination)	10	10	30^d
7	Professional activity	-	-	-
7.1	within a NDT facility, NDT training center or NDT examination facility or for Engineering of NDT (for each full year)	10	10	40^d
7.2	Dealing with disputes referring to clients	1	5	15^d
7.3	Development of NDT applications	1	5	15^d
<p>a. points for items 1 to 4: 20.</p> <p>b. Points to be given for both convenorship and attendance.</p> <p>c. If there is more than one author, the lead author shall define points for the other authors.</p> <p>d. Maximum points for each of items 5 and 6: 30, and 7: 50.</p>				

8. The introduction of new methods or sectors of non-destructive testing/ Transition period

8.1. For a new certification system, or when a new NDT method or new sector is applied to an existing certification system, NOVA EXPERT PCB temporarily assigns appropriately qualified personnel, such as examiners, for a period not exceeding **five years**, in order to conduct, supervising and grading the qualification examinations. At the same time, NOVA EXPERT PCB does not use the **five-year** implementation period as a means for certifying candidates who do not meet all the requirements for qualification and certification of this Procedure.

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8.2. Duly qualified personnel shall:

- a) have the knowledge of the principles of NDT and the specific knowledge in relation to the sector;
- b) have industrial experience of the application of the NDT method;
- c) have the ability to conduct qualification examinations;
- d) be able to interpret the questionnaire and results of qualification examinations.

8.3 Within two years of the date of appointment, these examiners shall have gained certification by satisfying the requirements for recertification as described in para 7.3

9. Sectors

A.1 General provisions

When creating a sector, the NOVA EXPERT PCB uses the following lists of sectors in A.2 and A.3. This does not preclude the development of additional sectors to satisfy national needs.

A.2 Product sectors

These include

- a) castings (**c**) (ferrous and nonferrous materials);
- b) forgings (**f**) (all types of forgings: ferrous and non-ferrous materials);
- c) welds (**w**) (all types of welds, including soldering, for ferrous and non-ferrous materials);
- d) tubes and pipes (**t**) (seamless, welded, ferrous and non-ferrous materials, including flat products for the manufacturing of welded pipes);
- e) wrought products (**wp**) except forgings (e.g. plates, bar, rods);
- f) composite materials (**p**).

A.3 Industrial sectors

Sectors combining several product sectors including all or some products or defined materials (e.g. ferrous and non-ferrous metals or non-metals like ceramics, plastics, and composites):

- 1 - manufacturing;
- 2 - pre- and in-service testing which includes manufacturing;
- 3 - railway maintenance;
- 4 - aerospace.

Certification in the industrial sector may be available for all levels of qualification in all methods of non-destructive testing or may be limited to specific methods or levels of qualification. The scope of certification should be defined in the certificate.

QMS Protocols

No.	Document/Records title	Placement	Responsible	Storage period
1.	Database of all certified individuals	NOVA EXPERT Server	Managing Director	Maintained updated
2.	Individual file(s)	NOVA EXPERT Server	Managing Director	10 years after certification expiring period
		Hard copies in certification center	Examination center, authorized signatory person	

Note: All hard copies of Individual file(s) according this procedure are stored within Examination center according the mutual agreement with NOVA EXPERT PCB, and in case of necessity (e.g. internal or external audit), files shall be issued to NOVA EXPERT PCB for evaluation.