COMITE SECTORIEL AEROSPATIAL DE CERTIFICATION - COSAC

Agents de Contrôle Non Destructif

Approuvé par la CONFEDERATION FRANCAISE POUR LES ESSAIS NON DESTRUCTIFS

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TERMS AND CONDITIONS FOR AWARDING

COFREND/COSAC CERTIFICATES

IN THE AEROSPACE SECTOR

CCA PP 94 001

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ADDRESSEES: ADDRESSEES: CAD [ ] RAQ [X] CDC [X] SECTOR-BASED COMMITTEES [ ] EXAMINATION CENTRES [X] OTHERS [X] Companies using COSAC

Rev.	Development of wording	Writer Signature	Checked Signature	Approved Signature	Date of approval	Applicable Date
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Progress chart - continued

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Rev.	Development of wording	Writer Signature	Checked Signature	Approved Signature	Date of approval	Applicable Date
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0 – SCOPE

This procedure is established in accordance with the requirements of the identical standards, European **prEN 4179: 2008** and American **NAS 410: 2008** standards relating to the certification on non-destructive testing agents operating for the aeronautic and aerospace industry.

Acting as:

- Comité National Aérospatial des CND (National Aerospace NDT Board - NANDTB), independent from any employer, such as is defined in the standards **prEN 4179: 2008** and **NAS 410: 2008.**

- Operational organisation authorised by the **CO**nfédération **FR**ançaise pour les **E**ssais **N**on **D**estructifs (**COFREND**) (French Confederation for Non-Destructive Testing) according to CDC PG 03 013.

The **CO**mité **S**ectoriel **A**érospatial de **C**ertification (**COSAC**) is responsible for the application of this document in France, and by extension for the non-destructive testing agents who are members of foreign companies linked by specific contracts with French manufacturers, maintenance shops and users of aeronautical and aerospace equipment.

The organisation and functioning of the **CO**mité **S**ectoriel **A**érospatial de **C**ertification (**COSAC)** are described in procedure CCA PP 94 002 and comply with the requirements specified in the quality assurance manual of the **CO**nfédération **FR**ançaise pour les **E**ssais **N**on **D**estructifs (**COFREND**), thus complying with Standard EN ISO/CEI 17024.

In comparison with the Standards **prEN 4179: 2008** and **NAS 410: 2008**, this procedure does not cover the following notion:

- level 1, ‘limited’, level defined in the standards above, but not managed by **COSAC**. This does not exclude the possibility of an employer calling upon a **COSAC** Level 3 from his/her company, or external, either addressing **COSAC** or not, in order to qualify ‘limited’ Level 1 agents in his/her company. If this possibility is accepted by the employer it will be indicated in the internal application procedure by referring to the prEN 4179: 2008.

1 – GENERAL POINTS

1.1. Object

This procedure specifies the way in which COSAC, in compliance with EN ISO/CEI 17024, applies the requirements of Standard prEN 4179: 2008 for the qualification and certification of personnel carrying out non-destructive testing operations (NDT) in aerospace industries involved in manufacturing new equipment, services, maintenance and overhaul.
The qualification and certification process consists of the following stages:

- qualification by COSAC
- certification by COFREND (in accordance with EN ISO/CEI 17024)
- validation of this document by the employer, which serves to authorise operation and as 'certification in accordance with prEN 4179'

Later in this document, unless otherwise indicated, the word 'certification' is used in connection with EN ISO/CEI 17024 and the term EN4179 is used as generic of the current version (prEN or EN).

1.2 Field of application

This procedure applies to personnel using NDT methods to test and/or accept materials, products, components, assemblies, or sub-assemblies. It also applies to those individuals directly responsible for the technical adequacy of the NDT methods used, as well as to personnel who write NDT procedures and/or work instructions.

Personnel certified to the previous revisions of procedure CCAPP94001 do not need re-certification to comply with the requirements of this document until their current certification expires.

1.3 Non-destructive testing methods

1.3.1 Common methods

This procedure contains detailed requirements for the applicable training, experience, and examination for the following common NDT methods

Eddy Current	ET
Magnetic Particle	MT
Liquid Penetrant	PT
Radiography	RT
Ultrasonics	UT
Leak Testing	LT
Shearography	ST
Thermography	IRT

1.3.2 Other methods

If needed, and justified by **COFREND**, **COSAC** can implement a non-destructive testing method not listed in this document. **COSAC** must then:

- Consequently modify its procedures to show the new testing method
- Use general examination question banks validated by COFREND for Levels 1, 2 and 3
- Create and validate specific examination question banks for Levels 1, 2 and 3
- Create and check the object of a practical exam and fair copies
- Create the scoring templates,
- Write the Training outlines
- Confirm approval of the examination centres for this new method.
- Appoint experts responsible for administering the new qualifications as well as examiners. The number of these nominations must be limited to the strict necessity.

These individuals, mandated by **COSAC** are chosen for:

- Their general knowledge of the methods of non-destructive testing and the area of application.
- Their industrial experience in the proposed method
- Their ability to conduct and mark the examinations.

The duration of a mandate for appointed examiners is limited to 5 years.

2 – REFERENCE MATERIAL

EN 4179: 2008 - Aerospace series- Qualification and approval of personnel for non-destructive testing

EN ISO/CEI 17024 General requirements for certification organisations carrying out certification of personnel.

EN 473 Non-destructive testing - Qualification and certification of NDT personnel - General principles

NAS 410 Certification and Qualification of Non-destructive Test Personnel

ISO 9712 Non-destructive testing – Qualification and certification of personnel

CAD MQ 94 000 Quality Assurance Manual of **COFREND** certification.

CDC PG 03 013 Conditions for awarding **COFREND** certificates in the aerospace sector

CCA PP 94 002 Organisation and functioning procedure of Comité Sectoriel Aérospatial de Certification. (**COSAC**)

CCAPP 94 003 Approval and monitoring procedure of the operation of the examination and certification centres.

CCA PP 04 014 Terms and conditions for approving external training centres in the aerospace sector.

3 – DEFINITIONS

3.1 EXAMINATION CENTRE: Centre approved by **COSAC**, where qualification examinations take place.

3.2 OUTSIDE TRAINING CENTRE: Body offering training services for different companies.

3.3 CERTIFICATION: Procedure used to demonstrate an NDT inspector's qualification for a method, level and technique, and leading to the award of a certification document in accordance with EN ISO/CEI 17024.

3.4 OPERATING APPROVAL: authorisation given by the employer by validating the document mentioned in 3.3, attesting to the agent's competency and serving as certification in accordance with PrEN 4179. 4179.
In addition to the qualification, competency includes specific knowledge of the work, skill and physical proficiency for the particular task.

3.5 DOCUMENTED: The condition of being in written or electronic form.

3.6 DUTIES: The area, among the following list, in which the personnel carry out the activity regarding qualification or certification:

- Elaboration (casting, foundry, iron and steel industry, …)
- Transformation (forging, rolling, …)
- Manufacturing (machining, starting up, assembling, welding, heat treatment, surface treatment, coatings, composite, …)
- Maintenance, repair and overhaul (MRO)

3.7 PRIME CONTRACTOR: An organization having overall responsibility for design, control, and delivery of a system, component, or product.

3.8 TEST SAMPLE: Part or representation containing one or more known and documented discontinuities, defects (natural or artificial) or configurations, and used during the practical examination to demonstrate the candidate's proficiency at using a particular method. The test samples may be actual parts, items produced for the examination or, if necessary, representations of parts such as radiographic films.

3.9 WRITTEN: Retrievable electronic or hard copy.

3.10 EMPLOYER: Organisation employing (or contracting the services of) one or more persons performing NDT operations.
Those persons performing NDT operations and who are self-employed are included in this definition.

3.11 EVALUATION: A review, following interpretation of the indications noted during an NDT inspection, to determine whether they meet specified acceptance criteria or to determine its significance

3.12 EXAMINATION: Formal, controlled and documented testing conducted in accordance with this procedure to verify the candidate's visual proficiency, knowledge and skill in the relevant NDT method.

3.13 CLOSED BOOK EXAMINATION: Examination without access to reference material

3.14 OPEN BOOK EXAMINATION: Examination with access to reference material supplied during the examination.

3.15 GENERAL EXAMINATION: A written examination addressing the basic principles and theory of the applicable NDT method.

3.16 PRACTICAL EXAMINATION: The examination used to demonstrate an individual's ability to conduct the NDT method that will be performed for the employer. Questions and answers need not be written, but a checklist must be used and observations and results must be documented.

3.17 SPECIFIC EXAMINATION: The written examination to determine an individual's understanding of operating procedures, codes, standards, product technology, test techniques, equipment and specifications for a given method as used by the employer.

3.18 EXAMINER: COSAC Level 3 agent designated by COSAC to set examinations, apart from verification of visual proficiency. COSAC Level 3 agents who prepare specific practical examination questions or topics, as well as their answer sheets, are also considered as examiners.

3.19 EXPERIENCE: Effective performance of tasks with an NDT method carried out in the work environment which result in the acquisition of knowledge and skill. The experience may include on-the-job training (see 6.2) but not formal training.

3.20 INSTRUCTOR: Individual providing training for NDT personnel.

3.21 ON-THE-JOB TRAINING: Training in the work environment in learning instrumentation set-up, equipment operation, recognition of indications, and interpretation under the appropriate technical guidance.

3.22 FORMAL TRAINING: An organized and documented program of activities designed to impart the knowledge and skills necessary to be qualified to this standard. This training may be a mixture of classroom and practical work in a training centre. Self-training is excluded.

3.23 INDICATION: The response or evidence of a condition resulting from an NDT inspection that requires interpretation to determine its significance.

3.24 WORK INSTRUCTIONS: A procedure detailing the NDT technique and testing parameters used for the inspection of a specific component, group of parts (e.g. “aluminium extrusions” or “aluminium brackets”), or assembly. Work instructions are drawn up in accordance with procedures (see § 3.29)

3.25 INTERPRETATION: The determination of whether indications are relevant or non-relevant. Relevant indications must be subject to evaluation.

3.26 METHOD: One of the disciplines of non-destructive inspection or testing (e.g. X Radiology) within which different techniques exist (see § 3.33).

3.27 RESPONSIBLE LEVEL 3 : COSAC Level 3 designated by the employer, with the responsibility and authority to act on its behalf and ensure that the requirements of EN4179/NAS410 are complied with to the extent that they affect the employer.

3.28 DIRECT OBSERVATION: The observation is direct if the observer is capable of coming immediately to assist the trainee and remains at a distance to enable uninterrupted direct contact with him (without visual or verbal assistance).

3.29 PROCEDURE: Written instruction providing the general rules to be observed when performing a specific process. The procedures are used to draw up work instructions (see § 3.24).

3.30 WRITTEN PRACTICE: Employer's procedure that describes the rules for managing the qualification and EN 4179 certification of NDT personnel (see 4.1).

3.31 QUALIFICATION: The skill, training, knowledge, experience and visual acuity required for personnel to properly perform to a particular Level.

3.32 SUB-CONTRACTOR: An organization responsible to the prime contractor for the manufacture or maintenance of aerospace products. For the purposes of this standard, this includes suppliers and processors.

3.33 TECHNIQUE: A category within a method. The list of techniques is given in Table 1 below.

TABLE 1

Methods	Techniques TT: All techniques
Eddy current (ET)	M - Measures (thickness, conductivity, screening material, …)
	DD -Detection of defect (HF, BF, …)
Magnetic Particle (MT)	FB - Fixed bench
	MB - Mobile bench
Liquid Penetrant (PT)	Penetrant Testing
Radiography (RT)	RG - Direct (silver support film) and indirect (re-inscribable films) radiography
	RS -Radioscopy (all detectors except for the silver support film and re-inscribable films)
Ultrasonic (UT)	DI -Detection of defect by immersion
	DC -Detection of defect by contact
	M - Measurements (thickness, physical dimensions, etc)
Leak testing (LT)	Tracer gas
	Pressure variation
Shearography (ST)	Shearography
Thermography (IRT)	Thermography

4 – GENERAL REQUIREMENTS

4.1. Written practice

The employer must draw up and keep updated an internal application procedure for the qualification and EN 4179 certification of its NDT personnel. The current procedure shall be sent to **COSAC**.

The written practice shall be in accordance with the requirements of this standard. It must specify in detail the procedural elements required to implement qualification and certification according to CCA PP 94 001 and should indicate directly or by reference:

- the levels of qualification and certification according to CCA PP 94001 used by the employer
- the duties and responsibilities of the persons involved
- the training and experience requirements
- the requirements concerning EN 4179 certification and re-certification
- the requirements concerning registrations and their archiving
- the requirements concerning the expiry, suspension, withdrawal and reinstatement of certifications

This standard may be referenced in whole or in part to meet this requirement provided the sub-paragraphs of 4.1 are satisfied. The internal application procedure must be approved by the Responsible Level 3. The written practice and applicable **COSAC** procedures shall be available for review by the facility's customer(s) and regulatory agencies.

4.1.1 NDT techniques

The internal application procedure must include identification of the methods and techniques used in the company (as per § 3.33)

4.1.2 Areas of activity

The internal application procedure must include the employer's areas of activity (as per § 3.6).

4.1.3 Conducting examinations

This procedure should indicate which methods and techniques are entrusted to **COSAC** for administration and examination.

4.1.4 Administrative files and documents

The internal application procedure must include a description of the details recorded for each certified person (see 8.2.8) as well as the identification of those individuals responsible for the administration and updating of the employer's EN 4179 certification programme.
The employer must sign the commitment to the code of practice in accordance with the specimen in Appendix 3 of this document.

4.2. Methods

For the common methods listed in paragraph 1.3, the requirements for training, experience and examination are detailed in clauses 6 and 7 of this standard. Specific techniques in each method are listed in Table 1.

4.3. Compliance and responsibilities

The employer is solely responsible for EN 4179 certification.

COSAC (as NANDTB) issues a COFREND/COSAC certification document in accordance with EN ISO/CEI 17024.

The employer must next accept responsibility by validating this certification document, which then serves to authorize operation and as EN 4179 certification.

4.4. Responsible Level 3

The employer must designate in writing a Responsible Level 3 to act on its behalf for subjects relating to the process of NDT qualification and certification. The Responsible Level 3 must be certified COSAC Level 3 in at least one NDT method and have a thorough knowledge of the written instructions, codes, specifications and standards used by the employer. He must also have a thorough knowledge of the materials, components and technologies of the NDT products, methods and techniques used by the employer. If it is necessary to ensure coverage of all the NDT methods used by the employer, he may delegate in writing to one or more COSAC Level 3.

The employer is authorised to designate as Responsible Level 3 a person from outside its organisation. In this case, the Responsible Level 3 is not empowered to sign the authorizations to operate (see § 3.4).

The Responsible Level 3 is designated by the employer to ensure that the requirements of this procedure are fulfilled and to act on behalf of the employer for tasks designated in this procedure as coming under the responsibility of the Level 3 Supervisor. These tasks are specified in the various paragraphs of this document. Appendix 1 provides a summary.

5 – QUALIFICATION AND CERTIFICATION LEVELS

There are 3 certification levels (Level 1, Level 2, Level 3).

5.1 Trainee

A trainee is an individual who is participating in a training programme for an NDT method and who is in the process of acquiring a qualification to obtain certification at Level 1 or at Level 2 with direct access (i.e. by-passing Level 1).

Apprentices:

- must be documented by name as trainees and must actively participate in a training programme for a given NDT method during a limited and specific period of time
- must acquire experience under the direct observation of inspectors of Level 2 or 3 in the same method or, after approval by the Responsible Level 3, under the direct observation of a Level 1 inspector or an instructor
- not make accept or reject decisions
- must not perform tasks involving product testing or evaluation, including or leading to acceptance or rejection without being under direct observation
- must not perform any other NDT function without being under direct observation
- must be subject to eye tests in accordance with §7-1-1

5.2 Level 1

For the method for which he is certified, a Level 1 individual must:

- be able to follow work instructions
- have the skills and knowledge to process parts, document the results and carry out equipment adjustments in accordance with approved work instructions
- have the skills and knowledge to carry out any necessary preparation of parts before or after inspection in accordance with approved work instructions
- have the skills and knowledge to carry out systems performance evaluations in accordance with the applicable standard
- receive guidance or supervision from Level 2 or 3 inspectors in this method when necessary
- have the skills to carry out the interpretation and evaluation of a specific product or type of product for acceptance or rejection, following an approved instruction

5.3 Level 2

For the method for which he is certified, a Level 2 individual must:

- be thoroughly familiar with the scope and limitations of the technique/method in which they are certified
- be familiar with the codes, standards, and other contractual documents that control the method as utilized by the employer
- have the skills and knowledge to set up and standardize equipment, conduct tests, interpret, and evaluate for acceptance or rejection, and document
- have the skills and knowledge to carry out systems performance evaluations in accordance with the applicable standard
- be capable of providing the necessary guidance and/or supervision to trainees and Level 1 personnel
- have a basic knowledge of product manufacturing and inspection technology and testing of the products
- Be capable of composing a written instruction from a general approved procedure. Finally this instruction will be approved by a **COSAC** Level 3 in the method
- if necessary and if specified in the internal application procedure, have a basic knowledge of aircraft and vehicle maintenance, repair and overhaul

5.4 Level 3

For the method for which he is certified, a Level 3 individual must:

- have the skills and knowledge to interpret codes, standards, and other contractual documents that control the method(s) as utilized by the employer
- be capable of assuming technical responsibility for the NDT facility and staff
- be capable of selecting the method and technique for a specific inspection
- be capable of preparing and verifying the adequacy of work procedures and instructions
- approve NDT procedures and NDT work instructions after verifying their technical adequacy
- have general knowledge of other NDT methods and product technologies used by the employer, and associated defects
- if necessary and if specified in the internal application procedure, have a basic knowledge of aircraft and vehicle maintenance, repair and overhaul
- be capable of informing the Research Section of the limits of methods and techniques, of geometrics of the parts which are the best adapted to an efficient industrial inspection
- be capable of providing or directing training, examination (according to the requirements of the following paragraph), and certification of personnel in the method in which they are certified
- conduct NDT for the acceptance of parts only if a proficiency in performing these tasks is demonstrated (see 7.1.4.3b and 8.6b)
- conduct examinations for Levels 1 and 2 in accordance with this procedure only if he has already obtained Level 2 or inspection option certification
- when required by written practice, be capable of auditing outside agencies to ensure the requirements of the written procedure are met

6 – TRAINING AND EXPERIENCE

6.1. Training

6.1.1 General requirements

Candidates for certification at Level 1, Level 2 or Level 3 must have undertaken sufficient formal training to have become proficient in the principles and practices of the applicable testing methods and techniques, and to be capable of performing the tasks specified in paragraph 5.
Formal training is to be conducted prior to, or in parallel with, on-the-job training.
All NDT training shall be documented.

The minimum training hours for Levels 1 and 2 are given in Table II for the specified NDT methods. If a method is added, table II will be completed by specifying the number of hours based on the requirements for a method of a similar complexity.

TABLE II: MINIMUM FORMAL TRAINING HOURS, LEVELS 1 AND 2

Method	Level 1	Level 2 (with Level 1 experience)	Level 2 Direct access (no Level I certification)
PT	16	16	32
MT	16	16	32
ET	40	40	80
RT	40	40	80
UT	40	40	80
IRT	20	40	60
ST	20	40	60
LT	40	80	120

Formal training (see § 3.22) of a general, specific or practical nature shall always be supplemented by documented practical on-the-job training (see § 3.21) with the employer.

6.1.2 Training outlines

Formal training must be conducted in accordance with the minimum recommendations of the **COFREND** and **COSAC** course outlines.

As a minimum, the training must cover:
- basic theory,
- testing principles, choice of methods, inspection parameters and adaptation of choices made according to the characteristics of materials and parts,
- products, materials and defects (composition and characteristics),
- adjustment and use of equipment,
- importance of a perfect knowledge of the process,
- importance of using appropriate inspection sequences and parameters,
- safety,
- various applicable techniques with their advantages and disadvantages,
- capabilities and limitations of each method and each technique,
- operating procedures, standards and general specifications,
- interpretation and evaluation of indications, documentation of test results.

Course programmes must include a list of references on which the course materials are based and indicate the amount of time to be spent on each subject.

6.1.3 Retraining

For personnel not certified within 12 months of their training, refresher training must be provided.
Training carried out more than 12 months previously must be validated by the Responsible Level 3.
At a minimum, refresher training shall cover products, equipment set-up, operation and standardization, specific operating procedures, applicable techniques, interpretation and evaluation of NDT results, safety, standards and applicable specifications. The depth of instruction for each subject shall be determined by the Responsible Level 3.
The number of retraining hours should be ≥ 25% of the minimum requirement from Table II.

6.1.4 Respective responsibilities of **COSAC** and the employer

COFREND and **COSAC** specify minimum Training outlines.

If an employer considers that the training provided (apart from on-the-job training) is insufficient to meet its own requirements, it must supplement it or have it supplemented.

6.1.4.1 COSAC authorized training centre:
In accordance with CCA PP 04014, COSAC ensures compliance with the requirements of EN 4179
The training centres should provide COSAC with a list containing the names of speakers, their qualification and possibly the certifications they hold. This list is at the disposal of the Official NDT organization of employers which can, on request, disclose it to their prime contractors, their auditors and to the Regulatory Agencies.

6.1.4.2 Other cases:
If the employer carries out the training internally or in a non-COSAC authorized external training centre, the Responsible Level 3 must:
-verify compliance with the requirements of EN 4179
-verify compliance with the Training outlines specified by COSAC

6.2 Professional experience

Candidates for certification at Level 1, 2 or 3 shall have sufficient practical experience to assure that they are capable of performing the duties of the level for which certification is sought. The minimum experience requirements for Levels 1 and 2 are provided in Table III, while the requirements for Level 3 are in Table IV.
If a method is added, table II will be completed by specifying the number of hours based on the requirements for a method of a similar complexity.
On-the-job training can only be counted as hours of experience if the following two conditions are met:
- training provided by COSAC-certified personnel
- internal application procedure authorizing this practice

6.2.1 Previous Experience

The experience acquired by a candidate with a previous employer must be documented and approved by the Responsible Level 3.

6.2.2 Equivalent experience

For personnel qualified under other programmes, the previous experience must be documented and its equivalence to the requirements of Tables III or IV will be determined by the Responsible Level 3.

TABLE III: MINIMUM EXPERIENCE REQUIREMENTS FOR LEVELS 1 & 2

Hours of Experience			
Method	**Level 1 (Apprentice experience)**	**Level 2 (Level 1 experience)**	**Level 2 Direct access (no Level I certification)**
PT	130	270	400
MT	130	400	530
ET	400	1200	1600
RT	400	1200	1600
UT	400	1200	1600
IRT	200	600	800
LT	400	1200	1600
ST	200	600	800

NB:

- Experience in multiple methods may be accumulated simultaneously.
- Experience in the method must be at least half this time when the remaining time is consecrated to activities in other NDT methods.

TABLE IV: MINIMUM EXPERIENCE REQUIREMENTS FOR LEVEL 3

College or University	**Level 2 or Equivalent Experience**
Baccalaureate, Bac level or less (in France) none (US)	4 years
DUT or BTS levels in a scientific or industrial sector (in France)	2 years
Engineering or science study at a technical school, college or university (US)	2 years
Degree, Engineering diploma in a scientific or industrial sector (in France)	1 year
Science or engineering undergraduate degree (US)	3-4 years

7 – EXAMINATIONS

The candidature file is established in conformity with **CCA PP 94004** by the applicant and is stamped by his/her employer. This shall reach **COSAC** by the scheduled deadline. In particular it shall have the following documents attached:

-written practice of the employer or reference to it if already in **COSAC**'s possession
-medical certificate less than a year old
-commitment to the code of practice

Admissibility of the application is determined by COSAC based on its study of the file.

The official language is French. However, foreign candidates have the opportunity to take the examination in English. The use of any other language is subject to acceptance by **COSAC**.

7.1. Object and content

Examinations for the candidate's technical qualifications shall consist of: a general examination, a specific examination and a practical examination for each method for which the candidate must be certified. An eye test must also be taken prior to the candidate's first certification and periodically thereafter.

Additional requirements can be envisaged during the drafting of the adherent company's internal application procedure, in particular to satisfy current legal conditions (Example: ionising radiation). Candidates for the Radiography method must have undertaken radioprotection training;

The questions used for the general examination are available from **COFREND**. The questions used for specific examinations and the checklist for the practical examination shall be available at **COSAC** for review by the employer's customers upon written request. The subjects shall be made available to the candidates only during administration of the examinations.

7.1.1 Vision

For trainees, Level 1, Level 2 and Level 3 personnel, the eye test must provide proof that the candidate's near vision and colour perception meet the requirements of Table V. Near vision eye tests shall be administered annually and colour perception tests shall be administered at least every 5 years as well as prior to the beginning of a trainee's activity. These tests shall be administered by trained personnel designated by a Responsible Level 3 or by qualified medical personnel. Any limitation in colour perception shall be evaluated by a Responsible Level 3 prior to certification and before the beginning of a trainee's activity, and the result of the evaluation shall be recorded in writing.

The organization of this examination, relative to the intermediary years between certification and re-certification is under the responsibility of the employer. The certificates corresponding to each year are included in the certification file in the employer's possession.

In the case of a modification of medical fitness of a certified agent, stated by a medical certificate imposing sight correction, the employer has the responsibility to:

- update the certification document and request modification of the individual's card. When sight correction is necessary in order to pass the visual acuity test, this correction must be maintained throughout all testing operations.

TABLE IV: VISION REQUIREMENTS

	Examination Requirements
Near Vision	Snellen 20/25 at a minimum distance of 41cm +2 -3cm with at least one eye, with or without correction, or Parinaud 1.5 at a minimum distance of 37cm +3 -2cm with at least one eye, with or without correction*
Colour Perception	Personnel shall be capable of adequately distinguishing and differentiating colours used in the process involved Recommended tests: Complete Ishihara or Farnsworth D15

*Another test may be used if the Responsible Level 3 has determined its equivalence.

7.1.2 General

The general examination for all levels shall be a closed book examination, without a programmable calculator, which consists of questions that cover the cross-section of the applicable method at the appropriate level. For Level 3 it also includes questions about two other methods.

2 minutes will be accorded per question.

Level 1 or 2: 40 questions established by **COFREND** shall be used for the general examination
Individuals with COFREND certification may make use of their grades in the general examination.

Level 3: The general examination will contain 85 questions distributed according to Table VI:

TABLE VI

mp - Technological knowledge relating to the materials, products and procedures used in the aerospace industry.	25 questions set by **COSAC** (including 8 taken from the COFREND BCC QE 94-001 bank)
g - General Level 3 knowledge in the principal method applied for.	30 questions set by **COFREND**
g 2.1 and 2.2 - General Level 2 knowledge for 2 other methods, among those mentioned in § 1.3, used by the employer.	30 questions (2 x 15) set by **COFREND**

Candidates with a Level 3 certification in the course of validation, either **EN 473** or **ISO 9712** issued by **COFREND** or an equivalent organization recognized by **COFREND** can make use of the grades that they have achieved in basic examination (B) and in the general examination (C1) so that they only have to sit the "Technological knowledge relating to the materials, products and procedures used in the aerospace industry" (A1) and "Certification procedures" (A2). The exams C and D are described in the standards **ISO 9712** and **EN 473.**

Individuals with COSAC N3 certification in accordance with a revision prior to revision 5 of this procedure may make use of the grades obtained at A1, B and/or C examinations instead of Nmp and/or Ng 2.1 and Ng 2.2.
Individuals with **COSAC** N3 certification since revision 5 of this procedure may keep the Nmp, Ng or Ng 2.1 or Ng 2.2 grades obtained.
Individuals with currently valid Level 2 certification may use the grades obtained at the general examination for Ng 2.1 or Ng 2.2.

7.1.3 Specific

The specific examination for all levels shall be a closed book examination and shall cover the requirements and use of the specifications, codes, equipment and operating procedures. This concerns all the techniques for the method as defined in 3.33 and all the activity areas of 3.6 which are compatible with the method.
30 questions , relevant to the level of qualification required, and set by **COSAC** shall be used for the specific examination at Levels 1, 2, and 3, except for Leak Testing (LT), where the number of questions is 40.

For Levels 1 and 2, the questionnaire includes 10 questions on knowledge of materials and products used in the industry.
Documents such as specifications, tables, formulae, etc may be provided.
For Level 3 there is an additional test of knowledge of the qualification and certification system in accordance with this procedure (proc), including 10 questions set by COSAC, for which the procedure will be provided.
Individuals already certified in accordance with revision 6 may use the Nproc grade they obtained.

2 minutes will be accorded per question.

7.1.4 Practical

The practical examination shall consist of a demonstration of proficiency in performing tasks that are typical of those to be accomplished in the performance of the candidate's duties (area of activity and level of qualification).
The exam concerns all the techniques for the method except where the employer explicitly asks to leave out one or several techniques.

A technique that is not initially chosen may be subsequently required, in accordance with § 7.2.4.

Written checklists covering the topics detailed in the following sub-paragraphs shall be developed by the exam centres to assure adequate coverage and to assist in the administration and grading of the examination. Examination centres must also specify and document the way in which the results obtained by the candidate are to be documented (for example, the part's cartography, drawings, sketches, written descriptions, etc).

7.1.4.1 Level 1

The candidate shall demonstrate proficiency of using a written instruction: he/she must check the operation of equipment and accessories, and proceed to the inspection of at least one test sample for each technique for which certification is sought.

At least two test samples shall be processed, inspected, interpreted and evaluated for each method. Test samples shall meet the definition in paragraph 3.8 and be of different configuration. The defects' location and severity must not be apparent to the candidate.
The results shall be documented by the candidate. Only one test sample sanctioned as "acceptable" may be given to the candidate. The subjects of the exams are classed by the areas of activity. At least one test sample should be representative of the area in which the candidate mainly carries out his/her activities.

The checklist used by the approved examination centre shall include proficiency in:
- the use and standardization of equipment and materials
- strict adherence to the written instruction
- interpretation and evaluation of indications
- documentation of results

The duration of the examination shall be defined by the recommended centre.

7.1.4.2 Level 2

The candidate shall demonstrate proficiency by inspecting at least one test sample for each technique for which certification is sought.

At least two test samples shall be processed, inspected, interpreted and evaluated for each method. Test samples must meet the definition in paragraph 3.8 and be of different configuration. The defects, location and severity must not be apparent to the candidate.
The results shall be documented by the candidate. Only one test sample sanctioned as "acceptable" may be given to the candidate. The subjects of the exams are classed by the areas of activity. At least one test sample should be representative of the area in which the candidate mainly carries out his/her activities.

The candidate will draw up, from the general procedure, a work instruction for a Level 1 to be used on a part in his/her principal area of activity

The checklist used by the approved examination centre shall include proficiency in:
- the use and standardization of equipment and materials
- strict adherence to procedures,
- the accuracy of interpretation and evaluations of indications
- documentation of results
- developing precise and complete written instructions

The duration of the examination shall be defined by the recommended centre.

7.1.4.3 Level 3

a) The candidate shall demonstrate proficiency by preparing a NDT procedure appropriate to the requirements of the employers in the aeronautical and aerospace industry. He/She must justify his/her choices (means, methods, techniques, etc) and draw up a work instruction for use by a Level 1 agent in the method for which certification is sought.

The checklist shall address the technical and industrial adequacy of the procedure and work instruction prepared by the candidate.

The results of the practical examination shall be documented.

The duration of the practical test is 5 hours.

b) When the candidate's duties include the inspection and/or sanction of products, and when the candidate does not hold currently valid **COSAC** N2 certification at the time of the Level 3 examination, proficiency in performing such tasks shall be demonstrated by taking an N2 practical examination in all techniques in accordance with the requirements of paragraph 7.1.4.2. (excluding the drawing up of a written instruction). The results of the practical examination shall be documented and lead to reaching inspection option Level 3 whose validity is aligned to Level 3 certification. Level 2 certification or the additional examination are not required for those Level 3 individuals who draw up or approve procedures or work instructions, even if these are used to accept or reject products.

7.2. Organization of examination

During the examination the candidate must have valid proof of identity in his/her possession and an official notification to attend the examination. These should be presented upon the request of the examiner or a supervisor.

A work plan is communicated to the candidates in order to assure the smooth progress of the tests.

All the questions are multiple choice or true/false

The level 1 and 2 examinations are carried out by examination centres approved by **COSAC** following the procedure **CCA PP 94 003**. The organization and grading of level 1 and 2 examinations is the responsibility of a **COSAC** Level 3 inspector, acting as an examiner:

- in the method which is the subject of the exam
- having passed an 'Inspection' option Level 2 practical examination,
- appointed by the Head of the approved examination centre which uses his/her services

The examination jury is made up of the Head of technique in the examination centre and the examiner(s) in charge of the candidates.
The administration and grading of Level 3 examinations are the responsibility of **COSAC** who appoints the jury president, invigilators and Level 3 agents or members of the COSAC Council responsible for examination grading.

A Level 3 agent may not be the sole examiner of the candidates for whom he/she assumes hierarchical responsibility or which he/she has personally trained for the examination in question. In no case can an examination be administered by one's self or by a subordinate

Any candidate who, during the examination, does not conform to the rules or commits, or is an accomplice to a fraudulent act, shall be excluded from the following tests. The candidate shall wait at least one year before being able to take any examination.
Any incident, such as the use of non-conforming questionnaires, inspection instructions, materials, parts or products shall be subject to a verbal trial established by the examiner and communicated to the examination jury during final deliberation.

7.2.1 Grading

7.2.1.1 Levels 1 & 2

The "general" and "specific" written examinations are evaluated by comparing the responses of the candidate to the correct version of each question approved by **COFREND** and **COSAC** respectively
Each correct response is worth 1 point and the mark attributed to the test is equal to the sum of the obtained points. For final calculation, the mark of each test is given out of 100.

Grading the practical examination takes the following operations into account:

1) Knowledge of equipment (implementation, functions, checks and regulating)
2) Implementation of the method for which examined:
   Visual examination and preparation of test samples
   Detection and interpretation (position, size and dimensions) of indications
   Evaluation of results according to acceptance criteria
3) Inspection report
4) Reconditioning after inspection (demagnetization, cleaning, protection)

Level 2 Candidates:

5) Metallurgical knowledge of the samples to be inspected
6) Composition of an inspection instruction for a Level 1 agent

The details of points available for each operation is given in the table below:

Table VII – Grading of the practical examination.

	Level 1	**Level 2**
Knowledge of equipment and products	20	10
Preparation - Adjustment – Carrying out the inspection Operations after the inspection Possible oral questions	35	15
Detection, interpretation and evaluation of indications - Report	45	35
Written instruction for a Level 1	0	40

All examination scores shall be of equal weight in determining the average score.

7.2.1.2 Level 3

The grading of each section of the examination shall be carried out separately. A certified agent who is changing industrial sectors retains the benefit of certain grades.
The "general" and "specific" written examinations are evaluated by comparing the responses of the candidate to the correct version of each question approved by **COFREND** and **COSAC** respectively Each correct response is worth 1 point and the mark attributed to the test is equal to the sum of the obtained points.
The practical examination is corrected, by two level 3 examiners, by comparing the candidate's copy to the correct type established by **COSAC**.
Each examination is marked out of 100.
All examination scores shall be of equal weight in determining the average score.

7.2.2 Examination success criteria

To be eligible for certification:

- the candidate shall achieve an average grade of at least 80%
- the candidate shall achieve a minimum grade of 70% on the general, specific and practical examinations
- the Level 1 or 2 candidate shall detect all the discontinuities or conditions (e.g. non-conforming thickness, etc) specified by the authorized examination centre during the practical examination

For the supplementary practical examination for Level 3 individuals whose duties include the testing and/or sanction of products (paragraph 7.1.4.3 b), the minimum grade must be 80% in order to obtain the Inspection option.

7.2.3 Re-examination

Candidates failing any general, specific or practical examination shall receive additional training before attempting re-examination of the failed exam. The additional training shall be documented and shall address those areas found deficient in the candidate's skills or knowledge. The re-examination shall not use the same written tests or test samples that were used in the initial examination. The re-examination test must contain a minimum of 25% new questions.

7.2.3.1 Partial

A candidate who has obtained a grade less than 70/100 in one part of the examination may re-take this section on condition that this re-examination takes place within the 12 months following the failure.

A candidate who has no eliminatory grade, but who does not detect at least one of the discontinuities specified by the examination centre, and who is therefore not eligible for certification, shall retake the practical examination.

A candidate who has failed one of these partial re-examinations can re-take it a second time.
Another failure requires the candidate to apply for and take the complete examination again after a period of 1 month according to the procedure established for the new candidates.

7.2.3.2 Total

A candidate who does not fulfill the criteria of 7.2.2 and 7.3.1 shall apply for and take the complete examination again after a period of 1 month according to the procedure established for the new candidates.

7.2.4 Extension of certification to a new technique

The candidate shall take a practical examination covering the new technique in accordance with § 7.1.4. The candidate shall satisfy the success criteria in accordance with § 7.2.2 with the grades from the last general and specific examinations. If successful, certification is extended to that technique for the remaining period of validity of the current certification (see §8.5).

7.3 Confirmation of results

Level 1 & 2 examinations: at the conclusion of the examination, the results are initialled by the jury. The **examination centre** confirms the qualification of the individuals who have satisfied the conditions of § 7.2.2. The list of qualified agents is sent to the Certification Director at **COFREND**.
Level 3 examination: at the conclusion of the examination, the results are initialled by the jury. **COSAC** confirms the qualification of the individuals who have satisfied the conditions of § 7.2.2. The list of qualified agents is sent to the Certification Director at **COFREND**.

7.4 Recording of results

Level 1 & 2 examinations: at the conclusion of the examination, after deliberation, the results are initialled by the jury. The grades obtained at each part of the examination are summarized on a form initialled by the examination centre's technical supervisor.

Level 3 examination: at the conclusion of the examination and after deliberation by the **COSAC** Board, the grades obtained at each part of the examination are summarized on a form initialled by the President of COSAC.

8 – CERTIFICATION

8.1 General points

Each individual who has been qualified in accordance with the previous paragraphs is eligible for certification. COFREND creates and validates a certification card for use by the qualified individual (issue of EN ISO/CEI 17024 certification). **COSAC** creates and initials the certification document which the employer must sign as operational authorization (EN 4179 certification).

By convention, the certification date is the qualification confirmation date.

The tracking by the various interested parties of the stages of the certification process is provided by the GERICCO computer application (COfrend Certification Internet Management).

8.2 Administration

8.2.1 File

For each inspector an individual file is compiled including:
- a copy of the candidature file, according to paragraph CCA PP 94 004
- the summative record of all grades obtained for each examination
- (possible) changes of employer
- the reasons for withdrawal of certification (if any)

Individual files are constituted and archived by the **COSAC** office after transmission of examination results for Level 1 and 2 agents by the approved examination centres and by the **COFREND** office for level 3 agents.

In the case of a successful examination the **COSAC** office returns the following to the employer:
- the 2nd copy of the candidature file
- the summative record of all grades obtained for each examination
- the certification document (Levels 1 and 2 certificate or Level 3 diploma)
- the inspector's card

In the case of partial failure, the candidature file is retained by the **COSAC** office for 13 months. This file is returned to the approved examination centre upon the inscription of the candidate to the remedial classes (see 7.2.3 – Re-examination).

In the case of complete failure the candidature file is retained by **COSAC** until the inscription to a new examination.

8.2.2 Drawing up cards

After confirmation of qualification by **COSAC** (Levels 1 & 2 inspectors) or by **COFREND** (Level 3 inspectors), **COFREND** draws up for each inspector a certified inspector card which carries the **COFREND** logo and the following notes :

✓ on the front:
- a reference to Standard **EN 4179/NAS 410** (EN4179 is here used as a generic term embracing prEN versions. The relevant references are those of §0)
- surname and forename of the agent
- photo ID
- **COSAC** reference
- card number

✓on the back:
- signature of the card holder
- method, inspection technique(s) (for Level 1 and 2)
- date of first certification and expiration date
- possible mention of Inspection option
- the employer's seal and signature
- possible sight correction
- the signature of **COFREND**'s Certification Management Committee

The employer returns a copy of the signed and stamped card proving EN4179 certification.

8.2.3 Creating the certification document

The certification document is created in duplicate by the **COSAC** office and sent to the employer.

The employer:

- archives one of the copies in the individual file of the inspector concerned
- returns the second copy to the **COSAC** office to be archived in the individual file held by them

The completed certification document shall show:

Levels 1 and 2:

- the signature of the Head of department at the approved examination centre
- the **COSAC** stamp and the signature of its President or one of the appointed members from the **COSAC** office
- **COFREND**'s seal and the signature of the Certification Director
- the employer's stamp, the date and signature of its representative validating EN 4179 certification and authorizing operation
- the expiry date

Level 3:

- the **COSAC** stamp and the signature of its President or one of the appointed members from the **COSAC** office
- **COFREND**'s seal and the signature of the Certification Director
- the employer's stamp, the date and signature of its representative validating EN 4179 certification and authorizing operation
- the expiry date

A specific certification document is created for the "Inspection" option.

The certification document is replaced with each re-certification, the successive documents are retained in the inspector's individual document be the employer and by the **COSAC** office.

8.2.4 Circumstances for withdrawal of cards

In the case of withdrawal or loss of certification, whether this be at the end or during the period of validity, the card must be returned to **COSAC**, to be filed into the inspector's individual file.

8.2.5 Changing employer

The individual file retained by the employer shall be handed over to the inspector upon his/her departure, after the employer has crossed out his signature on the certification documents (certificate or diploma and card). The employer is under the obligation to inform **COSAC** of this change.

8.2.6 Changing employer without changing area of application

The new employer may, after agreement with its responsible Level 3 and by affixing its seal, stamp and the date of its signature on the certification document, revalidate the inspector's certification, with the validity period remaining unchanged.

The new employer is required to inform **COSAC** of this change and shall ask for a new card to be issued.

8.2.7 Fraudulent use of certification

Any complaint relating to a falsification or fraudulent use of a certification card by an inspector or his/her employer, any professional dispute concerning the certification of an inspector in the **aerospace** sector, is investigated by **COSAC** according to the procedure COFREND CDC PG 02 012 .

8.2.8 Archiving

The employer (E) and/or **COSAC** (C) shall maintain certification records for personnel for as long as their certification is in effect. These records must be available for auditing by clients or the authorities. The documents, which are archived at **COSAC** and not at the employer, may be consulted at **COSAC** upon written request. Documents archived by the employer shall be available to the employee on request or if he/she leaves the company for whatever reason.

The records shall include as a minimum for each valid certification:

a	Name of the certified agent.	E	C
b	Level, method, and techniques for which the inspector is certified.	E	C
c	Last written and practical exams.		C
	Results and grades of previous exams.	E	C
d	If Appendix A is used for a Level 3 re-certification, the documentation justifying the points acquired.	E	
	COSAC's summary of valid points.		C
e	Date and expiration of current certification.	E	C
f	A summary of all previous NDT certifications with current employer	E	
g	Training history which identifies the source, type and dates of training, and course hours, including retraining if required (paragraph 6.1.3) and equivalent training as per 6.1.4.	E	C
h	Experience history, including all previous certifications with both current and previous employers, and if need be the experience acquired based on qualification programmes other than those of COSAC (paragraph 6.2.2), sufficient to justify that the experience requirements for certification are satisfied.	E	C
i	The most recent results of the visual acuity and colour perception tests.	E	
j	Level of general training.	E	C
	Diplomas when used to meet qualification requirements.	E	
k	The certification document bearing the name and signature of the employer's representative validating EN 4179 certification and authorizing operation.	E	C

E: Employer
C: COSAC

COSAC's records are held in conditions ensuring confidentiality and protection against damage from fire and water, in accordance with COFREND procedure CDC PG 02-007.

The list of inspectors whose files have been destroyed is kept by the approved examination centre and by **COSAC**.

A list of all certified inspectors, classified by level, method and technique(s), for levels 1, 2 and 3 is kept up to date by **COSAC.**

8.3 Loss of certification

Certification may expire, be suspended, or be revoked.

8.3.1 Expiry

Certification expires when the inspector leaves the aerospace sector for another industrial sector or when the certification's validity period (specified in 8.5 and 8.6) has lapsed and no re-certification has been issued. Certification is considered to expire at the end of the corresponding month in which the certification began.

8.3.2 Suspension

Certification shall be suspended when:

- the inspector changes of employer within the aerospace sector
- the visual acuity examination date is overdue
- the agent does not perform in the method certified for at least 12 consecutive months
- the inspector's performance is found to be deficient by the employer

8.3.3 Withdrawal

Certification shall be revoked when:

- the inspector does not perform in the method certified for at least 24 consecutive months
- the inspector's conduct is found to be unethical or incompetent

The employer shall then inform **COSAC** by sending the cancelled certification card and document.

8.4 Reinstating certifications

Certifications that have been suspended may be reinstated, maintaining the original validity termination date:

- when the cause of the suspension has been corrected and the correction verified by the employer (visual acuity, activity interruption) or by the responsible Level 3 (proficiency)
- by the new employer in the aerospace sector when the inspector is changing company

Certifications that have been revoked may only be reinstated by specific and practical examination equivalent to initial certification.
Certifications that have been withdrawn cannot be reinstated if a contrary decision has been taken in accordance with the above paragraph 8.2.7.

Monitoring of suspensions, withdrawals and expiries shall be carried out by the employer.

8.5 Re-certification of levels 1 and 2

Level 1 and Level 2 personnel shall be re-certified at intervals not to exceed five years. Practical and specific examinations equivalent to those required for initial certification shall be administered for Level 1 and Level 2.
A re-certification examination shall involve all the techniques in the method for which the candidate is certified unless the employer explicitly asks to leave out one or several of these techniques.
The employers are recommended to submit their candidates to refresher training for their knowledge level before taking the examination.

8.6 Re-certification of level 3

Level 3 personnel shall be re-certified at intervals not to exceed five years.

a) Re-certification shall be accomplished in accordance with Annex 2 or by specific re-examination according to 7.1.3 and a practical re-examination according to 7.1.4.3 a.
b) If the candidate's duties include product inspection or evaluation, an additional examination (Level 2 practical examination in accordance with the requirements of § 7.1.4.3 b) is required to renew the "Inspection" option.

8.7 Administration of re-certification

At the expiration, the NDT inspector takes a re-certification examination in the approved examination centre of his/her choice.

A candidature file has to be created for the re-certification examination, conforming to **CCA PP 94004** and be sent to **COSAC**.

Under the system of re-certification through points credits according to Appendix 2, the candidate must gather together the points' supporting evidence and send his file to be examined by two Level 3 members of the **COSAC** Board.

Recording the results, creating the certification document and the card, and archiving the files are identical to the requirements of the original certification.

9. - UNEMPLOYED TESTING INSPECTORS

9.1 Inspector not certified by the previous employer

An NDT inspector without employment, who therefore no longer depends on an employer, may present him/herself at the certification examinations under the conditions laid out below:

The candidate shall provide justification of his/her situation during the registration of his/her candidature file.

The candidate shall answer to the entire training and industrial experience criteria, in the aerospace sector, as anticipated in this standard.

The candidate shall form the candidature file in accordance with the rules of this standard.

In addition to the documents which make up the candidature file, the candidate shall provide the following documents:

- A testimonial from his/her last employer indicating clearly the nature of trained duties as well as the date the candidate left the firm.

In the case where it is impossible to obtain such a testimonial, the candidature file will be examined by **COSAC**.

- A testimonial to honour the truth of the information contained in the candidature file .

The examination centre shall give a practical examination covering the entirety of all possible areas of activity.

The candidate is advised of the results of the examination. In the case of success, the candidate does not receive a certification card. **COSAC** informs him/her of the fact:

- that he/she has successfully completed the examination

- that the certification document may be delivered to a new employer upon the condition that he/she sends to **COSAC**, within 12 months of the date of the examination, a testimonial delivered by the new employer indicating the duty he/she will be carrying out

  Upon the reception of the aforementioned testimonial **COSAC** decides, in view of the new duty to be carried out, whether to award the corresponding certification card which is then delivered to the agent by intermediary of the new employer.

The expiration date of the certification is 5 years after the validation of the examination results by **COSAC** (level 1 & 2) or by **COFREND** (Level 3).

The examination, management expenses and the right to the **COFREND** stamp relating to the certification are payable by the new employer.

Temporary employees:

For COSAC certification, the employer is the one who satisfies the requirements of this procedure, especially for the Responsible level 3 and the internal procedure.
It is the employer who appears on the certification document and on the card, and who gives the operating approval.

9.2 Inspector with a certification in the process of being validated when leaving the previous employer

This clause exclusively concerns the inspectors who have operated in the aerospace sector, where the duration of activity has been no more than 12 consecutive months and who are entering the 5th year following his/her certification or re-certification. In this case, the inspector may profit from the measures indicated in paragraph 9.1 of this standard.

10. CERTIFICATION EXPENSES

Each examination is subject to a fee collected by the examination centres (Level 1 & 2) or by **COSAC** (Level 3).
This fee covers the expenses of organizing the examinations (materials and staff).

For each certification and re-certification, the member companies are asked by AFENDA to participate in the management expenses for the certifications. The sum of these expenses is fixed annually at **AFENDA**'s General Meeting. It takes into account the sum of the fee paid to **COFREND**; the sum of which is fixed annually during the **COFREND** General Meeting.

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APPENDIX 1:

List of tasks to be carried out by the Responsible Level 3

- Approve employer's internal application procedure.
- Ensure compliance with this procedure and the internal application procedure.
- Supervise trainees' tutoring. If need be, approve Level 1 inspectors or instructors responsible for direct observation as part of obtaining the necessary experience.
- Mention in the internal application procedure whether a Level 1 agent is authorized to carry out interpretations and evaluations for the acceptance or rejection of materials, products, components, assemblies or sub-assemblies.
- Ensure that training fulfills the employer's requirements if a COSAC-approved training centre is used.
- Ensure compliance with the requirements of EN 4179 and that training is in accordance with the Training outlines specified by COSAC if it is carried out internally or in a non-COSAC approved centre.
- Approve the on-the-job training syllabus.
- In the event that certification is not obtained within 12 months from the end of training, validate the previous training and specify the re-training syllabus.
- Determine the additional training syllabus.
- Document the experience gained with a previous employer and approve its recognition.
- For personnel qualified via other outlines, document the experience gained and determine its equivalence.
- Train and approve personnel appointed to verify the vision of NDT inspectors if they are not qualified as medical personnel.
- Evaluate the impact of any colour perception limitation.
- Attest to the equivalence of any other eye tests.
- Verify correction of the cause of suspension prior to reinstatement of suspended certifications.

APPENDIX 2:

Credit System for Re-certification of Level 3 NDT Personnel (in accordance with 8.6.a)

A.1 SCOPE

A.1.1 This appendix specifies the requirements for re-certification of the Level 3 NDT personnel without examination in accordance with § 8.6 a. It applies only to those persons holding a valid Level 3 NDT certification at the time of re-certification.

A.2 REQUIREMENTS

A.2.1 Application for re-certification shall be made by the employer to **COSAC** at the earliest 4 months before and at the latest 2 months before the expiration date of the certification

A.2.2 The candidate shall have been employed in a Level 3 function for a minimum of 36 months (at least 12 of which are in the last 24 months) within the previous five years in the method(s) for which re-certification is sought. The number of months is cumulative and does not need to be consecutive months for validation purposes. Candidates shall provide objective evidence (1) that they have kept up to date with current NDT technology in the method(s) for which they are seeking re-certification by obtaining a minimum of 24 points during the five year period of certification, irrespective of the number of certifications (methods) obtained, by engaging in one or more of the activities listed in Table A.1.

(1) The confidential documents not sent may have to be available during audits. In the case of changing employer during the 5 years of validity, the points acquired at the previous employer may only be taken into account if the current employer is in possession of the supporting file.

A.3 DEFINITIONS

A.3.1 Committee or Panel Meetings:

Meetings, conferences, symposia, seminars, trade association meetings, panels, etc. organized or sponsored by a regional, national or international NDT organization or technical society. The meetings above, foreign or international, only qualify if the sponsors are national or international.

A.3.2 Committee Projects:

Specific identifiable official activities of regional or national technical societies, committees or work groups, such as round robins or individual studies, preparation of guidelines, appendices, specifications, recommended practices, procedures, codes or standards, etc. Documentation may include memos or reports, drafts of committee output documents, or official written comments submitted by the candidate on such documents.

Table A.1: Level 3 Awarded Credit Activity.

ACTIVITY	CRITERIA	Point	Max points per 5 years
Authoring or co-authoring technical NDT presentations	Sole Author	8	16
	Co-author (contribution >30%)	4	
	Co-author (contribution <30%)	2	
Authoring, co-authoring, or Custodian for company or industry NDT specifications or standards	Each Standard/Specification	8	16
Attending technical sessions, committee or panel meetings organised by: a) National or international technical NDT societies, associations and institutes b) Inter-company NDT teams comprised of members from several locations	1 day or 1 meeting	1	16
	2 days	2	
	3 or more days	4	
Instructor in charge of NDT training courses designed to prepare students for NDT qualifications or other academic qualifications	8 hours of instruction	4	8
Participating as an intern in technical courses or seminars	For every 8 hours of documented instruction	2	8
Non destructive testing examiner	For each examination session	1	8
NDT related technical and/or scientific publications published either internally or externally	For each published paper	4	16
Documented NDT contributions to company, technical association or industry committee projects	For each documented contribution	4	12
Documented participation in NDT-related studies, developments, or investigations	For each documented contribution **(provide a list)**	4	12
Documented continuous satisfactory performance as a Level 3	Written testament by employer	4	16
Attend equipment or trade show	For each show attended	1	4
Conduct external NDT audits	For each external audit conducted	1	16

APPENDIX 3

Specimen of commitment by employers of non-destructive testing inspectors

RIGHTS TO USE COFREND CERTIFICATION CODE OF PRACTICE

By signing this document, the employers of non-destructive testing inspectors who are candidates for **COFREND** certification undertake to comply with the following regulations:

Conduct towards third parties:

- to have testing operations performed by NDT inspectors who are certified to Standard **EN 4179,** when called for by the product specification or standard;
- not to make abusive use of their inspectors certification, e.g. for advertising purposes;
- not to use their NDT inspectors certification when its validity date has expired.

Obligations towards COFREND:

- to know and apply the current qualification and certification regulations;
- to use NDT inspectors in accordance with their area of activity, method and level of competency;
- to refuse to join in any fraudulent act regarding certification regulations;
- to inform **COFREND** of any conduct that is obviously contrary to ethical behaviour or any serious professional error by an inspector, or any reason to withdraw the operating authorization.

Obligations towards their certified inspectors:

- to provide the necessary means to carry out and interpret the non-destructive testing for which their inspectors are responsible;
- to refrain from exerting any pressure to modify test results;
- to comply, if the need arises, with the code of practice applicable to the personnel assigned to certification;
- on an inspector's departure, it is the employer's responsibility to hand over to him his certification card and certification document after having crossed out its operating authorisation signature and informing **COSAC** of this change.

The employer is aware that in the event of its failure to comply with these regulations, **COFREND** reserves the right to take whatever legal action it deems necessary.

Date	Director's Name and Function	Company stamp and signature