

Japanese Society of Oral and Maxillofacial Radiology Standards

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DENTAL IMAGE LAYOUT FOR INTRA-ORAL RADIOGRAPHY

Japanese Society of Oral and Maxillofacial Radiology

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1. Scope

This standard defines Dental Image Layout for Intra-Oral Radiology.

Note: This standard defines the typical image layout, and does not limit the display image layout other than provisions.

2. Related Standards

The standards related this standard are as follows;

JIS T 60601-2-65:2014, Medical electrical equipment - Part 2-65: Particular requirements for the basic safety and essential performance of dental intra-oral X-ray equipment

Note: Corresponding international standard: IEC 60601-2-65:2012, Medical electrical equipment - Part 2-65: Particular requirements for the basic safety and essential performance of dental intra-oral X-ray equipment

ISO 3665:2011, Photography - Intra-oral dental radiographic film and film packets - Manufacturer Specifications

ISO 3950:2009, Dentistry - Designation system for teeth and areas of the oral cavity

3. Terms and definitions

The terms of this standard are defined as follows;

3.1 Intra – Oral

Dental Radiography that is located the film, or whole or part of the X-ray detector to Intra-Oral.

Ref ; Intra-Oral IEC 60601-2-65:2012, JIS T 60601-2-65:2014

3.2 Dental Image Layout

The location, orientation of each image to locate the plural number of Intra-Oral Radiology images. In general, this is the image layout for the plural number of images, but it allows to locate a image.

3.3 Teeth Designation

The tooth number represented with 2 digits, defined in ISO 3950. The significant digit means the Jaw number , lower digit means the tooth number in the Jaw, and these are combined

Permanent Teeth

	Right	Left
Maxillary	18 17 16 15 14 13 12 11	21 22 23 24 25 26 27 28
Mandibular	48 47 46 45 44 43 42 41	31 32 33 34 35 36 37 38

Deciduous Teeth

	Right	Left
Maxillary	55 54 53 52 51	61 62 63 64 65
Mandibular	85 84 83 82 81	71 72 73 74 75

Ref : ISO 3950:2009

4. Dental Image Layout

The typical image layout of plural number of Intra-Oral Radiology images, and teeth designation of each image are shown in Table 1. If there are some images that have not taken, each image location shall keep in specified location (the space of images that have not been taken shall not be filled). The magnification rate of each image shall be same on the same image layout (This standard does not allow to change the magnification factor each image on the same image layout). Even if the several size images mapped on a image layout, the magnification rate of each image shall be same, shall not magnify, or minify the some images.

Note 1 ID is composed DL-XYYYZ.

DL = abbreviation of DENTAL IMAGE LAYOUT

X = Large Classification (S = standard, P = pedodontic, C = occlusal, N=non-standard)

Y = The sequential number beginning with 001 of each large classification(001, 002, 003, ...)

Z = The subordinate sequential number to Y, and show the minor differences (ex. the part of image orientation difference ...etc.) It begins with A (A, B, C, ...). If there are no minor differences, initial value, A is provided.

Note 2 The central number of each image on the image layout means image location code of each image.

Image location code is composed the following 2 digits.

Significant digit = Jaw region (0 = Maxilla, 1 = Mandible, 2 = Both)

Lower digit = Detail location

The hexadecimal sequential number, the most of the image on the left is set to 0.

Note 3 Examination Classification Codes are as follows;

Examination Classification	Code Table
Periapical radiography	PA
Bitewing radiography	BW
Occlusal radiography	OCC

Note 4 Image Size codes are as follows;

It is necessary to care the combination of different image sizes by the image layout.

Image Size	Code Table
Pedodontic Size (approximately ISO3665 size number 0, 1A, 1)	PEDO
Standard Size (approximately ISO3665 size number 2)	STD
Occlusal Size (approximately ISO3665 size number 4, 4A, 5)	OCC

Remarks)

The purpose of image size on this standard is classified into 3 types depending on the dental imaging method. "Image size" is not requirements on this standard. ISO3665 is the standard of film size. The size of imaging plate and imaging devise is close dimension of ISO3665, but it does not match perfectly.

Note 5 Reference information is the supplemental information to understand this image layout standard. Reference information is not include this standard.

Please refer to the commentary in details.

Note 6 In case of Occlusal, the display method is changed based on the direction of the dental arch. Other than the display method of table 1, -UXLY shall be provided behind ID

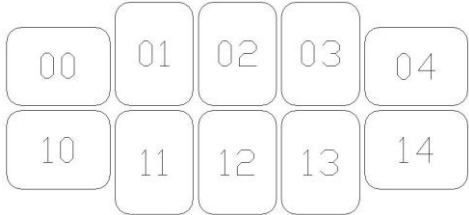
U = abbreviation of Maxilla dental arch

X = Maxilla dental arch (0 = no image, 1 = upward, 2 = downward)

L = abbreviation of Mandible dental arch

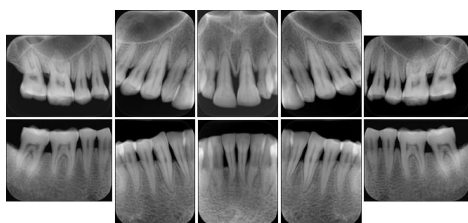
Y = Mandible dental arch (0 = no image, 1 = upward, 2 = downward)

Table 1 - DENTAL IMAGE LAYOUT

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-S001A	10 standard layout A		00	PA	STD
			01		
			02		
			03		
			04		
			10		
			11		
			12		
			13		
			14		

Reference Information:

DL-S001A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	17, 16, 15	NONE	10	NONE
01	14, 13, 12			
02	12, 11, 21, 22			
03	22, 23, 24			
04	25, 26, 27			
10	47, 46, 45			
11	44, 43, 42			
12	42, 41, 31, 32			
13	32, 33, 34			
14	35, 36, 37			

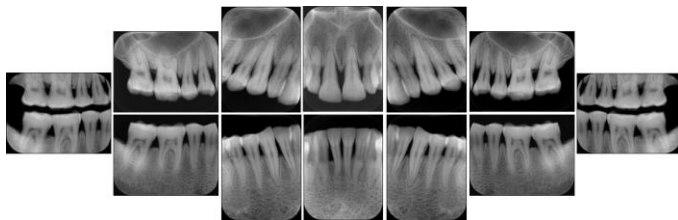
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S002A	10 standard +2 bitewing layout A	<p>The diagram shows a grid of 14 standard dental images arranged in two rows of seven. The top row contains images 00, 01, 02, 03, and 04. The bottom row contains images 10, 11, 12, 13, and 14. To the left of the grid is image 20, and to the right is image 24. All images are enclosed in rounded rectangular boxes.</p>

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
10		
11		
12		
13		
14		
20	BW	
24		

Reference Information:

DL-S002A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code	
00	17, 16, 15	NONE	10	NONE	
01	14, 13, 12				
02	12, 11, 21, 22				
03	22, 23, 24				
04	25, 26, 27				
10	47, 46, 45				
11	44, 43, 42				
12	42, 41, 31, 32				
13	32, 33, 34				
14	35, 36, 37				
20	17, 16, 15, 47, 46, 45				PJ-BW
24	25, 26, 27, 35, 36, 37				

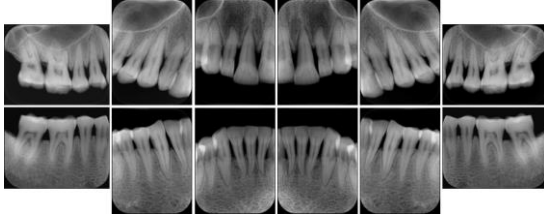
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S003A	12 standard layout A	

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
05		
10		
11		
12		
13		
14		
15		

Reference Information:

DL-S003A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	17, 16, 15	NONE	12	NONE
01	14, 13, 12			
02	12, 11			
03	21, 22			
04	22, 23, 24			
05	25, 26, 27			
10	47, 46, 45			
11	44, 43, 42			
12	42, 41			
13	31, 32			
14	32, 33, 34			
15	35, 36, 37			

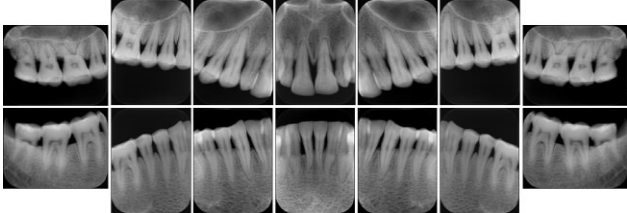
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S004A	14 standard layout A	<p>The diagram shows a 2x7 grid of rounded rectangular boxes. The top row contains boxes numbered 00, 01, 02, 03, 04, 05, and 06 from left to right. The bottom row contains boxes numbered 10, 11, 12, 13, 14, 15, and 16 from left to right.</p>

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
05		
06		
10		
11		
12		
13		
14		
15		
16		

Reference Information:

DL-S004A :



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	14	NONE
01	16, 15, 14			
02	14, 13, 12			
03	12, 11, 21, 22			
04	22, 23, 24			
05	24, 25, 26			
06	26, 27, 28			
10	48, 47, 46			
11	46, 45, 44			
12	44, 43, 42			
13	42, 41, 31, 32			
14	32, 33, 34			
15	34, 35, 36			
16	36, 37, 38			

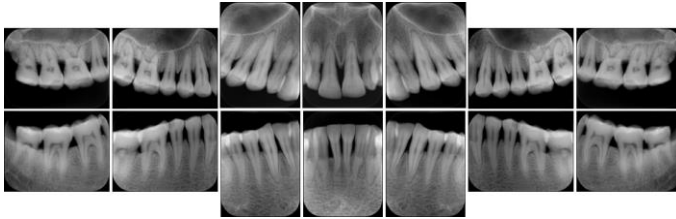
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S004B	14 standard layout B	

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
05		
06		
10		
11		
12		
13		
14		
15		
16		

Reference Information:

DL-S004B :



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	14	NONE
01	16, 15, 14			
02	14, 13, 12			
03	12, 11, 21, 22			
04	22, 23, 24			
05	24, 25, 26			
06	26, 27, 28			
10	48, 47, 46			
11	46, 45, 44			
12	44, 43, 42			
13	42, 41, 31, 32			
14	32, 33, 34			
15	34, 35, 36			
16	36, 37, 38			

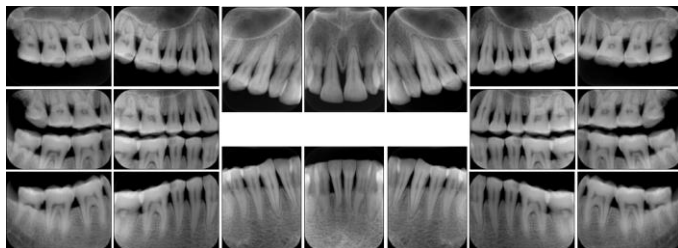
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT																					
DL-S005A	14 standard +4 bitewing layout A	<table border="1" style="border-collapse: collapse; text-align: center; width: 100%;"> <tr> <td>00</td><td>01</td><td>02</td><td>03</td><td>04</td><td>05</td><td>06</td> </tr> <tr> <td>20</td><td>21</td><td></td><td></td><td></td><td>25</td><td>26</td> </tr> <tr> <td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td> </tr> </table>	00	01	02	03	04	05	06	20	21				25	26	10	11	12	13	14	15	16
00	01	02	03	04	05	06																	
20	21				25	26																	
10	11	12	13	14	15	16																	

Pos. Code	Exam. Class.	Image Size		
00	PA	STD		
01				
02				
03				
04				
05				
06				
10				
11				
12				
13				
14				
15				
16				
20			BW	STD
21				
25				
26				

Reference Information:

DL-S005A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code			
00	18, 17, 16	NONE	14	NONE			
01	16, 15, 14						
02	14, 13, 12						
03	12, 11, 21, 22						
04	22, 23, 24						
05	24, 25, 26						
06	26, 27, 28						
10	48, 47, 46						
11	46, 45, 44						
12	44, 43, 42						
13	42, 41, 31, 32						
14	32, 33, 34						
15	34, 35, 36						
16	36, 37, 38						
20	18, 17, 16, 48, 47, 46				PJ-BW		
21	15, 14, 13, 45, 44, 43						
25	23, 24, 25, 33, 34, 35						
26	26, 27, 28, 36, 37, 38						

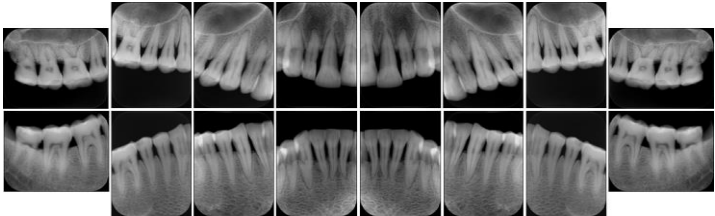
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S006A	16 standard layout A	<p>The diagram shows a grid of 18 rounded rectangular boxes arranged in two rows of eight. The top row contains boxes numbered 00 through 07 from left to right. The bottom row contains boxes numbered 10 through 17 from left to right. There is a gap between the two rows, with no box in the middle position.</p>

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
05		
06		
07		
10		
11		
12		
13		
14		
15		
16		
17		

Reference Information:

DL-S006A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	16	NONE
01	16, 15, 14			
02	14, 13, 12			
03	12, 11			
04	21, 22			
05	22, 23, 24			
06	24, 25, 26			
07	26, 27, 28			
10	48, 47, 46			
11	46, 45, 44			
12	44, 43, 42			
13	42, 41			
14	31, 32			
15	32, 33, 34			
16	34, 35, 36			
17	36, 37, 38			

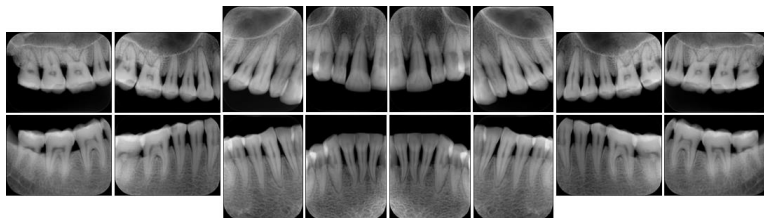
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S006B	16 standard layout B	<p>The diagram shows 18 numbered positions arranged in two rows of eight. The top row contains positions 00 through 07, and the bottom row contains positions 10 through 17. Each position is represented by a rounded rectangular box.</p>

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
05		
06		
07		
10		
11		
12		
13		
14		
15		
16		
17		


Reference Information:

DL-S006B:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	16	NONE
01	16, 15, 14			
02	14, 13, 12			
03	12, 11			
04	21, 22			
05	22, 23, 24			
06	24, 25, 26			
07	26, 27, 28			
10	48, 47, 46			
11	46, 45, 44			
12	44, 43, 42			
13	42, 41			
14	31, 32			
15	32, 33, 34			
16	34, 35, 36			
17	36, 37, 38			

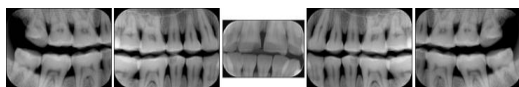
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S007A	5 bitewing layout A	

Pos. Code	Exam. Class.	Image Size
20	BW	STD
21		
22		PEDO
23		STD
24		

Reference Information:

DL-S007A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
20	18, 17, 16, 48, 47, 46	PJ-BW	10	NONE
21	15, 14, 13, 45, 44, 43			
22	12, 11, 21, 22, 32, 31, 41, 42			
23	23, 24, 25, 33, 34, 35			
24	26, 27, 28, 36, 37, 38			

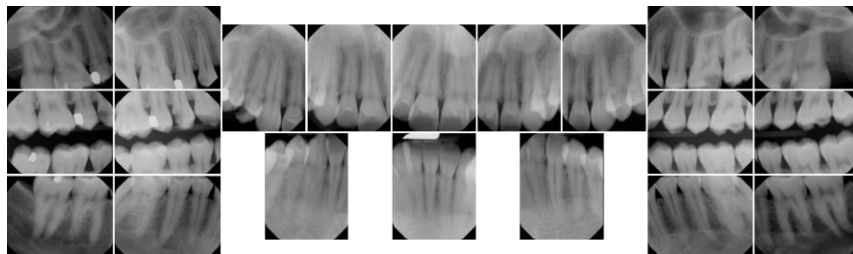
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S008A	16 standard +4 bitewing layout A	

Pos. Code	Exam. Class.	Image Size
00	PA	STD
01		
02		
03		
04		
05		
06		
07		
08		
10		
11		
13		
14		
15		
17		
18		
20		
21		
27		
28		

Reference Information:

DL-S008A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code			
00	18, 17, 16, 15	NONE	18	NONE			
01	17, 16, 15, 14, 13						
02	15, 14, 13, 12						
03	14, 13, 12, 11						
04	13, 12, 11, 21, 22, 23						
05	21, 22, 23, 24						
06	22, 23, 24, 25						
07	23, 24, 25, 26, 27						
08	25, 26, 27, 28						
10	48, 47, 46, 45, 44, 43						
11	47, 46, 45, 44, 43						
13	45, 44, 43, 42						
14	42, 41, 31, 32						
15	32, 33, 34, 35						
17	33, 34, 35, 36, 37						
18	35, 36, 37, 38						
20	18, 17, 16, 15, 48, 47, 46, 45				PJ-BW		
21	17, 16, 15, 14, 13, 47, 46, 45, 44, 43						
27	23, 24, 25, 26, 27, 33, 34, 35, 36, 37						
28	25, 26, 27, 28, 35, 36, 37, 38						

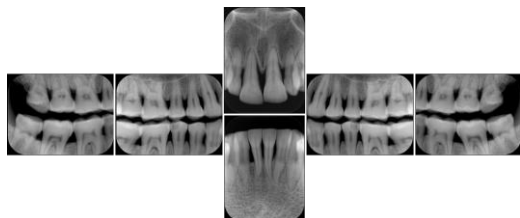
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-S009A	2 standard +4 bitewing layout A	<p>The diagram shows a central vertical column with two boxes labeled '02' (top) and '12' (bottom). To the left of this column are two boxes labeled '20' and '21'. To the right are two boxes labeled '23' and '24'.</p>

Pos. Code	Exam. Class.	Image Size
02	PA	STD
12		
20	BW	
21		
22		
23		

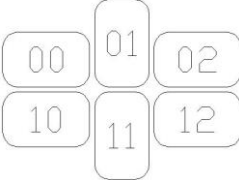
Reference Information:

DL-S009A:



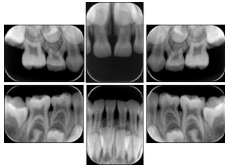
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
02	12, 11, 21, 22	NONE	10	NONE
12	42, 41, 31, 32			
20	18, 17, 16, 48, 47, 46	PJ-BW		
21	15, 14, 13, 45, 44, 43			
22	23, 24, 25, 33, 34, 35			
23	26, 27, 28, 36, 37, 38			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P001A	6 standard pedodontic layout A		00	PA	PEDO
			01		
			02		
			10		
			11		
			12		

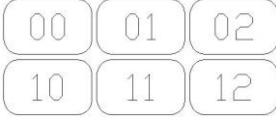
Reference Information:

DL-P001A:



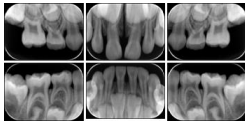
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P001B	6 standard pedodontic layout B		00	PA	PEDO
			01		
			02		
			10		
			11		
			12		

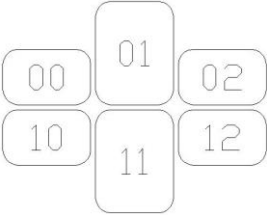
Reference Information:

DL-P001B:



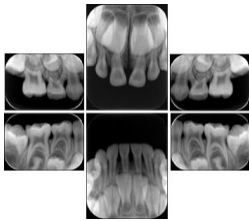
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P001C	6 standard pedodontic layout C		00	PA	PEDO
			01		STD
			02		PEDO
			10		
			11		STD
			12		PEDO

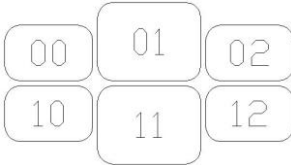
Reference Information:

DL-P001C:



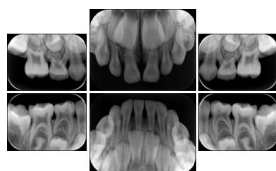
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	54, 53, 52	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P001D	6 standard pedodontic layout D		00	PA	PEDO
			01		STD
			02		PEDO
			10		
			11		STD
			12		PEDO

Reference Information:

DL-P001D :



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	54, 53, 52	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			

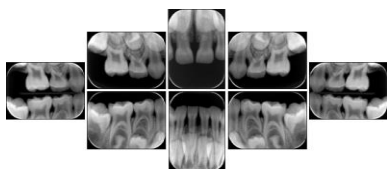
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-P002A	6 standard +2 bitewing pedodontic layout A	

Pos. Code	Exam. Class.	Image Size
00	PA	PEDO
01		
02		
10		
11		
12		
20	BW	
22		

Reference Information:

DL-P002A:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			
20	55, 54, 53, 85, 84, 83	PJ-BW		
22	63, 64, 65, 73, 74, 75			

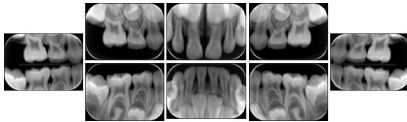
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-P002B	6 standard +2 bitewing pedodontic layout B	

Pos. Code	Exam. Class.	Image Size
00	PA	PEDO
01		
02		
10		
11		
12		
20	BW	
22		

Reference Information:

DL-P002B:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			
20	55, 54, 53, 85, 84, 83	PJ-BW		
22	63, 64, 65, 73, 74, 75			

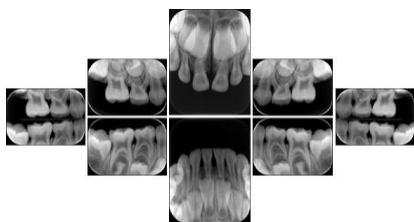
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-P002C	6 standard +2 bitewing pedodontic layout C	

Pos. Code	Exam. Class.	Image Size
00	PA	PEDO
01		STD
02		PEDO
10		
11		STD
12		PEDO
20	BW	PEDO
22		

Reference Information:

DL-P002C:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			
20	55, 54, 53, 85, 84, 83	PJ-BW		
22	63, 64, 65, 73, 74, 75			

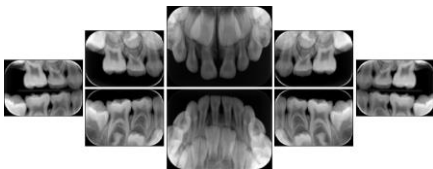
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-P002D	6 standard +2 bitewing pedodontic layout D	

Pos. Code	Exam. Class.	Image Size
00	PA	PEDO
01		STD
02		PEDO
10		
11		STD
12		PEDO
20	BW	
22		

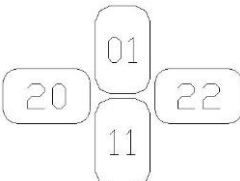
Reference Information:

DL-P002D:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	54, 53, 52	NONE	6	NONE
01	52, 51, 61, 62			
02	63, 64, 65			
10	85, 84, 83			
11	82, 81, 71, 72			
12	73, 74, 75			
20	55, 54, 53, 85, 84, 83	PJ-BW		
22	63, 64, 65, 73, 74,75			

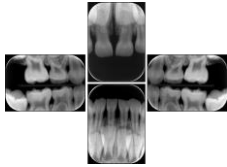
Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT
DL-P002E	2 standard +2 bitewing pedodontic layout A	

Pos. Code	Exam. Class.	Image Size
01	PA	PEDO
11		
20	BW	
22		

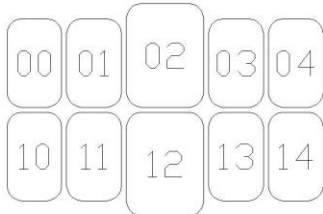
Reference Information:

DL-P002E:



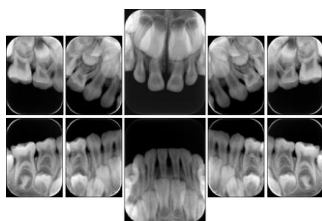
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
01	52, 51, 61, 62	NONE	6	NONE
11	82, 81, 71, 72			
20	55, 54, 53, 85, 84, 83	PJ-BW		
22	63, 64, 65, 73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P003A	10 standard pedodontic layout A		00	PA	PEDO
			01		STD
			02		PEDO
			03		
			04		
			10		
			11		
			12		STD
			13		PEDO
			14		

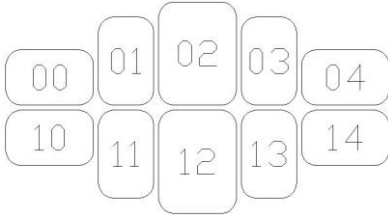
Reference Information:

DL-P003A:



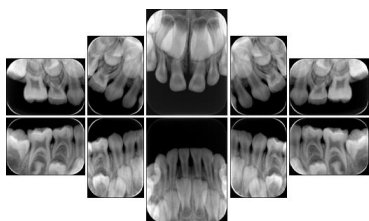
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	64, 65			
10	85, 84			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P003B	10 standard pedodontic layout B		00	PA	PEDO
			01		STD
			02		PEDO
			13		
			14		
			10		
			11		
			12		STD
			13		PEDO
			14		

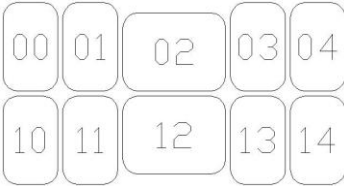
Reference Information:

DL-P003B:



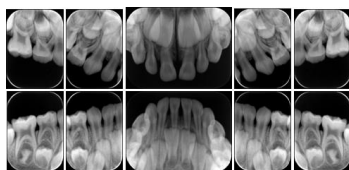
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	63, 64, 65			
10	85, 84, 83			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P003C	10 standard pedodontic layout C		00	PA	PEDO
			01		STD
			02		PEDO
			13		
			14		
			10		
			11		
			12		STD
			13		PEDO
			14		

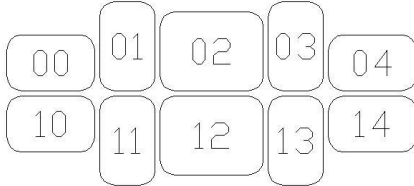
Reference Information:

DL-P003C:



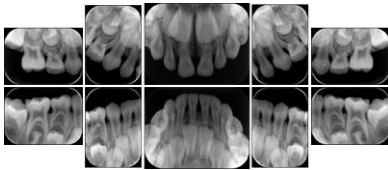
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	64, 65			
10	85, 84			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P003D	10 standard pedodontic layout D		00	PA	PEDO
			01		STD
			02		PEDO
			03		
			04		
			10		
			11		
			12		STD
			13		PEDO
		14			

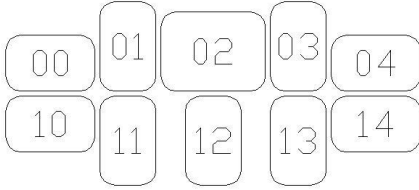
Reference Information:

DL-P003D:



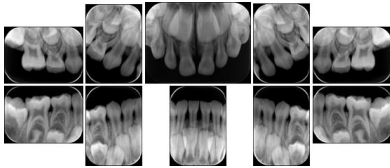
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	63, 64, 65			
10	85, 84, 83			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-P003E	10 standard pedodontic layout E		00	PA	PEDO
			01		
			02		STD
			03		PEDO
			04		
			10		
			11		
			12		
			13		
			14		

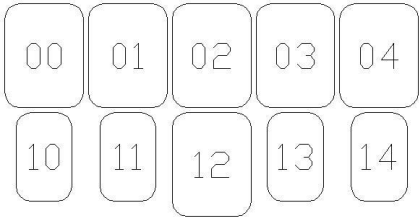
Reference Information:

DL-P003E:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54, 53	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	63, 64, 65			
10	85, 84, 83			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	73, 74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size	
DL-P003F	10 standard pedodontic layout F		00	PA	STD	
			01			
			02			
			03		PEDO	
			04			
			10			
			11			
			12			STD
			13			PEDO
14						

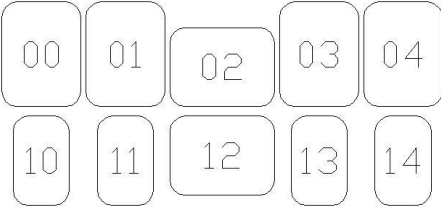
Reference Information:

DL-P003F



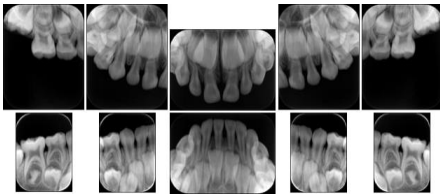
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	64, 65			
10	85, 84			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size	
DL-P003G	10 standard pedodontic layout G		00	PA	STD	
			01			
			02			
			03		PEDO	
			04			
			10			
			11			
			12			STD
			13			PEDO
14						


Reference Information:

DL-P003G



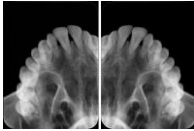
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	55, 54	NONE	10	NONE
01	54, 53, 52			
02	52, 51, 61, 62			
03	62, 63, 64			
04	64, 65			
10	85, 84			
11	84, 83, 82			
12	82, 81, 71, 72			
13	72, 73, 74			
14	74, 75			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

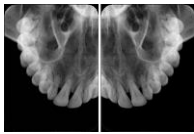
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C001A-U1L0 DL-C001A-U2L0	2 occlusal vertical maxilla layout A		00 01	OCC	OCC

Reference Information:

DL-C001A-U1L0:




DL-C001A-U2L0:



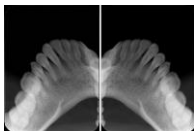
Pos. Code	Projection Style	Layout Format	Sub Code
00	PJ-OCC	4	NONE
01			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

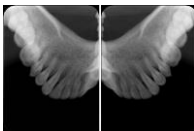
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C002A-U0L1 DL-C002A-U0L2	2 occlusal vertical mandible layout A		10 11	OCC	OCC

Reference Information:

DL-C002A-U0L1




DL-C002A-U0L2



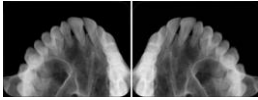
Pos. Code	Projection Style	Layout Format	Sub Code
10	PJ-OCC	4	NONE
11			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

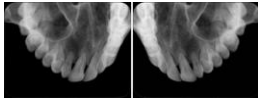
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C003A-U1L0 DL-C003A-U2L0	2 occlusal horizontal maxilla layout A		00 01	OCC	OCC

Reference Information:

DL-C003A-U1L0:




DL-C003A-U2L0:



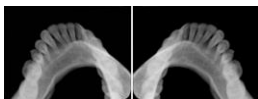
Pos. Code	Projection Style	Layout Format	Sub Code
00	PJ-OCC	4	NONE
01			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

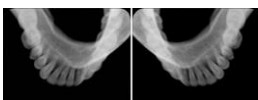
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C004A-U0L1 DL-C004A-U0L2	2 occlusal horizontal mandible layout A		10 11	OCC	OCC

Reference Information:

DL-C004A-U0L1:




DL-C004A-U0L2:



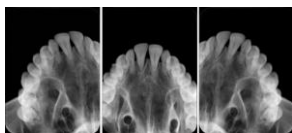
Pos. Code	Projection Style	Layout Format	Sub Code
10	PJ-OCC	4	NONE
11			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

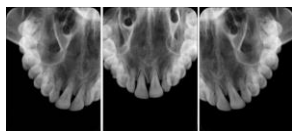
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C005A-U1L0 DL-C005A-U2L0	3 occlusal vertical maxilla layout A		00 01 02	OCC	OCC

Reference Information:

DL-C005A-U1L0:




DL-C005A-U2L0:



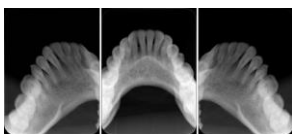
Pos. Code	Projection Style	Layout Format	Sub Code
00	PJ-OCC	6	NONE
01			
02			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

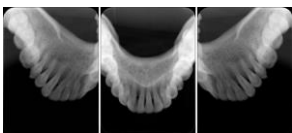
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C006A-U0L1 DL-C006A-U0L2	3 occlusal vertical mandible layout A		10 11 12	OCC	OCC

Reference Information:

DL-C006A-U0L1:

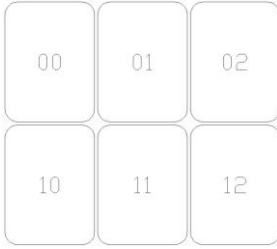


DL-C006A-U0L2:



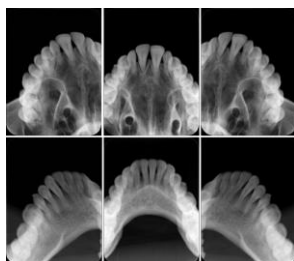
Pos. Code	Projection Style	Layout Format	Sub Code
10	PJ-OCC	6	NONE
11			
12			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

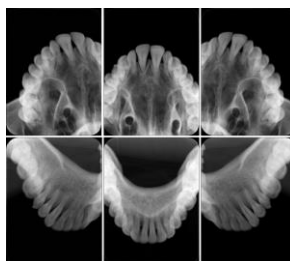
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C007A-U1L1 DL-C007A-U1L2 DL-C007A-U2L1 DL-C007A-U2L2	6 occlusal vertical layout A		00 01 02 10 11 12	OCC	OCC

Reference Information:

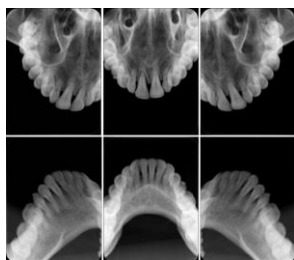
DL-C007A-U1L1:



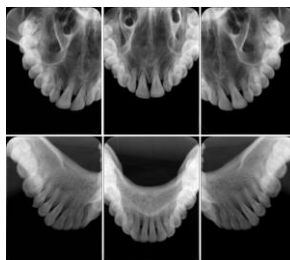
DL-C007A-U1L2



DL-C007A-U2L1:



DL-C007A-U2L2:



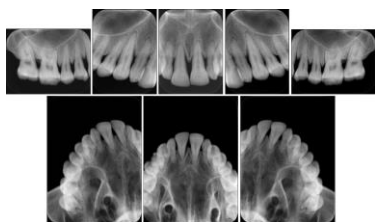
Pos. Code	Projection Style	Layout Format	Sub Code
00	PJ-OCC	6	NONE
01			
02			
10			
11			
12			

Table 1 - DENTAL IMAGE LAYOUT (continuation)

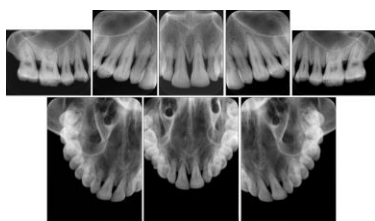
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C008A-U1L0	5 standard +3 occlusal maxilla layout A		00	PA	STD
			01		
			02		
			03		
DL-C008A-U2L0			04	OCC	OCC
			05		
			06		
		07			

Reference Information:

DL-C008A-U1L0:



DL-C008A-U2L0:



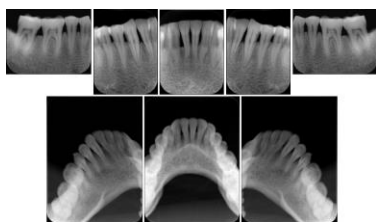
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	10	NONE
01	15, 14, 13			
02	12, 11, 21, 22			
03	23, 24, 25			
04	26, 27, 28	PJ-OCC		
05	/			
06				
07				

Table 1 - DENTAL IMAGE LAYOUT (continuation)

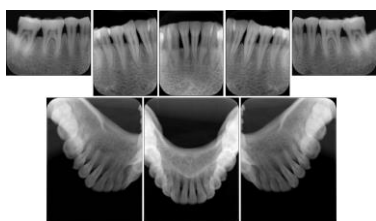
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C009A-U0L1	5 standard +3 occlusal mandible layout A		10	PA	STD
			11		
			12		
			13		
DL-C009A-U0L2			14	OCC	OCC
			15		
			16		
		17			

Reference Information:

DL-C009A-U0L1:

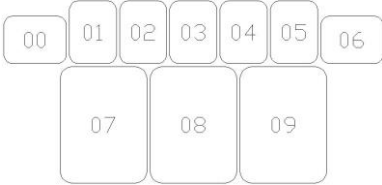


DL-C009A-U0L2:



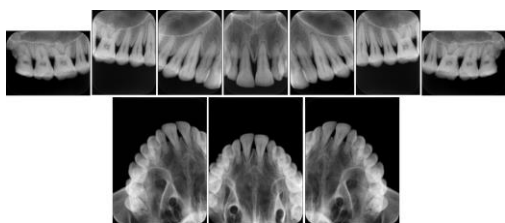
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
10	47, 46, 45	NONE	10	NONE
11	44, 43, 42			
12	42, 41, 31, 32			
13	32, 33, 34			
14	35, 36, 37			
15	/	PJ-OCC		
16				
17				

Table 1 - DENTAL IMAGE LAYOUT (continuation)

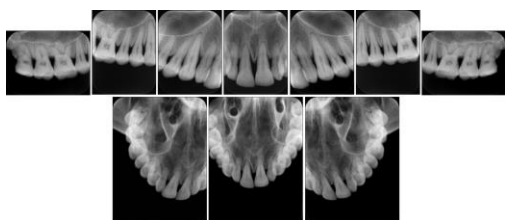
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C010A-U1L0	7 standard +3 occlusal maxilla layout A		00	PA	STD
			01		
			02		
			03		
			04		
			05		
DL-C010A-U2L0			06	OCC	OCC
			07		
			08		
			09		

Reference Information:

DL-C010A-U1L0:

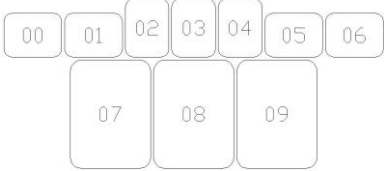


DL-C010A-U2L0:



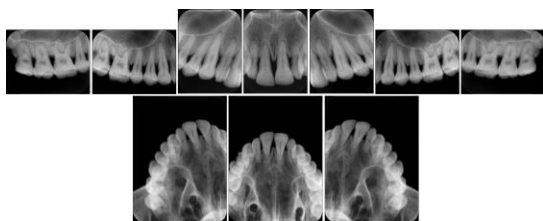
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	14	NONE
01	16, 15, 14			
02	14, 13, 12			
03	12, 11, 21, 22			
04	22, 23, 24			
05	24, 25, 26			
06	26, 27, 28	PJ-OCC		
07	/			
08				
09				

Table 1 - DENTAL IMAGE LAYOUT (continuation)

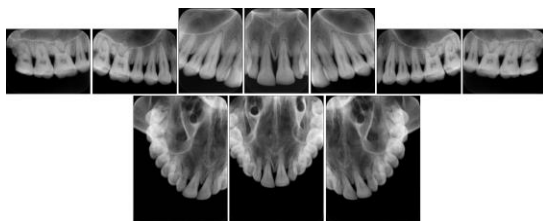
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C010B-U1L0 DL-C010B-U2L0	7 standard +3 occlusal maxilla layout B		00	PA	STD
			01		
			02		
			03		
			04		
			05		
			06	OCC	OCC
			07		
			08		
09					

Reference Information:

DL-C010B-U1L0:



DL-C010B-U2L0:



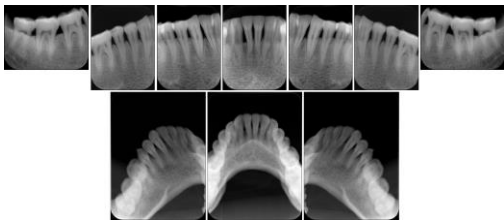
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
00	18, 17, 16	NONE	14	NONE
01	16, 15, 14			
02	14, 13, 12			
03	12, 11, 21, 22			
04	22, 23, 24			
05	24, 25, 26			
06	26, 27, 28	PJ-OCC		
07	/			
08				
09				

Table 1 - DENTAL IMAGE LAYOUT (continuation)

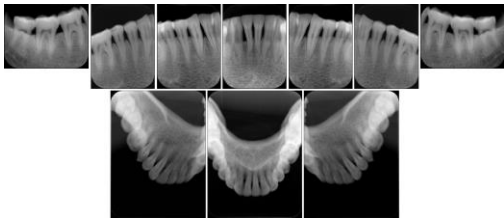
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C011A-U0L1	7 standard +3 occlusal mandible layout A		10	PA	STD
			11		
			12		
			13		
			14		
			15		
			16		
DL-C011A-U0L2			17	OCC	OCC
			18		
			19		

Reference Information:

DL-C011A-U0L1:



DL-C011A-U0L2:



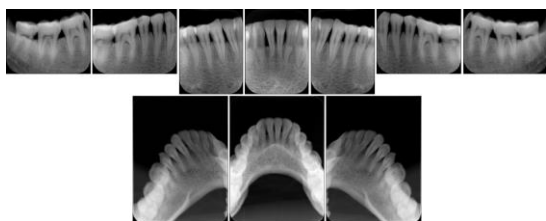
Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
10	48, 47, 46	NONE	14	NONE
11	46, 45, 44			
12	44, 43, 42			
13	42, 41, 31, 32			
14	32, 33, 34			
15	34, 35, 36			
16	36, 37, 38			
17	/	PJ-OCC		
18				
19				

Table 1 - DENTAL IMAGE LAYOUT (continuation)

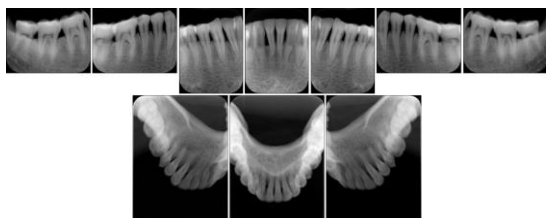
ID	Name	DENTAL IMAGE LAYOUT	Pos. Code	Exam. Class.	Image Size
DL-C011B-U0L1	7 standard +3 occlusal mandible layout B		10	PA	STD
			11		
			12		
			13		
			14		
			15		
			16		
DL-C011B-U0L2			17	OCC	OCC
			18		
			19		

Reference Information:

DL-C011B-U0L1:



DL-C011B-U0L2:



Pos. Code	Expected TEETH DESIGNATION	Projection Style	Layout Format	Sub Code
10	48, 47, 46	NONE	14	NONE
11	46, 45, 44			
12	44, 43, 42			
13	42, 41, 31, 32			
14	32, 33, 34			
15	34, 35, 36			
16	36, 37, 38			
17	/	PJ-OCC		
18				
19				

5. Description

5. 1 Purpose of establishment

ISO 3665 is defines the size of Intra-Oral film, but there are no standards about the layout of the plural films, including ISO 3665.

Along with the film-less environment, Japanese dentists need to map the plural Intra-Oral images on the Monitor for diagnosis, but there are no standards about the layout of the plural films, so each dental clinic, hospital have to ask the PACS vender to map the plural Intra-Oral images on the proper layout on the display using the hanging protocol, customization ...etc. in custom.

They demand to standardize the layout for the Intra-Oral Radiography, so Japanese Society of Oral and Maxillofacial Radiology establishes this JSOMR X-0001 standard.

5. 2 Policy of establishment

This standard is based on “ Y.Hayakawa. the result of questionnaire to Japanese 29 dental universities and dental colleges in 2010 “ *1 , “Y. Ito. The minimum attributes for displaying intraoral radiographic digital images under DICOM standard”*2 and “ the result of questionnaire at the Contact Council of Whole Dental University, Dental Hospital Clinical Radiologists”.

*1 Yoshihiko Hayakawa, Kenichiro Ejima, Kazuyuki Araki, Kaoru Kobayashi, Yoshinori Arai, Hideyuki Baba, Akitoshi Katsumata, Yutaka Ito, Hiroshi Sakamoto, Yuishiro Yamamoto, Hiroo Tamagawa, Tomoyuki Okano. The display layout for Intra-Oral Radiography : the proposal based on the questionnaire survey to DICOM standard, Dental Radiography. 2012:1-8.

*2 Y. Ito. The minimum attributes for displaying intraoral radiographic digital images under DICOM standard. Oral Radiol. 2013.

The image layout of DL-S008A, DL-S009A and DL-P002E is the high frequency in abroad which is listed in DICOM WG22, these are not due to the above articles. The dental number is followed the proposition of the working group.

This standard is focused on the standard image layouts, and standardized for the 1st edition. Next step, we would like to pervade this standard, collect the various opinions, and standardize about the exception of image layouts...etc.

5.3 Dental Image Layout

The maintenance of image layout, same magnification factor that requested on Section 4 on this standard is the requirement to prevent the mistake of teeth handling.

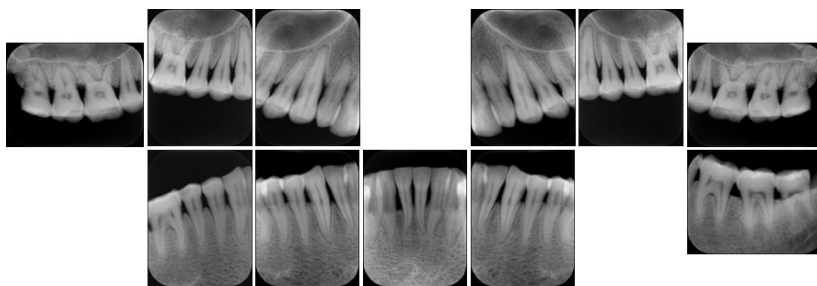
The maintenance of image layout

If there are some images that have not been taken, the concrete example about the image layout is as follows;

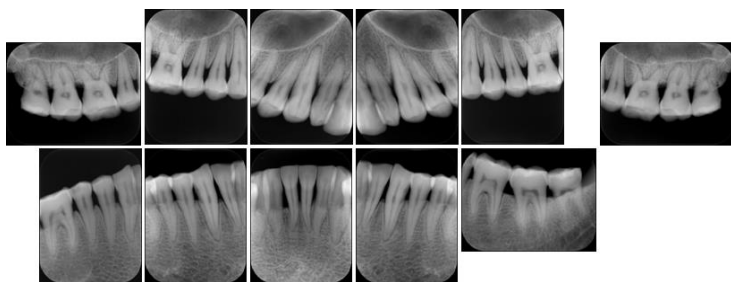
This standard defines the space of the images that have not been taken shall not be filled.

In case of ID: DL-S003A

Proper image layout



Wrong image layout (the space of the images that have not been taken are filled.)



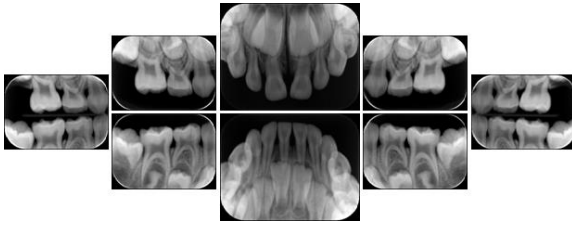
Same magnification factor

The concrete example of image layout that is combined with the different size images is as follows;

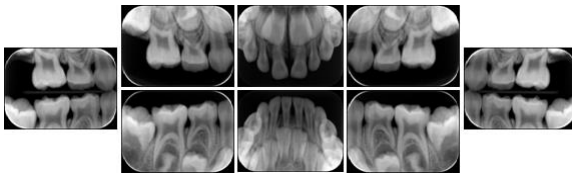
It shall not change the magnification factor each image.

In case of ID: DL- P002D

Proper image layout:



Wrong image layout(the central image is minified.)



5.4 Reference Information

5.4.1 Dental images and teeth designation

Dental images are captured with the general positioning using the Phantom. Teeth designation is correspond to the above images. These reference information is described to understand this standard concretely.

5.4.2 Projection style

This standard adopts the orthographic projection because of standard image layout. The eccentric projection is described on section 5.3.4.

5.4.3 The exceptions of image layout

This standard requirement is standard image layout. This section describes the exceptions of image layout. These exceptions are the proposal of reference information because the individual and special agreement are needed between the customers and image acquisition venders, PACS venders. There are the unlimited combination on these exceptions of image layout, so they need to decide the specification and combination based on their workflow.

The exceptions of image layout are classified into 2 patterns

- (A) The exceptions of image layout adapt to the policy of maintenance of image layout and same magnification factor
- (B) The exceptions of image layout does not adapt to the policy of maintenance of image layout and same magnification factor

- (A)The exceptions of image layout adapt to the policy of maintenance of image layout and same magnification factor

The proposal is to use the standard image layout ID and combine the sub code.

There were 4 cases about the exceptions that this committee discussed.

- Change and add the projection method : eccentric projection (mesio , disto)
- Bisecting technique : typical example is bisecting technique at anterior teeth
- Change the size : typical example is pediatric size to standard size.
- Change the directions (vertical / horizontal)

These exceptions may be considered multiple apply not alone only. For example, change the directions and bisecting technique.

The note is to place more of the image than the standard image layout. The addition of Dental location should be within 2 teeth each jaw.

The following is the sub code sample

Projection code

Projection style	Code table
As standard (Orthographic projection), no change	None
Mesio- eccentric projection	PJ-MESIO
Disto- eccentric projection	PJ-DISTO
Bitewing	PJ-BW
Occlusal	PJ-OCC

Bisecting technique

Bisecting technique	Code table
As standard, no change	None
Left image after bisecting	L
Right image after bisecting	R

Size change code

Size change	Code table
As standard, no change	None
Change to pediatric size	SIZE-PEDO

Change to standard size	SIZE-STD
Change to occlusal size	SIZE-OCC

Direction change code

Direction change	Code table
As standard, no change	None
Change from standard	DIR

- (B) The exceptions of image layout does not adapt to the policy of maintenance of image layout and same magnification factor

The basic workflow is proposed to use the ID of DL-NYYYYZ (large classification, N= non-standard), not to use the ID of standard image layout.

Should not use the ID of standard image layout if image layout strays the standard drastically

The expected image layout is based on the DL-S001A 10 teeth, DL-S004A 14 teeth and DL-P001C 6 teeth, preparing the private image layout, DL-N001A, DL-N002A, DL-N003A and change the directions, size and magnification factor arbitrarily.

5.5 OID (Object identification)

Object identification is the unique string that registered, controlled internationally to share the common understanding when the systems communicate via network.

JIRA (Japan Medical Imaging and Radiological Systems Industries Association) provides the level 5 control number, 9174 to Japanese Society of Oral and Maxillofacial Radiology.

JIRA object identification : 1 2 392 00200036 (level 1 to 4)

Japanese Society of Oral and Maxillofacial Radiology object identification : 1 2 392 00200036 9174 (level 1 to 5)

Japanese Society of Oral and Maxillofacial Radiology controls and uses the level 6 to 8 as follows;

Level 6 (classification)	Level 7 (sequence number)	Level8 (publication date)
Not assigned	Not assigned	2015

Standard of this academic conference	JSOMR X-0001	

DICOM object OID of this standard is as follows:

1.2.392.200036. 9174.1.1.2015

6 Establishment / Revision

This standard was established by Japanese Society of Oral and Maxillofacial Radiology

6.1 Document

The draft of this standard is prepared by Japanese Society of Oral and Maxillofacial Radiology, Medical Information Committee and Project Research Committee of Japanese Association for Dental Science.

Member list

Name	Facility name/ Company name	title
Akitoshi Katsumata	Asahi University	Medical Information Committee Chairman, Representative of project research (2015-11-01)
Yoshinori Arai	Nippon University	Medical Information Committee Commission member, Commission member of project research (2015-11-01)
Yoshihiko Hayakawa	Kitami Institute of Technology	
Kenishiro Ejima	Nippon University	
Akira Mishima	Tsurumi University Dental Hospital	
Kenichi Goto	Aichi Gakuin University Dental Hospital	
Ichiro Suzuki	Niigata University	Commission member of project research (2015-11-01)
Tomohiro Okano	Showa University	
Hiroo Tamagawa	Osaka University Dental Hospital	
Yutaka Ito	Hokkaido University Hospital	
Hiroshi Sakamoto	Tohoku University Hospital	
Mitsuhiro Aizawa	Tokyo Dental University Suidobashi Hospital	
Yuichiro Yamamoto	Osaka University	
Jun Ito	Carestream Health Japan Co., Ltd.	
Kazuhiro Sekine	Yoshida Corp.	
Go Kinoshita	J.Morita MFG. CORP.	
Yoshito Sugihara	J.Morita MFG. CORP.	

6.2 Examination / Approval

This standard was examined and approved by the board of directions of Japanese Society of Oral and Maxillofacial Radiology

2015-10-23