

CLAIMS

What is claimed is:

1. A two-dimensional code, comprising cells
5 representing binary-coded data that are arranged as a
pattern in the form of a two-dimensional matrix,
wherein the two-dimensional code comprises
three or more different position detection patterns that
can be individually detected from an image.
- 10 2. The two-dimensional code according to claim 1,
comprising four or more of the different position
detection patterns that can be individually detected from
an image.
- 15 3. The two-dimensional code according to claim 1
or 2, comprising one or more position correction
patterns.
- 20 4. The two-dimensional code according to any one
of claims 1 to 3, wherein the three or more different
position detection patterns are composed of a combination
of a square(s) and a rectangle(s).
- 25 5. The two-dimensional code according to any one
of claims 1 to 4, wherein
the region of the two-dimensional matrix
that excludes the parts of the position detection
patterns is divided into a plurality of blocks having the
same size, and
the two-dimensional matrix comprises a
light or dark separation space between adjacent blocks.
- 30 6. The two-dimensional code according to claim 5,
wherein the position detection patterns each have an area
larger than the blocks.
- 35 7. The two-dimensional code according to claim 6,
wherein
the blocks each have a size of 3×3
cells,
the separation space has a width of one
cell, and

the position detection patterns each have a lateral width of four or more cells and a vertical length of four or more cells.

5 8. The two-dimensional code according to any one of claims 1 to 7, wherein

 at least two of the three or more different position detection patterns are in the form of a frame comprising an identification space therein, and
10 the identification space is a space twice or larger than the smallest cell constituting the two-dimensional code.

 9. The two-dimensional code according to any one of claims 1 to 7, wherein

 the two-dimensional code comprises four or
15 more of the different position detection patterns that can be individually detected from an image,

 at least three of the four or more different position detection patterns are in the form of a frame comprising an identification space therein, and
20 the identification space is a space twice or larger than the smallest cell constituting the two-dimensional code.

 10. The two-dimensional code according to any one of claims 1 to 9, wherein

25 the two-dimensional code comprises four or more of the different position detection patterns that can be individually detected from an image,

 the four or more different position detection patterns include four position detection
30 patterns composed of:

 a square first position detection pattern;
 a square second position detection pattern, which is smaller than the first position detection pattern; and

35 rectangular third and fourth position detection patterns,

 the long side of the rectangular third

position detection pattern and that of the rectangular fourth position detection pattern extend in different directions, and

5 the four position detection patterns are arranged on four corners of the two-dimensional matrix.

11. The two-dimensional code according to claim 10, wherein

10 the first and second position detection patterns are arranged on the opposite diagonal corners,

the third and fourth position detection patterns are arranged on the opposite diagonal corners,

15 the long side of the third position detection pattern and that of the fourth position detection pattern have the same length as the side of the first position detection pattern,

the short side of the third position detection pattern and that of the fourth position detection pattern have the same length as the side of the second position detection pattern,

20 one of the short sides of the third position detection pattern and that of the fourth position detection pattern are arranged on the extension of the side of the first position detection pattern, and

25 one of the long sides of the third position detection pattern and that of the fourth position detection pattern is arranged on the extension of the side of the second position detection pattern.

12. The two-dimensional code according to claim 10 or 11, wherein

30 the first and second position detection patterns each have a single square frame, and

the third and fourth position detection patterns each have a single rectangular frame.

35 13. The two-dimensional code according to any one of claims 10 to 12, wherein

the first position detection pattern has a single square frame and a square arranged therein,

the second position detection pattern has a single square frame, and

the third and fourth position detection patterns each have a single rectangular frame.

5 14. A two-dimensional code, comprising cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix,

 wherein the two-dimensional code comprises two different position detection patterns that are
10 arranged at opposite diagonal corners and can be individually detected from an image.

15 15. The two-dimensional code according to claim 14, wherein the two different position detection patterns are surrounded by light cells.

15 16. The two-dimensional code according to claim 14 or 15, wherein the two different position detection patterns are composed of a combination of a square and a rectangle.

20 17. A two-dimensional code, comprising cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix,
 wherein the two-dimensional code comprises three or more different position detection patterns that are surrounded by light cells.

25 18. A method of analyzing a two-dimensional code from a taken image of the two-dimensional code, the two-dimensional code comprising:

 cells representing binary-coded data that are arranged as a pattern in the form of a two-
30 dimensional matrix; and

 three different position detection patterns that can be individually detected from an image,
 wherein the method comprises, when the three different position detection patterns are
35 identified:

 estimating a fourth position at which no position detection pattern is arranged, based on the

identified three different position detection patterns;
and

converting the coordinates of the two-
dimensional code based on the positional relationships of
at least four positions, including the thus estimated
fourth position and the identified three different
position detection patterns, and

when two of the three different position
detection patterns, which are arranged at opposite
diagonal corners, are identified:

estimating the position of the remaining
position detection pattern and a fourth position at which
no position detection pattern is arranged, based on the
positional relationships of the identified two position
detection patterns; and

converting the coordinates of the two-
dimensional code based on the positional relationships of
at least four positions, including the thus estimated
position of the remaining position detection pattern and
the fourth position as well as the positions of the
identified two different position detection patterns.

19. (Amended) The method of analyzing a two-
dimensional code according to claim 18, wherein

the two-dimensional code comprises a
position correction pattern, and

the method comprises, when the three
different position detection patterns and the position
correction pattern are identified:

estimating a fourth position at which no
position detection pattern is arranged, based on the
identified three different position detection patterns
and position correction pattern; and

converting the coordinates of the two-
dimensional code based on the positional relationships of
at least four positions, including the thus estimated
fourth position and the identified three different
position detection patterns, and

when two of the three different position detection patterns, which are arranged at opposite diagonal corners, and the position correction pattern are identified:

5 estimating the position of the remaining position detection pattern and a fourth position at which no position detection pattern is arranged, based on the identified two position detection patterns and position correction pattern; and

10 converting the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the remaining position detection pattern and fourth position as well as the positions of the
15 identified two different position detection patterns.

20. A method of analyzing a two-dimensional code from an image taken of the two-dimensional code, the two-dimensional code comprising:

20 cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix; and

 four or more different position detection patterns that can be individually detected from an image, wherein the method comprises, when four or
25 more of the different position detection patterns are identified:

 converting the coordinates of the two-dimensional code based on the positional relationships of at least four of the position detection patterns, and

30 when two or three of the four or more different position detection patterns are identified:

 estimating the position(s) of the remaining position detection pattern(s) based on the positional relationships of the identified two or three
35 position detection patterns, and

 converting the coordinates of the two-dimensional code based on the positional relationships of

at least four of the position detection patterns,
including the thus estimated position(s) of the position
detection pattern(s).

21. The method of analyzing a two-dimensional code
5 according to claim 20, wherein

the two-dimensional code comprises a
position correction pattern, and

the identified position correction pattern
is utilized for estimating the position(s) of the
10 remaining position detection pattern(s) based on the
positional relationships of the identified two or three
position detection patterns.

22. A program, which controls a computer to analyze
a two-dimensional code from an image taken of the two-
15 dimensional code, the two-dimensional code comprising:

cells representing binary-coded data that
are arranged as a pattern in the form of a two-
dimensional matrix; and

three different position detection
20 patterns that can be individually detected from an image,

wherein the program controls the computer
such that the computer, when three different position
detection patterns are identified, estimates a fourth
position at which no position detection pattern is
25 arranged, based on the identified three different
position detection patterns; and converts the coordinates
of the two-dimensional code based on the positional
relationships of at least four positions, including the
thus estimated fourth position and the identified three
30 different position detection patterns, and

when two of the three different position
detection patterns, which are arranged at opposite
diagonal corners, are identified, estimates the position
of the remaining position detection pattern and a fourth
35 position at which no position detection pattern is
arranged, based on the positional relationships of the
identified two position detection patterns; and converts

the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the remaining position detection pattern and the fourth position as well as the positions of the identified two different position detection patterns.

23. The program according to claim 22, wherein the two-dimensional code comprises a position correction pattern, and

the program controls the computer such that the computer, when the three different position detection patterns and the position correction pattern are identified, estimates a fourth position at which no position detection pattern is arranged, based on the identified three different position detection patterns and position correction pattern; and converts the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated fourth position and the identified three different position detection patterns, and

when two of the three different position detection patterns, which are arranged at opposite diagonal corners, and the position correction pattern are identified, estimates the position of the remaining position detection pattern and a fourth position at which no position detection pattern is arranged, based on the identified two position detection patterns and position correction pattern; and converts the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the remaining position detection pattern and fourth position as well as the positions of the identified two different position detection patterns.

24. A program, which controls a computer to analyze a two-dimensional code from an image taken of the two-

dimensional code, the two-dimensional code comprising:

cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix; and

5 four or more different position detection patterns that can be individually detected from an image, wherein the program controls the computer such that the computer, when four or more of the different position detection patterns are identified, 10 converts the coordinates of the two-dimensional code based on the positional relationships of at least four of the position detection patterns, and

when two or three of the four or more different position detection patterns are identified, 15 estimates the position(s) of the remaining position detection pattern(s) based on the positional relationships of the identified two or three position detection patterns; and converts the coordinates of the two-dimensional code based on the positional 20 relationships of at least four of the position detection patterns, including the thus estimated position(s) of the position detection pattern(s).

25. The program according to claim 24, wherein the two-dimensional code comprises a 25 position correction pattern, and the program controls the computer such that the computer, by utilizing the position correction pattern, estimates the position(s) of the remaining position detection pattern(s) based on the positional 30 relationships of the identified two or three position detection patterns.

26. A system for generating the two-dimensional code according to claim 1, the system comprising: 35 a position detection pattern-arranging means for arranging the three or more different position detection patterns, which can be individually detected from an image, at prescribed positions of a two-

dimensional matrix;

a base information-arranging means for
arranging, in a region of the two-dimensional matrix
outside the regions where the three or more different
5 position detection patterns are arranged, a base
information region where base information required for
analysis of the two-dimensional code is recorded; and

a message data-arranging means for
sequentially arranging message-recorded data in a region
10 of the two-dimensional matrix outside the regions where
the three or more different position detection patterns
and the base information region are arranged.

27. The system of generating a two-dimensional code
according to claim 26, wherein the position detection
15 pattern-arranging means arranges, at the prescribed
positions of the two-dimensional matrix, the four or more
different position detection patterns that can be
individually detected from an image.

What is claimed is:

1. A two-dimensional code, comprising cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix,
wherein the two-dimensional code comprises three or more different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image, and
each of the three or more different position detection patterns (12A-12D, 52A-52D) has a tetragonal external shape, or has a circular external shape, or has an elliptical external shape, or has a right triangle external shape, or has a first rectangle and a second rectangle wherein the first rectangle and the second rectangle intersect perpendicularly each other at the position of the center of gravity, or has a third rectangle and a fourth rectangle wherein the fourth rectangle extends perpendicularly from the end part of the third rectangle.
2. The two-dimensional code according to claim 1, comprising four or more of the different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image.
3. The two-dimensional code according to claim 1 or 2, comprising one or more position correction patterns (54A, 54B).
4. The two-dimensional code according to any one of claims 1 to 3, wherein each of the three or more different position detection patterns (12A-12D, 52A-52D) has a tetragonal external shape and the three or more different position detection patterns (12A-12D, 52A-52D) are composed of a combination of a square(s) and a rectangle(s).
5. The two-dimensional code according to any one of claims 1 to 4, wherein
the region of the two-dimensional matrix that excludes the parts of the position detection patterns (12A-12D, 52A-52D) is divided into a plurality of blocks (15-19, 22, 55-59) having the same size, and
the two-dimensional matrix comprises a light or dark separation space (23) between adjacent blocks (15-19, 22, 55-59).

6. The two-dimensional code according to claim 5, wherein the position detection patterns (12A-12D, 52A-52D) each have an area larger than the blocks (15-19, 22, 55-59).
7. The two-dimensional code according to claim 6, wherein
the blocks (15-19, 22, 55-59) each have a size of 3×3 cells,
the separation space (23) has a width of one cell, and
the position detection patterns (12A-12D, 52A-52D) each have a lateral width of four or more cells and a vertical length of four or more cells.
8. The two-dimensional code according to any one of claims 1 to 3, wherein
each of the three or more different position detection patterns (12A-12D, 52A-52D) has a tetragonal external shape, or has a circular external shape, or has an elliptical external shape, or has a right triangle external shape, and
at least two of the three or more different position detection patterns (12A-12D, 52A-52D) are in the form of a frame comprising an identification space therein, and
the identification space is a space twice or larger than the smallest cell constituting the two-dimensional code.
9. The two-dimensional code according to any one of claims 1 to 3, wherein
the two-dimensional code comprises four or more of the different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image,
each of the four or more different position detection patterns (12A-12D, 52A-52D) has a tetragonal external shape, or has a circular external shape, or has an elliptical external shape, or has a right triangle external shape
at least three of the four or more different position detection patterns (12A-12D, 52A-52D) are in the form of a frame comprising an identification space therein, and
the identification space is a space twice or larger than the smallest cell constituting the two-dimensional code.
10. The two-dimensional code according to any one of claims 1 to 7, wherein
the two-dimensional code comprises four or more of the different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image,

each of the four or more different position detection patterns (12A-12D, 52A-52D) has a tetragonal external shape,

the four or more different position detection patterns (12A-12D, 52A-52D) include four position detection patterns composed of:

a square first position detection pattern (12A, 52A);

a square second position detection pattern (12D, 52D), which is smaller than the first position detection pattern; and

rectangular third and fourth position detection patterns (12B, 52B, 12C, 52C),

the long side of the rectangular third position detection pattern (12B, 52B) and that of the rectangular fourth position detection pattern (12C, 52C) extend in different directions, and

the four position detection patterns (12A-12D, 52A-52D) are arranged on four corners of the two-dimensional matrix.

11. The two-dimensional code according to claim 10, wherein

the first (12A, 52A) and second (12D, 52D) position detection patterns are arranged on the opposite diagonal corners,

the third (12B, 52B) and fourth (12C, 52C) position detection patterns are arranged on the opposite diagonal corners,

the long side of the third position detection pattern (12B, 52B) and that of the fourth position detection pattern (12C, 52C) have the same length as the side of the first position detection pattern,

the short side of the third position detection pattern (12B, 52B) and that of the fourth position detection pattern (12C, 52C) have the same length as the side of the second position detection pattern (12D, 52D),

one of the short sides of the third position detection pattern (12B, 52B) and that of the fourth position detection pattern (12C, 52C) are arranged on the extension of the side of the first position detection pattern (12A, 52A), and

one of the long sides of the third position detection pattern (12B, 52B) and that of the fourth position detection pattern (12C, 52C) is arranged on the extension of the side of the second position detection pattern (12D, 52D).

12. The two-dimensional code according to claim 10 or 11, wherein

the first (52A) and second (52D) position detection patterns each have a single square frame, and

the third (52B) and fourth (52C) position detection patterns each have a single

rectangular frame.

13. The two-dimensional code according to any one of claims 10 to 12, wherein the first position detection pattern (12A) has a single square frame and a square arranged therein,

the second position detection pattern (12D) has a single square frame, and the third and fourth position detection patterns (12B, 12C) each have a single rectangular frame.

14. A two-dimensional code, comprising cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix,

wherein the two-dimensional code comprises three or more different position detection patterns (12A-12D, 52A-52D) that are surrounded by light cells, and

each of the three or more different position detection patterns (12A-12D, 52A-52D) has a tetragonal external shape, or has a circular external shape, or has an elliptical external shape, or has a right triangle external shape, or has a first rectangle and a second rectangle wherein the first rectangle and the second rectangle intersect perpendicularly each other at the position of the center of gravity, or has a third rectangle and a fourth rectangle wherein the fourth rectangle extends perpendicularly from the end part of the third rectangle.

15. A method of analyzing a two-dimensional code from an image taken of the two-dimensional code, the two-dimensional code comprising:

cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix;

three different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image, each of the three or more different position detection patterns (12A-12D, 52A-52D) having a tetragonal external shape, or having a circular external shape, or having an elliptical external shape, or having a right triangle external shape, or having a first rectangle and a second rectangle wherein the first rectangle and the second rectangle intersect perpendicularly each other at the position of the center of gravity, or having a third rectangle and a fourth rectangle wherein the fourth rectangle extends perpendicularly from the end part of the third rectangle, and

wherein the method comprises, when the three different position detection patterns (12A-12D, 52A-52D) are identified:

estimating a fourth position at which no position detection pattern is arranged,

based on the identified three different position detection patterns (12A-12D, 52A-52D); and

converting the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated fourth position and the identified three different position detection patterns (12A-12D, 52A-52D), and

when two of the three different position detection patterns (12A-12D, 52A-52D), which are arranged at opposite diagonal corners, are identified:

estimating the position of the remaining position detection pattern and a fourth position at which no position detection pattern is arranged, based on the positional relationships of the identified two position detection patterns (12A-12D, 52A-52D); and

converting the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the remaining position detection pattern and the fourth position as well as the positions of the identified two different position detection patterns (12A-12D, 52A-52D).

16. The method of analyzing a two-dimensional code according to claim 15, wherein

the two-dimensional code comprises a position correction pattern (54A, 54B), and

the method comprises, when the three different position detection patterns (12A-12D, 52A-52D) and the position correction pattern (54A, 54B) are identified:

estimating a fourth position at which no position detection pattern is arranged, based on the identified three different position detection patterns (12A-12D, 52A-52D) and position correction pattern (54A, 54B); and

converting the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated fourth position and the identified three different position detection patterns (12A-12D, 52A-52D), and

when two of the three different position detection patterns (12A-12D, 52A-52D), which are arranged at opposite diagonal corners, and the position correction pattern (54A, 54B) are identified:

estimating the position of the remaining position detection pattern and a fourth position at which no position detection pattern is arranged, based on the identified two position detection patterns (12A-12D, 52A-52D) and position correction pattern (54A, 54B); and

converting the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the

remaining position detection pattern and fourth position as well as the positions of the identified two different position detection patterns (12A-12D, 52A-52D).

17. A method of analyzing a two-dimensional code from an image taken of the two-dimensional code, the two-dimensional code comprising:

cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix; and

four or more different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image, each of the three or more different position detection patterns (12A-12D, 52A-52D) having a tetragonal external shape, or having a circular external shape, or having an elliptical external shape, or having a right triangle external shape, or having a first rectangle and a second rectangle wherein the first rectangle and the second rectangle intersect perpendicularly each other at the position of the center of gravity, or having a third rectangle and a fourth rectangle wherein the fourth rectangle extends perpendicularly from the end part of the third rectangle,

wherein the method comprises, when four or more of the different position detection patterns (12A-12D, 52A-52D) are identified:

converting the coordinates of the two-dimensional code based on the positional relationships of at least four of the position detection patterns (12A-12D, 52A-52D), and

when two or three of the four or more different position detection patterns (12A-12D, 52A-52D) are identified:

estimating the position(s) of the remaining position detection pattern(s) based on the positional relationships of the identified two or three position detection patterns (12A-12D, 52A-52D), and

converting the coordinates of the two-dimensional code based on the positional relationships of at least four of the position detection patterns, including the thus estimated position(s) of the position detection pattern(s).

18. The method of analyzing a two-dimensional code according to claim 17, wherein

the two-dimensional code comprises a position correction pattern (54A, 54B), and

the identified position correction pattern (54A, 54B) is utilized for estimating the position(s) of the remaining position detection pattern(s) based on the positional relationships of the identified two or three position detection patterns (12A-12D,

52A-52D).

19. A program, which controls a computer to analyze a two-dimensional code from an image taken of the two-dimensional code, the two-dimensional code comprising:

cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix; and

three different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image, each of the three or more different position detection patterns (12A-12D, 52A-52D) having a tetragonal external shape, or having a circular external shape, or having an elliptical external shape, or having a right triangle external shape, or having a first rectangle and a second rectangle wherein the first rectangle and the second rectangle intersect perpendicularly each other at the position of the center of gravity, or having a third rectangle and a fourth rectangle wherein the fourth rectangle extends perpendicularly from the end part of the third rectangle,

wherein the program controls the computer such that the computer, when three different position detection patterns (12A-12D, 52A-52D) are identified, estimates a fourth position at which no position detection pattern is arranged, based on the identified three different position detection patterns (12A-12D, 52A-52D); and converts the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated fourth position and the identified three different position detection patterns (12A-12D, 52A-52D), and

when two of the three different position detection patterns (12A-12D, 52A-52D), which are arranged at opposite diagonal corners, are identified, estimates the position of the remaining position detection pattern and a fourth position at which no position detection pattern is arranged, based on the positional relationships of the identified two position detection patterns (12A-12D, 52A-52D); and converts the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the remaining position detection pattern and the fourth position as well as the positions of the identified two different position detection patterns (12A-12D, 52A-52D).

20. The program according to claim 19, wherein

the two-dimensional code comprises a position correction pattern (54A, 54B),
and

the program controls the computer such that the computer, when the three different position detection patterns (12A-12D, 52A-52D) and the position correction

pattern (54A, 54B) are identified, estimates a fourth position at which no position detection pattern is arranged, based on the identified three different position detection patterns (12A-12D, 52A-52D) and position correction pattern (54A, 54B); and converts the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated fourth position and the identified three different position detection patterns (12A-12D, 52A-52D), and

when two of the three different position detection patterns (12A-12D, 52A-52D), which are arranged at opposite diagonal corners, and the position correction pattern (54A, 54B) are identified, estimates the position of the remaining position detection pattern and a fourth position at which no position detection pattern is arranged, based on the identified two position detection patterns (12A-12D, 52A-52D) and position correction pattern (54A, 54B); and converts the coordinates of the two-dimensional code based on the positional relationships of at least four positions, including the thus estimated position of the remaining position detection pattern and fourth position as well as the positions of the identified two different position detection patterns (12A-12D, 52A-52D).

21. A program, which controls a computer to analyze a two-dimensional code from an image taken of the two-dimensional code, the two-dimensional code comprising:

cells representing binary-coded data that are arranged as a pattern in the form of a two-dimensional matrix; and

four or more different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image, each of the three or more different position detection patterns (12A-12D, 52A-52D) having a tetragonal external shape, or having a circular external shape, or having an elliptical external shape, or having a right triangle external shape, or having a first rectangle and a second rectangle wherein the first rectangle and the second rectangle intersect perpendicularly each other at the position of the center of gravity, or having a third rectangle and a fourth rectangle wherein the fourth rectangle extends perpendicularly from the end part of the third rectangle,

wherein the program controls the computer such that the computer, when four or more of the different position detection patterns (12A-12D, 52A-52D) are identified, converts the coordinates of the two-dimensional code based on the positional relationships of at least four of the position detection patterns (12A-12D, 52A-52D), and

when two or three of the four or more different position detection patterns (12A-12D, 52A-52D) are identified, estimates the position(s) of the remaining position

detection pattern(s) based on the positional relationships of the identified two or three position detection patterns (12A-12D, 52A-52D); and converts the coordinates of the two-dimensional code based on the positional relationships of at least four of the position detection patterns, including the thus estimated position(s) of the position detection pattern(s) (12A-12D, 52A-52D).

22. The program according to claim 21, wherein
the two-dimensional code comprises a position correction pattern (54A, 54B),
and

the program controls the computer such that the computer, by utilizing the position correction pattern (54A, 54B), estimates the position(s) of the remaining position detection pattern(s) based on the positional relationships of the identified two or three position detection patterns (12A-12D, 52A-52D).

23. A system for generating the two-dimensional code according to claim 1, the system comprising:

a position detection pattern-arranging means for arranging the three or more different position detection patterns (12A-12D, 52A-52D), which can be individually detected from an image, at prescribed positions of a two-dimensional matrix;

a base information-arranging means for arranging, in a region of the two-dimensional matrix outside the regions where the three or more different position detection patterns (12A-12D, 52A-52D) are arranged, a base information region where base information required for analysis of the two-dimensional code is recorded; and

a message data-arranging means for sequentially arranging message-recorded data in a region of the two-dimensional matrix outside the regions where the three or more different position detection patterns (12A-12D, 52A-52D) and the base information region are arranged.

24. The system of generating a two-dimensional code according to claim 23, wherein the position detection pattern-arranging means arranges, at the prescribed positions of the two-dimensional matrix, the four or more different position detection patterns (12A-12D, 52A-52D) that can be individually detected from an image.

25. The two-dimensional code according to any one of claims 1 to 13, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection

patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

26. The two-dimensional code according to claim 14, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

27. The two-dimensional code according to claim 15 or 16, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

28. The two-dimensional code according to claim 17 or 18, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

29. The two-dimensional code according to claim 19 or 20, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

30. The two-dimensional code according to claim 21 or 22, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

31. The two-dimensional code according to claim 23 or 24, wherein the shapes or the external shapes or the sizes of at least two of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated, or at least two of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated and the external shapes of the at least two of the position detection patterns (12A-12D, 52A-52D) are accorded.

32. The two-dimensional code according to any one of claims 1 to 13, wherein the shapes or the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.

33. The two-dimensional code according to claim 14, wherein the shapes or the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.

34. The two-dimensional code according to claim 15 or 16, wherein the shapes or

the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.

35. The two-dimensional code according to claim 17 or 18, wherein the shapes or the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.

36. The two-dimensional code according to claim 19 or 20, wherein the shapes or the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.

37. The two-dimensional code according to claim 21 or 22, wherein the shapes or the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.

38. The two-dimensional code according to claim 23 or 24, wherein the shapes or

the external shapes or the sizes of at least three of the position detection patterns (12A-12D, 52A-52D) do not accord even if one of the position detection patterns is rotated or two of the position detection patterns are rotated, or at least three of the position detection patterns (12A-12D, 52A-52D) have different line width ratios when one of the position detection patterns is rotated or two of the position detection patterns are rotated and the external shapes of the at least three of the position detection patterns (12A-12D, 52A-52D) are accorded.