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**Statistical interpretation of data —
Part 1: Statistical presentation of data**

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statistical distribution, sampling equipment

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. By this establishment **JIS Z 9041** :1968 was withdrawn and replaced with this Standard.

JIS Z 9041 :1999 consists of the following 4 parts under the title "Statistical interpretation of data".

- Part 1: Statistical presentation of data
- Part 2: Techniques of estimation and test relating to means and variances
- Part 3: Tests and confidence intervals relating to proportions
- Part 4: Power of tests relating to means and variances

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In the event of any doubts arising as to the contents,
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Statistical interpretation of data — Part 1: Statistical presentation of data

1 Scope This Japanese Industrial Standard specifies the methods for taking, summarizing and expressing the data to be used, for example, in factory and laboratory.

2 Normative references The following standards contain provisions which, through reference in this Standard, constitute provisions of this Standard. As to these normative references, the most recent editions (including amendments) thereof apply.

JIS Z 8101-1 *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms*

Remarks: The matters referred to ISO 3534-1:1993 *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms* are equivalent to the relevant matters in the said standard.

JIS Z 8101-2 *Statistics — Vocabulary and symbols — Part 2: Statistical quality control terms*

Remarks: The matters referred to ISO 3534-2:1993 *Statistics — Vocabulary and symbols — Part 2: Statistical quality control* are equivalent to the relevant matters in the said standard.

JIS Z 9021 *Shewhart control charts*

Remarks: The matters referred to ISO 8258:1991 *Shewhart control charts* are equivalent to the relevant matters in the said standard.

JIS Z 9041-2 *Statistical interpretation of data — Part 2: Techniques of estimation and test relating to means and variances*

3 Definitions and symbols

3.1 Definitions For the purpose of this Standard, the definitions given in JIS Z 8101-1 and JIS Z 8101-2, and the following definitions apply:

- a) **sum of squares** The sum of squares of the differences between each characteristic and the mean.

$$S = (x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + (x_3 - \bar{x})^2 + \cdots + (x_n - \bar{x})^2 = \sum x_i^2 - \frac{(\sum x_i)^2}{n}$$

The sums of squares relating to two variables x and y are calculated by the following equations:

$$S(x, x) = \sum (x_i - \bar{x})^2 = \sum x_i^2 - \frac{(\sum x_i)^2}{n}$$

$$S(y, y) = \sum (y_i - \bar{y})^2 = \sum y_i^2 - \frac{(\sum y_i)^2}{n}$$

- b) **process capability chart** Graphical expression of the capability relating to the quality a process has. It is also called process quality capability chart.