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**IPC-9711**

# **Generic Requirements for Automated Inspection Process Control**

If a conflict occurs between the English language and translated versions of this document, the English version will take precedence.

Developed by the IPC-9711 Task Group (7-25c) of the Process Control Management Committee (7-20) of IPC

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# Table of Contents

<b>1</b>	<b>SCOPE</b> .....	1	<b>4</b>	<b>INSPECTION SYSTEM USE REQUIREMENTS AND CAPABILITIES</b> .....	4
<b>1.1</b>	<b>Purpose</b> .....	1	<b>4.1</b>	<b>Inspection System Performance</b> .....	4
<b>1.2</b>	<b>Classification</b> .....	1	4.1.1	Accuracy, Repeatability and Reproducibility.....	4
<b>1.3</b>	<b>Definition of Requirements</b> .....	1	4.1.1.1	Accuracy.....	4
1.3.1	Hardware Defects and Process Indicators.....	2	4.1.1.2	Repeatability.....	5
1.3.2	Process Nonconformance.....	2	4.1.1.3	Reproducibility.....	5
<b>1.4</b>	<b>Process Control Requirements</b> .....	2	4.1.2	Defect Detectability.....	5
1.4.1	Artificial Intelligence (AI).....	2	4.1.3	Resolution and Imaging Capabilities.....	5
<b>1.5</b>	<b>Order of Precedence</b> .....	2	<b>4.2</b>	<b>Software</b> .....	5
1.5.1	Conflict.....	2	<b>4.3</b>	<b>Networks and Communication</b> .....	5
1.5.2	Clause References.....	2	4.3.1	Data Collection for Analytics.....	5
1.5.3	Appendices.....	2	<b>5</b>	<b>INSPECTION SYSTEM RECIPE ALGORITHM SETUP REQUIREMENTS</b> .....	5
<b>1.6</b>	<b>Terms and Definitions</b> .....	2	<b>5.1</b>	<b>Programming Inputs</b> .....	5
1.6.1	Inspection System Recipe.....	2	<b>5.2</b>	<b>Programming Outputs</b> .....	6
1.6.2	Call.....	3	5.2.1	Program Files.....	6
1.6.3	Confusion Matrix.....	3	5.2.2	Traceability Data.....	6
1.6.4	Disposition.....	3	5.2.3	Log Files.....	6
1.6.5	Engineering Documentation.....	3	5.2.4	Audit Trail.....	6
1.6.6	False Call.....	3	5.2.5	Quality Metrics.....	6
1.6.7	Feature.....	3	<b>6</b>	<b>NEW SYSTEM SETUP</b> .....	6
1.6.8	Inspection Program.....	3	<b>6.1</b>	<b>Data Provided by Manufacturer</b> .....	6
1.6.9	Manufacturer.....	3	<b>6.2</b>	<b>Data and Support Provided by the Supplier</b> .....	6
1.6.10	Manufacturing Execution System (MES).....	3	<b>6.3</b>	<b>Data and Preparation at Installation Site (at the Manufacturer)</b> .....	7
1.6.11	Objective Evidence.....	3	<b>6.4</b>	<b>Installation</b> .....	7
1.6.12	Overall Equipment Effectiveness (OEE).....	3	<b>7</b>	<b>INSPECTION SYSTEM QUALIFICATION AND MAINTENANCE</b> .....	7
1.6.13	Process Control.....	3	<b>7.1</b>	<b>Inspection System Qualification</b> .....	7
1.6.14	Supplier.....	3	<b>7.2</b>	<b>Qualification Measurements</b> .....	7
1.6.15	User.....	3	<b>7.3</b>	<b>Qualification (Gage) Parts and Their Monitoring</b> .....	8
1.6.16	Unit Under Inspection (UUI).....	3	<b>7.4</b>	<b>Qualification Measurement Volume (Depth)</b> .....	8
<b>1.7</b>	<b>Facilities Cleanliness</b> .....	3	<b>7.5</b>	<b>Qualification Acceptance Criteria</b> .....	8
<b>1.8</b>	<b>Acceptance Requirements</b> .....	4	7.5.1	Parametric Feature Acceptance Criteria.....	8
<b>1.9</b>	<b>Abbreviations and Acronyms</b> .....	4	7.5.2	Attribute Agreement Analysis.....	8
<b>2</b>	<b>APPLICABLE DOCUMENTS</b> .....	4	<b>7.6</b>	<b>Reference Value and Tolerance Range</b> .....	8
<b>2.1</b>	<b>IPC</b> .....	4	<b>7.7</b>	<b>Requalification Parameters</b> .....	9
<b>2.2</b>	<b>JEDEC</b> .....	4	<b>7.8</b>	<b>Documentation</b> .....	9
<b>3</b>	<b>INSPECTION STRATEGY</b> .....	4			
<b>3.1</b>	<b>Reliability Strategy</b> .....	4			
<b>3.2</b>	<b>Cycle Time Strategy</b> .....	4			
<b>3.3</b>	<b>Feedback Loops with Other Tests</b> .....	4			

<b>7.9</b>	<b>Calibration</b> .....	9	<b>8.4</b>	<b>Algorithm Settings</b> .....	11
7.9.1	Calibration Intervals .....	9	8.4.1	Inspection Criteria .....	11
7.9.2	Repeatability and Reproducibility Analysis .....	9	8.4.2	Threshold Values .....	11
<b>7.10</b>	<b>System Matching</b> .....	10	8.4.3	Sample Units .....	11
<b>7.11</b>	<b>Ongoing Maintenance</b> .....	10	<b>8.5</b>	<b>Statistical Process Control</b> .....	11
<b>7.12</b>	<b>Inspection System Reliability</b> .....	11	<b>8.6</b>	<b>Accept/Reject Criteria</b> .....	11
<b>8</b>	<b>PROCESS CONTROL</b> .....	11	<b>8.7</b>	<b>False Call Reduction</b> .....	12
<b>8.1</b>	<b>Inspection Parameters</b> .....	11	<b>8.8</b>	<b>Escape Rate</b> .....	12
<b>8.2</b>	<b>Strategy Based on Defined Standard Inspection Methods</b> .....	11			
<b>8.3</b>	<b>Key Defects to Monitor</b> .....	11	<b>APPENDIX A</b>	<b>Index of Acronyms and Abbreviations</b> .....	13

# IPC-9711

## Generic Requirements for Automated Inspection Process Control

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### 1 SCOPE

This standard provides generic requirements for automated inspection systems to define, set up, establish and apply process controls. Requirements include inspection parameters, calibration, detectability, resolution, threshold limits and program setups, measurement system analysis (MSA), maintenance and verification protocols.

This standard establishes generic requirements applicable to automated inspection systems and is intended to be used in conjunction with product/process-specific standards of the IPC-971X series.

**1.1 Purpose** The purpose of this standard is to set industry-defined generic requirements for inspection systems to reduce false calls to ensure quality and reliability, with improved throughput and shortened cycle times. This standard also supports electronics manufacturers to enable advanced manufacturing, real-time data analytics and control capabilities.

**1.2 Classification** This standard recognizes that electrical and electronic assemblies are subject to classifications by intended end-item use. Three general end-product classes have been established to reflect differences in manufacturability, complexity, functional performance requirements, quality and reliability requirement, and verification (inspection/test) frequency.

#### **CLASS 1 General Electronic Products**

Includes products suitable for applications where the major requirement is function of the completed assembly.

#### **CLASS 2 Dedicated Service Electronic Products**

Includes products where continued performance and extended life is required, and for which uninterrupted service is desired but not critical. Typically, the end-use environment would not cause failures.

#### **CLASS 3 High Performance Electronic Products**

Includes products where continued high performance or performance-on-demand is critical, equipment downtime cannot be tolerated, end-use environment may be uncommonly harsh, and the equipment must function when required, such as life support or other critical systems.

**1.3 Definition of Requirements** The words **shall** or **shall not** are used in the text of this document wherever there is a requirement for materials, preparation, process control or acceptance.

Where the words **shall** or **shall not** are used in this standard, the requirements for each class are in brackets next to the requirement.

N = No requirement has been established for this Class but may require separate criteria as agreed between the Manufacturer and User.

A = Acceptable

P = Process Indicator

D = Defect

#### **Examples:**

[A1P2D3] is Acceptable Class 1, Process Indicator Class 2 and Defect Class 3

[N1D2D3] is No requirement has been established Class 1, Defect Classes 2 and 3

[A1A2D3] is Acceptable Classes 1 and 2, Defect Class 3

[D1D2D3] is Defect for all Classes

The word “should” reflects recommendations and is used to reflect general industry practices and procedures for guidance only.

Line drawings and illustrations are depicted herein to assist in the interpretation of the written requirements of this Standard. The text takes precedence over the figures.