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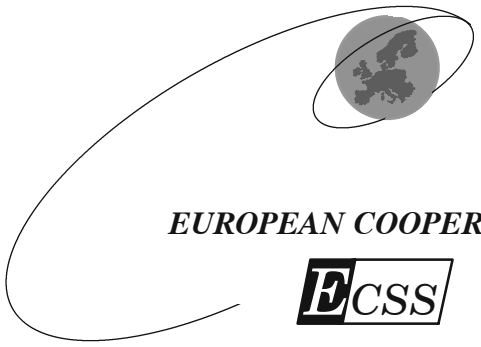


# Space Product Assurance

## Nonconformance control system

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# Foreword

This standard is one of the series of ECSS Standards intended to be applied together for the management, engineering and product assurance in space projects and applications. ECSS is a cooperative effort of the European Space Agency, National Space Agencies and European industry associations for the purpose of developing and maintaining common standards.

Requirements in this standard are defined in terms of what must be accomplished, rather than in terms of how to organise and perform the necessary work. This allows existing organisational structures and methods to be applied where they are effective, and for the structures and methods to evolve as necessary without rewriting the standards.

The formulation of this standard takes into account the existing ISO 9000 family of documents.

This standard has been prepared by the ECSS Working Group Q-20-09, reviewed by the ECSS Technical Panel and approved by the ECSS Steering Board.

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# Contents list

# 1

# General

## 1.1 Scope

This standard defines the control system for nonconformances related to any product, including EEE components nonconformances, software problems and operational nonconformances and anomalies.

This standard applies to all deliverable products and supplies, at all levels, which fail to conform to specification requirements and design baselines.

This standard is applicable throughout:

- procurement, production, qualification, integration and test phases;
- acceptance, delivery and transportation phases,
- launch preparation phase and flight/launch readiness;
- operational validation/qualification phase;
- operational phase;
- refurbishment phase.

This standard defines also requirements for the interfaces with company internal nonconformance reporting and processing.

Engineering Changes are not subject of this standard.

## 1.2 Normative documents

This ECSS standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these apply to this ECSS standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

| | |
|---|---|
| ECSS-P-001 | ECSS glossary of terms |
| ECSS-Q-00 | Space product assurance - Policy and principles |
| ECSS-Q-20 | Space product assurance - Quality assurance |
| ECSS-Q-40 | Space product assurance - Safety |
| ECSS-Q-60 | Space product assurance - EEE components |

| | |
|---|---|
| ECSS-Q-80 | Space product assurance – Software product assurance |
| ECSS-M-40 | Space project management – Configuration management |
| ESA SCC 22800 | EEE Nonconformance Control System |

## 1.3 Definitions and abbreviations

### 1.3.1 Definitions

For the purposes of this standard, the definitions given in ECSS-P-001 Issue A apply. In particular, it should be noted that the following terms have a specific definition for use in ECSS standards.

**Acceptance**

**Alert**

**Anomaly**

**Availability**

**Configuration Management**

**Corrective Action**

**Critical Item**

**Customer**

**Dependability**

**Design**

**Development**

**Deviation**

**Document**

**Inspection**

**Nonconformance**

**Preventive Action**

**Problem**

**Product**

**Product Assurance**

**Quality**

**Quality Assurance**

**Repair**

**Requirement**

**Rework**

**Safety**

**Software problem**

**Supplier**

**Waiver**

### 1.3.2 Abbreviations

The following abbreviations are defined and used within this standard.

| Abbreviation | Meaning |
|---|---|
| **EEE** | Electrical, Electronic, Electromechanical |
| **CIL** | Critical Item List |
| **COTS** | Commercial Off The Shelf |

| | |
|---|---|
| **DJF** | Design Justification File |
| **FMECA** | Failure Mode Effect and Criticality Analysis |
| **NRB** | Nonconformance Review Board (formerly known as Material Review Board or MRB) |
| **NCR** | Nonconformance Report |
| **QA** | Quality Assurance |
| **PA** | Product Assurance |
| **RAMS** | Reliability, Availability, Maintainability, Safety |
| **RFW** | Request for Waiver |
| **SCC** | Space Component Coordination |
| **SPR** | Software Problem Report |

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# 2

# Nonconformance control system - basic requirements

## 2.1 General principles

a. The system shall provide for a disciplined approach to the identification and segregation of nonconforming items, the recording, reporting, review, disposition and analysis of nonconformances, the definition and implementation of corrective and preventive actions.

b. Special attention shall be paid to:
   - corrective actions against root causes, to avoid recurrence for other products;
   - prompt and effective communication between suppliers and customers;
   - the prevention of nonconformance occurrence, from the analysis of nonconformance records and derived lessons learned.

c. The supplier shall document his implementation of the nonconformance control system.

## 2.2 Nonconformance classes

a. Nonconformances shall be classified as major or minor, based on the severity of their consequences, as defined in ECSS-Q-20.
Classification of nonconformances is not based on their consequences on cost and schedule.

b. **Major nonconformances** shall be those which may have an impact on the customer's requirements in the following areas:
   1. safety of people or equipment;
   2. operational, functional or any technical requirements imposed by the business agreement;
   3. reliability, maintainability, availability;
   4. lifetime;
   5. functional or dimensional interchangeability;
   6. interfaces with hardware and/or software regulated by different business agreements

   and in the following cases:

7. changes to or deviations from approved qualification or acceptance test procedures;
8. project specific items which are proposed to be scrapped;
9. for EEE components, in case of:
   (a) lot/batch rejection during manufacturing, screening or testing at the manufacturer's facilities, if the purchaser proposes:
   * to use as-is the rejected lot/batch, or
   * to continue processing, rework or testing, although the lot/batch does not comply with the specified requirements.
   (b) nonconformances detected after delivery from the manufacturer.

c. Minor nonconformances are those which by definition cannot be classified as major.

d. The following EEE discrepancies after delivery from the manufacturer may be classified as Minor:
   * random failures, where no risk for a lot-related reliability or quality problem exists;
   * if the form, fit or function are not affected;
   * minor inconsistencies in the accompanying documentation.

e. **In case of doubt, nonconformances shall be classified as major.**

f. The consequences of several different minor nonconformances on the same item shall be evaluated for proper classification.

## 2.3 Nonconformance Review Boards (NRB)

a. The NRB shall be the sole technical authority for the treatment of nonconformances occurring in the frame of a business agreement.

b. All NRB dispositions and decisions shall be made by consensus by all members.

c. In case of conflict, higher management levels shall be involved.

d. The independence of PA from the project management organisation shall be maintained in accordance with ECSS-Q-00, subclause 3.3.3.

### 2.3.1 Internal NRB

a. The supplier shall nominate and authorise the internal NRB's core members for the business agreement.

b. The responsibilities and authorities of each member shall be documented.

c. The internal NRB shall include, at least, core members from the following areas :
   • Project PA (chairman);
   • Engineering.

d. The chairman shall nominate additional members, or experts, depending on the NCR subject.

e. The internal NRB shall be responsible for the correct application of this standard and its proper interfacing with internal nonconformance reporting and processing.

### 2.3.2 Customer NRB

For major nonconformances (see 2.2) the participation of the customer in the NRB is mandatory.

a. As a minimum, the internal NRB shall be enlarged by:
   • Customer's PA representative (chairman);

- Customer's Engineering representative .

b. Also in this case, the chairman shall nominate additional members, or experts, depending on the NCR subject.
The customer's representatives may, with the supplier's agreement, invite observers or consultants from higher customer level, depending on the impacts of the nonconformance.

## 2.4 Nonconformance dispositions

A basic disposition for a nonconforming item can be one of the following:

a. **Return to supplier**

This disposition only applies to nonconforming procured items.

b. **Use "as is"**

The item is found to be usable without eliminating the nonconformance.

c. **Rework**

The item is recoverable to conform completely with all specified requirements.

By definition, rework is the re-application of the process as originally planned.

Additional work may have to be performed to prepare the item for the rework (e.g. removal of faulty work, cleaning, etc.) But in no case should the result of earlier applied processes or the precondition for other processes to be applied later on, be affected.

d. **Repair**

The item is recoverable such that it will fulfil the intended usage requirements although it will not conform to the originally specified requirements.

The repair procedure shall be one of the following:

1. Qualified or standard repair procedure

   Those repair procedures which have been approved by the customer in advance for defined applications.

2. Specific repair procedure

   Those repair procedures which are prepared for the specific nonconformance and are approved by the NRB.

Any repair procedure shall include the verifications needed to check the repair result.

e. **Scrap**

The item is not recoverable by rework or repair, for technical or economic reasons.

## 2.5 Interfaces with internal nonconformance reporting and processing

The supplier's internal reporting and processing of nonconformances shall:

a. not conflict with this standard

b. be open and visible to customer reviews

c. not delay the processing of the nonconformance in accordance with this standard.

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# 3

# Nonconformance processing requirements

## 3.1 General

Nonconformance processing is summarized in the flow chart in Annex A.

## 3.2 Immediate actions

a. When a nonconformance is detected, an immediate preliminary assessment shall be performed by the project PA representative to establish its extent and cause.

b. Based on this assessment the following actions shall be taken, as necessary, without delay:

   1. Provisions for the safety of the personnel and of the equipment.
   2. Prevention of unauthorized use of the nonconforming items, by marking and, unless otherwise determined by the PA representative, segregation until their disposition.
   3. Prevention of the recurrence of the nonconformances on similar or identical items under processing or testing at that time. This may require suspension of manufacturing or testing.

c. The following shall apply for the segregation of nonconforming articles:

   1. The supplier shall establish a clearly marked holding area for nonconforming items pending NRB disposition.
   2. Access to this area shall be limited to NRB members or personnel authorized by the NRB.
   3. Provisions shall be made to prevent unauthorized removal of any item.
   4. Items whose segregation in the holding area is not practicable shall be prominently identified.

## 3.3 Report and recording

a. After verifying that the nonconformance exists, it shall be reported on an NCR and submitted to the internal NRB.

b. The description of the nonconformance shall be clear, unambiguous and sufficiently detailed that it can be be understood by personnel not involved in its detection.

c. The NCR reference shall be entered on relevant quality and manufacturing records related to the nonconforming item.

d. The NCR reference, together with key data, shall be entered on the nonconformance records (see clause 6).

## 3.4 Processing by internal NRB

Immediately after the reporting of a nonconformance, the chairman shall convene the Internal NRB.

### 3.4.1 Classification

After verification that the nonconformance is fully described and the NCR is filled in correctly, the internal NRB shall classify the nonconformance in accordance with the criteria defined in 2.2.

### 3.4.2 Analysis of causes and consequences

a. The internal NRB shall investigate the cause(s) of the nonconformance, or if necessary engage a separate group of experts for the investigation .

b. No physical operation of an irreversible nature shall be carried out on the nonconforming item without prior approval by the customer.
Non-destructive testing may be used, if the techniques involved have previously been approved by the customer.

c. The internal NRB shall analyze whether human error or poor workmanship are primary or secondary cause for the nonconformance. In these cases, all related documents and competence level of personnel shall be reviewed in order to prevent recurrence.

d. The investigation of the consequences of the nonconformance shall be supported, where appropriate, by dependability experts and/or by documentation such as FMECA, CIL, DJF.

### 3.4.3 Disposition of minor nonconformances

a. The internal NRB shall dispose minor nonconformances in accordance with 2.4.
Unless otherwise stated in the business agreement, minor nonconformances need not to be notified to the customer.

b. Minor nonconformances shall be included in the summary status report (see 5.3) and available to the customer, upon request, for the review of the correct application of classification criteria and appropriate processing.

### 3.4.4 Processing of major nonconformances

a. Major nonconformances shall be subjected to the customer NRB processing.

b. The supplier shall report major nonconformances to the customer within 5 working days of their detection, unless otherwise specified in the business agreement.

c. All the information defined as mandatory in the generic format in Annex B shall be provided, including a proposed disposition.

## 3.5 Processing by customer NRB

### 3.5.1 Assessment of higher level impacts

a. The customer shall assess whether the requirements of the higher level customer are impacted.

b. In case of actual or suspected impacts, the customer shall notify his customer and involve him in the ensuing NRB.

### 3.5.2 Confirmation of causes and consequences

a. The customer NRB shall take into account the results of the internal NRB's investigations (see 3.4.2), and carry out complementary investigations, as necessary.

b. Failure analysis and other technical analyses shall be performed, if requested by the NRB, to assess the cause and effect of nonconformances and to support its disposition.

c. Failure analysis shall be documented in reports to be approved by the NRB.

d. During the NRB meeting, the following points shall be presented and reviewed:
   - the detailed circumstances of the nonconformance;
   - the different analyses, tests or simulations performed to understand the cause of the nonconformance;
   - the consequences of the nonconformance.

e. Before determining a disposition, the NRB shall adequately determine the causes and consequences of the nonconformance.

### 3.5.3 Disposition of major nonconformances

a. **Major** nonconformances shall be subjected to the dispositions defined in 2.4.

b. When determining a disposition, the NRB shall:
   1. Consider all pertinent data and information related to the nonconforming item (e.g. alerts from other programmes, FMECA, hazard analysis, supplier records, qualification test data).
   2. Review records of any previous similar or identical nonconformances.
   3. Assess the feasibility of the intended dispositions.
   4. Assess the applicability of dispositions and corrective actions to existing and in process items (including re-inspection and retest).
   5. Assess the effect of the nonconformance on the requirements of the business agreement and on the intended use of the item and in particular whether the item is identified as critical.
   6. Assess the need for raising an Alert to other users of similar nonconforming items, and activate the related procedures established in the business agreement.

### 3.5.4 Request for waiver

a. When NRB dispositions result in "use as-is" or "repair" by specific repair procedures (see 2.4.d), any difference between customer requirements and the actual status of the item shall be subjected to a Request for Waiver (RFW), according to the requirements established in ECSS-M-40, subclause 5.2.12.

b. This RFW shall be submitted to the customer for approval. The agreement on the NCR disposition by the NRB members does not imply the approval of any related RFW.

c. NCRs which originated a RFW shall be kept open until completion of RFW processing.

## 3.6 Corrective and preventive actions

a. The NRBs shall determine corrective actions to eliminate the cause(s) of the nonconformance and prevent any recurrence.
   Typical corrective actions consist of changes to tools, equipment, facilities, processes, materials, drawings, specifications, procedures, etc.

b. The NRB shall determine also preventive actions to avoid the occurrence of the nonconformance on similar items.

The disposition “use as is” does not require any physical action on the nonconforming item to make it usable, but does require corrective and preventive actions.

## 3.7 Implementation of actions and nonconformance close-out

### 3.7.1 Implementation of actions

a. Disposition shall only be implemented by performing actions defined by the NRB and approved RFWs, if applicable.

b. Reworked and repaired items shall be re-submitted to all planned inspections and tests.
Repair may require additional inspection and tests, as defined in the applicable repair procedure (see 2.4 d).

c. Items with “scrap” disposition shall be prominently identified and segregated from all other material within a bonded area under QA supervision.

d. A list of scrapped items which are finally disposed of shall be maintained and available.

e. All the performance and results of all actions related to a nonconformance shall be traceable to and from the associated NCR.

### 3.7.2 Nonconformance close-out

a. An NCR shall be closed-out only after:

- All related actions have been performed and their results successfully verified. In case of long term preventive actions, the NCR may be closed if evidence is provided that their handling, through an agreed management process, has been formally initiated.
- All necessary inspections and tests have been performed, and their results verified and reported on or traceable from the NCR.
- Related RFWs are approved.

b. NCRs shall be closed-out by an authorised PA representative of the supplier, by stamping and signing the NCR form.

c. After close-out, a copy of the NCR shall be sent to the customer(s) involved in its processing.

# 4

# Special nonconformance control requirements

## 4.1 EEE components nonconformances

### 4.1.1 Applicability

a. This subclause 4.1 shall apply to all EEE components.

b. SCC qualified components or components under SCC qualification shall be processed in accordance with ESA/SCC 22800, prior to delivery to the purchaser.

### 4.1.2 Basic requirements

The basic requirements defined in clause 2 shall apply with the following addition:

a. The final customer shall be invited to the NRB meeting related to MAJOR nonconformances on EEE components.

### 4.1.3 Processing requirements

The requirements defined in clause 3 shall apply, with the following modifications:

a. The notification of a **major** nonconformance shall contain, as a minimum:
   - information concerning the history of the component affected (type, manufacturer, batch number, selection programme);
   - description of the nonconformance, and exact conditions of occurrence,
   - the cause of the nonconformance, whether known or presumed,
   - the possible stress caused to the neighbouring components.

b. If it is suspected that nonconforming items of the same batch or production have been released to other users, an alert shall be submitted to the final customer, in accordance with the procedures established by the business agreement.

## 4.2 Software nonconformances

### 4.2.1 Applicability

a. This clause shall apply to software nonconformances. Software problems are treated according to ECSS-Q-80, subclause 2.3.6.

b. The requirements in this clause shall be applicable to the following software products:
   - on-board software,

- verification software (simulators, test beds ...)
- mission control software (ground based),
- support software for development of the above.

c. This clause shall apply during software development, starting from successful software unit testing.

### 4.2.2 Basic requirements

The same basic requirements defined in clause 2 shall apply to software nonconformances, with the following modification:

a. The dispositions defined in 2.4 shall be the replaced by the following:
   - use“as-is”, when the software is found to be usable without eliminating the nonconformance;
   - fix, when the software product can be made fully compliant to all specified requirements, by:
     * correction of the software;
     * addition of software patches;
     * re-design.
   - return to supplier, for procured software products (as COTS).

b. Software fixes shall be validated by appropriate regression testing.

## 4.3 Operational nonconformances and anomalies

### 4.3.1 Applicability

a. This clause shall apply to non-compliances to stated requirements, deviations from approved procedures, deviations from expected behaviour and human errors detected during operations, starting from the first acquisition of the spacecraft signal.

b. The requirements in this clause shall apply to the following items :
   - the flight segment;
   - the ground segment, including hardware, software, documentation and data;
   - the mission products.

### 4.3.2 Basic requirements

#### 4.3.2.1 General principles

a. The general principles defined in 2.1 shall apply.

It must be considered that operational nonconformances and anomalies may have impacts on several parties: the organisation responsible for the operations (called the “operator” in the following text), the owner of the space system, the procurement agency of the space system, the suppliers of its elements and the customers of the mission products. The same organisation may cover at the same time more than one of the roles above.

b. Taking this into account, the following principles shall apply:
   1. all the parties involved shall define clear responsibilities, authorities and procedures for the processing of operational nonconformances and anomalies;
   2. the requirements for the mission products and the associated acceptance criteria shall be documented and agreed among the parties concerned, in order to allow the unambiguous identification of nonconformances.

3. although administrative work shall not hinder the immediate implementation of critical actions, all activities shall be recorded and controlled in accordance with the established procedures.

#### 4.3.2.2 Classification

a. Operational nonconformances shall be classified in accordance with 2.2.

b. Operational anomalies shall be classified in accordance with the severity of their consequences on the space system and the mission products, and the importance of the affected function for the global performance of the system.

c. The criteria for classification of operational anomalies shall be agreed with the parties involved.

#### 4.3.2.3 Nonconformance review board (NRB)

a. Based on the classification of operational nonconformances and anomalies, as defined in 4.3.2.2, the parties concerned shall agree:
   - the classes of operational nonconformances and anomalies which can be decided by the operator's internal NRB;
   - the composition of higher level NRBs, as appropriate.

b. As a minimum, the operator's internal NRB shall include the following members:
   - PA representative;
   - technical responsible for the operations of the space system.

   Additional experts may be called as necessary.

c. Timely provisions shall be considered to secure the necessary support by relevant parties involved in the development and procurement of the space system for the duration of the space mission.

### 4.3.3 Processing requirements

a. The operator shall adapt the basic requirements defined in clause 3 to the reporting and processing of operational nonconformances and anomalies, by establishing and maintaining documented procedures to be agreed with the relevant parties.

b. In particular, the following aspects specific to operational anomalies shall be addressed:
   1. the established procedures shall take into account that operational anomalies may require immediate response, in order to avoid the loss of the spacecraft or major mission degradation;
   2. the operator should be granted the authority to carry out urgent actions for the analysis of the causes and consequences, without systematic prior approval by the other parties concerned (e.g. the spacecraft owner).

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# 5

# Documentation requirements

## 5.1 Nonconformance Report (NCR)

a. All **major** nonconformances shall be reported on an NCR form to be accepted by the customer.

The generic form given in Annex B is recommended.

The same form is recommended also for minor nonconformances.

b. An NCR shall consist basically of the following data groups:
   - Identification of nonconforming item.
   - Nonconformance description.
   - Processing and preliminary disposition by the internal NRB.
   - Disposition, preventive and corrective actions by the customer NRB.
   - Verification of actions and close-out.

c. The data elements identified as mandatory in Annex B shall be included, as a minimum.

d. NCRs shall be compiled in the language defined in the business agreement.

e. The original of an NCR shall be unambiguously identifiable.

## 5.2 Formats for internal nonconformance reporting

The supplier may use his own NCR formats for internal application.

a. These formats shall include all data elements designated as mandatory in Annex B.

b. However, internal formats shall be converted and issued in accordance with this standard in the following cases :
   - The internal NRB classifies the nonconformance as major.
   - The customer requests a minor nonconformance to be re-classified as major.
   - Any nonconformance which is detected on customer supplied articles.

The supplier's working language is acceptable for Internal NCRs, unless otherwise required by the business agreement.

## 5.3 Nonconformance summary status report

a. The supplier shall maintain an NCR summary list, providing a complete representation of the status of all nonconformances occurring in the frame of a business agreement, for each product, at any time.

b. For each NCR, at least the following information shall be included:
   - NCR unique identification;
   - Nonconforming item identification;
   - Short description of the nonconformance;
   - Date of last NRB meeting;
   - Disposition;
   - Implementation status of the disposition;
   - Reference to RFW, if applicable;
   - Open/closed status.

c. The nonconformance summary status report shall cover major and minor NCRs.

d. The nonconformance summary status report shall be part of the periodic PA Status Report to the customer, unless otherwise required by the business agreement

The nonconformance summary status report should be generated from the nonconformance data base (see subclause 6.2).

# 6

# Quality record requirements

## 6.1 Records associated to nonconformances

a. Each nonconformance shall be fully documented and self-explanatory.

b. Nonconformance records shall consist of:

- the NCRs themselves, as defined in 5.1 and 5.2.
- all documents referenced by them, such as minutes of meeting, inspection reports, test reports, failure analysis reports etc.

## 6.2 Nonconformance database

The supplier should maintain a database of nonconformances.

The nonconformance database should be used:

- for NCR follow-up;
- for the generation of NCR summary status report (see 5.3);
- as an electronic tool for complete NCR processing.

The data base should contain information related to both minor and major NCRs.

The amount of information stored should be sufficient to allow statistical and trend analysis.

## 6.3 Analysis of records

a. The supplier shall periodically review the nonconformance records, in order to evaluate the progress of the actions for the correction and prevention of nonconformances and to ensure their proper and timely close-out.

b. The nonconformance records shall also be analysed to assess the existence of trends in the occurrence of nonconformances.

This analysis should be aimed at detecting conditions which may lead to new nonconformances and verify the effectiveness of the implementation of the corrective actions performed for previous nonconformances.

The analysis of records should be also aimed at extracting lessons learned, useful for preventing the repetition of mistakes or reinforcing successful practices.

c. The frequency of the reviews shall be appropriate to the volume of nonconformances, but should not be less than quarterly.

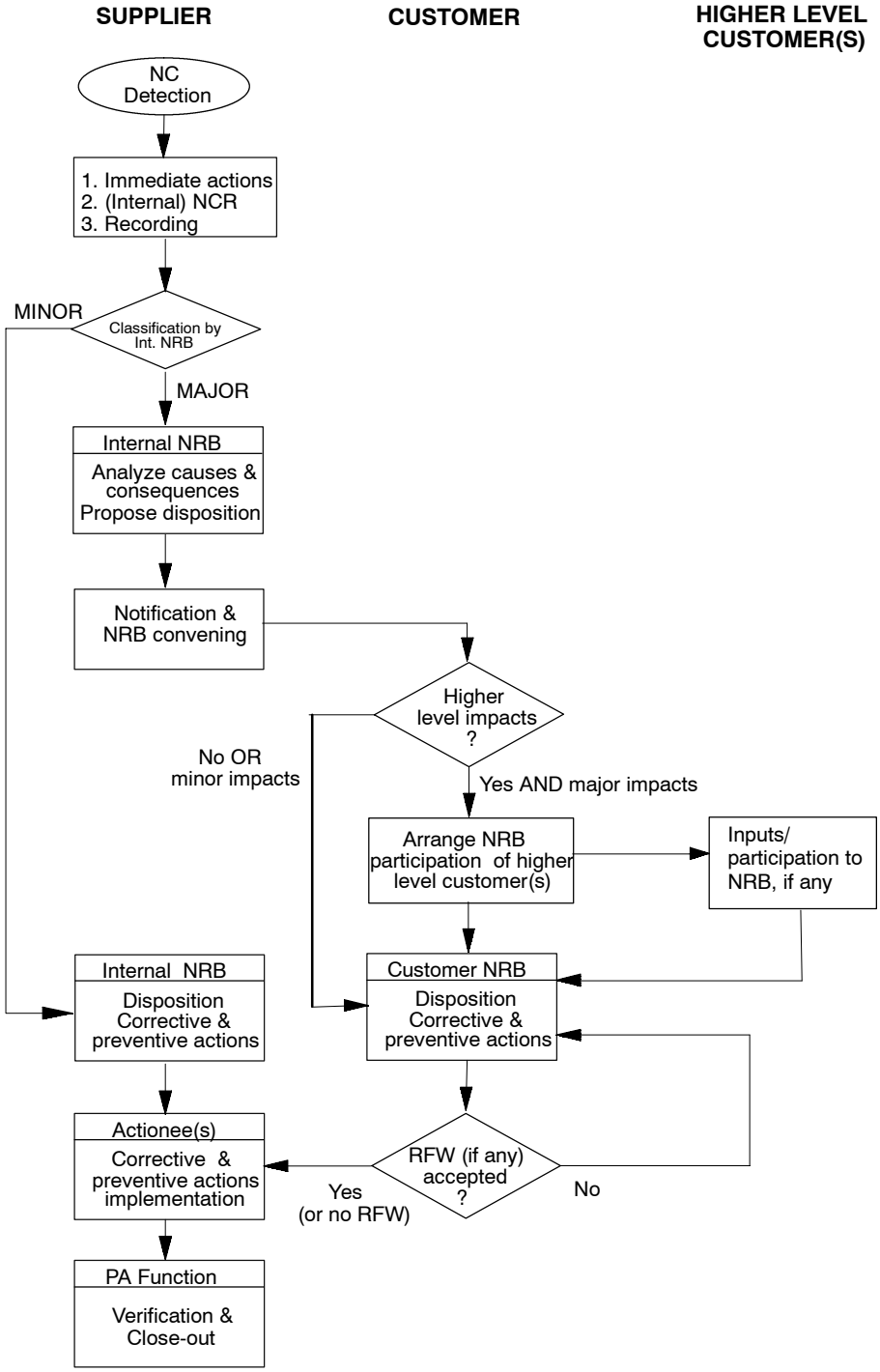
d. The analysis of the nonconformance records shall provide, as a minimum:
   - total number per flight configuration, subsystem and equipment as appropriate.
   - trend of open and closed status, both in terms of disposition and corrective action(s) implementation.
   - number by cause of the nonconformance, to identity the areas for improvement and verify the effectiveness of corrective actions.

The trends should be shown separately for hardware, EEE parts and software.

For EEE parts the trend per generic type (e.g. capacitors, power transistors, microprocessors, carbon resistors, diodes, etc.) should also be provided.

# Annex A (informative)

# Nonconformance processing flow chart



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# Annex B (normative)

# Generic NCR form and NCR data requirements

| 1 **Company** | 2 **Project Name** | NCR-N°: 3 Revision 4<br>Related internal NCR-N°: 5<br>Critical Item: Yes ☐ No ☐ 6<br>Page 1 of ___ Attachments: 7 |
|---|---|---|

# Nonconformance Report

NCR **Title** 8

| | |
|---|---|
| NC Item **Identification** 9 Sr-N | Drawing N° 12 |
| Next higher Assembly 10 | Procedure N° 13 |
| Subsystem Model ° 11 | Supplier 14 Purchase Order |
| **NC Observation**<br>Date: Location: 15 | NC detected during ....<br>(Prod.-/Inspec. Step, Test, etc 16 |
| Description of Nonconformance 17 | Requirements violated 18<br>Initiator: Date, Name and Signature 19 |

| | | |
|---|---|---|
| **Internal NRB Dispositions** 20 Ref. to MoMs 21 | | **Classification:** 22<br>**Minor** ☐ **Major** ☐<br>Customer Notification per 23<br>Verification 24 |
| Cause of NC 25<br>Ref to Failure Report 26 | Corrective/Preventive Actions 27 | |

| | | | | |
|---|---|---|---|---|
| Date:<br>Name:<br>Signature: | **PA** 28 | **Engineering** 29 | 30 | 31 |

| | | |
|---|---|---|
| **Customer NRB Dispositions** (Class major, only) 32 Ref. to MoMs 21 | | Verification 24 |
| Finally determined Cause of NC 33<br>Ref to Failure Report 34 | Corrective/Preventive Actions 35 | |

| | | |
|---|---|---|
| Request for Waiver No ☐<br>Yes ☐ Reference: 36 | Alert No ☐<br>Yes ☐ Reference 37 | Other related Documents 38 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **NRB Approval**<br>Organization/<br>Name | Chairman 39 | 40 | 41 | 42 | 43 | **NCR Close out** 49 |
| Date, Signature | 44 | 45 | 46 | 47 | 48 | Date, Signature, Stamp |

| 1 Company | 2 Project Name | NCR-N°: 3 Revision 4<br>Page __ of ___ 7 |
|---|---|---|

# Nonconformance Report

## - Continuation Sheet -

| NCR Treatment Sequence / Findings / Statements / Actions | Verification |
|---|---|
| 50 | 24 |

## Description of the NCR data requirements

| Box | Field | Description | Mandatory entry |
|---|---|---|---|
| **1** | Company | Identification of the supplier of the nonconforming item | Yes |
| **2** | Project Name | Project under which the item is procured | Yes |
| **3** | NCR-No. | Unique identification and registration number | Yes |
| **4** | Revision | Alpha or numerical identification of updated issues | Yes |
| **5** | Related internal NCR | Reference to internal report which might have been issued previously | No |
| **6** | Critical Item | Yes or No as identified in the project CIL | Yes |
| **7** | Page | Individual page number and total number of pages of the report | Yes |
| **8** | Attachments | attached pages (only first page of each item) | Yes |
| **8** | NCR Title | Short description (it should be the same used in the Nonconformance Summary Status Report) | No |
| **9** | NC Item | Identification of the nonconforming item per name and number according to the CIDL and its serial-number (if any) | Yes |
| **10** | Next higher Assembly | Identification of the assembly group of which the nonconforming product shall form part | No |
| **11** | Subsystem<br>Model | as per 10<br>as per 10 | No<br>No |
| **12** | Drawing-No. | Document which defines the affected product | Yes |
| **13** | Procedure-No | Procedure in execution when the nonconformance occurs | Yes |
| **14** | Supplier<br>Purchase Order | Name of the supplier of the nonconforming item<br>Number of Purchase Order if the nonconformance is observed on a supplied product | Yes,<br>if applicable |
| **15** | NC Observation | Date and location of the nonconformance observation | Yes |
| **16** | NC detected during ..... | Activity being performed when the nonconformance was detected<br>Name and organisation group of the NC observer | Yes,<br>where relevant |
| **17** | Description | Description of the nonconformance, location on the product, means of detection, condition for observation, to be supported by sketches and attachments as appropriate, environmental conditions pertaining to the product at that time | Yes |
| **18** | Requirements violated | Identification of the detailed requirement to which the product does not conform | No |
| **19** | Initiator | Name, Date and Signature of the person raising the nonconformance | Yes |
| **20** | Internal NRB | Dispositions as per subclause 2.4 and actions agreed by the NRB | Yes |
| **21** | Ref to MoMs | Identification of Minutes of Meeting drafted during the NRB meeting | Yes,<br>if any |
| **22** | Classification | Minor or Major as per internal NRB decision | Yes |

| Box | Field | Description | Mandatory entry |
|---|---|---|---|
| **23** | Customer Notification | Date and reference to written notification | No |
| **24** | Verification | Individual close out statement by PA personnel for all actions determined by the NRB | Yes |
| **25** | Cause of NC | Basic fact and/or circumstances which causes the nonconformance | Yes |
| **26** | Ref to Failure Report | Document Identification Number of the Failure Analysis Report | Yes, if existing |
| **27** | Corr./Prevent. Actions | Corrective/preventive Actions agreed by internal NRB for minor NCR's | Yes |
| **28** | PA | Date, Name and Signature of PA representative in the internal NRB | Yes |
| **29** | Engineering | Date, Name and Signature of the Engineering representative in the internal NRB | Yes |
| **30 31** | blank | Date, Name and Signature of additional NRB members of the internal NRB | No |
| **32** | Customer NRB Dispositions | Dispositions as per subclause 2.4 and actions agreed by the Customer NRB | Yes, if class major |
| **33** | Finally determ cause of NC | Basic fact and/or circumstances which causes the nonconformance as confirmed by Customer NRB | Yes, if class major |
| **34** | Ref to Failure Report | Document Identification Number of the Failure Analysis Report on Customer NRB level | Yes, if existing |
| **35** | Corr./Prevent. Actions | Corrective Actions agreed by Customer NRB for major NCR's | Yes |
| **36** | Request for Waiver | Yes or No based on Customer NRB disposition and the identification number of the RFW in case of Yes | Yes, if applicable |
| **37** | Alert | Yes or No as per Customer NRB decision and the identification number of the Alert in case of Yes | No |
| **38** | Other Documents | Identification of other related documents according to NRB decision | Yes, if applicable |
| **39** | Chairman | Name of Company and Person chairing the Customer NRB | Yes |
| **40 to 43** | blank | Names of the members of the Customer NRB and respective companies | Yes |
| **44** | blank | Date and Signature of the Customer NRB chairman | Yes |
| **45 to 48** | blank | Date and Signature of the Customer NRB members | Yes |
| **49** | NCR Close out | Date, Signature and Stamp of the supplier PA / QA responsible for final closure | Yes |
| **50** | Additional Info /Continuation Sheet | Any additional information and actions with clear link to the NCR | Yes, if needed |

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# ECSS Document Improvement Proposal

| 1. Document I.D. | 2. Document Date | 3. Document Title |
|---|---|---|
| ECSS-Q-20-09A | 14 October 1997 | Nonconformance control system |

**4. Recommended Improvement** (identify clauses, subclauses and include modified text and/or graphic, attach pages as necessary)

**5. Reason for Recommendation**

**6. Originator of recommendation**

| Name: | Organization: | |
|---|---|---|
| Address: | Phone:<br>Fax:<br>E-Mail: | **7. Date of Submission:** |

**8. Send to ECSS Secretariat**

| Name: | Address: | Phone: +31-71-565-3952 |
|---|---|---|
| W. Kriedte | Keplerlaan 1 | Fax: +31-71-565-6839 |
| ESA-TOS/QR | 2200AG Noordwijk | E-Mail: wkriedte@estec.esa.nl |
| | Netherlands | |

**Note:** The originator of the submission should complete items 4, 5, 6 and 7.

This form is available as a Word and Wordperfect-Template on internet under
http://www.estec.esa.nl/ecss/improve/

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