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TECHNICAL CORRIGENDUM 1

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**Information technology — Computer graphics and image processing — Image Processing and Interchange (IPI) — Functional specification —**

**Part 2:  
Programmer's imaging kernel system application program interface**

**TECHNICAL CORRIGENDUM 1**

*Technologies de l'information — Infographie et traitement de l'image — Traitement de l'image et échange (IPI) — Spécification fonctionnelle —*

*Partie 2: Interface de programme d'application PIKS*

**RECTIFICATIF TECHNIQUE 1**

Technical Corrigendum 1 to International Standard ISO/IEC 12087-2:1994 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 24, *Computer graphics and image processing*.

*Page 63*

Add the following note below Table 9:

For the Foundation profile, support 2 image resampling is limited to bilinear interpolation.

*Page 90*

Update the accumulator error codes: add 15; delete 12, 14, 24 and 44.

*Page 98*

Update the `allocate_composite_identifier_array` error codes: delete 12 and 14.

**ICS 35.140**

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Page 99

Update the allocate\_composite\_identifier\_list error codes: delete 12 and 14.

Page 104

Update the allocate\_histogram error codes: delete 12 and 14.

Page 108

Update the allocate\_image error codes: add 4, 16, 22, 42, 61 (for profiles < Scientific) and 101.

Page 110

Update the allocate\_lut error codes: delete 12 and 14.

Page 112

Update the allocate\_matrix error codes: add 101; delete 12, 14, 111 and 112.

Page 113

Replace remark with:

**Remarks:**

1. The array\_size tuple contains parameters of the ND data type
2. The key\_pixel tuple contains parameters of the SD data type
3. The scale factor shall be unity for BD, ND, RD and CD data type arrays
4. For SD data type arrays, the scale factor shall be used by implementations as an indirect means of specifying arrays with fractional elements. For example, in an implementation, an image could be convolved with an SD impulse response function array, and then be divided by the scale factor to achieve the equivalent of convolution with a fractional impulse response function array.

Page 114

Update the allocate\_neighbourhood\_array error codes: add 16, 22 and 42.

Page 116

Update the allocate\_pixel\_record error codes: add 16, 22 and 42.

Page 118

Update the allocate\_roi error codes: add 1, 2, 3, 16, 22 and 42.

Page 120

Update the allocate\_static\_array error codes: add 16, 22 and 42.

Page 122

Update the allocate\_tuple error codes: delete 12 and 14.

*Page 124*

Update the `allocate_value_bounds` error codes: add 1, 101 and 102; delete 12 and 14.

*Page 128*

Update the `alpha_blend_constant` error codes: add 15 and 18.

*Page 130*

Update the `alpha_blend_variable` error codes: add 15, 18, 41, 45 and 47; delete 43.

*Page 132*

Update the `array_to_lut` error codes: delete 22, 42 and 121.

*Page 134*

Update the `bind_match_point` error codes: add 16, 22 and 42; delete 41.

*Page 136*

Update the `bind_roi` error codes: add 16 and 42; delete 41 and 43.

*Page 139*

Update the `bit_shift` error codes: add 15 and 18.

*Page 144*

Update the `cartesian_to_polar` error codes: add 15 and 45.

*Page 160*

Update the `classifier_bayes` error codes: add 15; delete 12, 14, 22, 42 and 48.

*Page 164*

Update the `classifier_nearest_neighbour` error codes: add 3 and 15; delete 12, 14, 22 and 42.

*Page 165*

Update the `close_piks` error codes: delete 302.

*Page 170*

Update the `colour_conversion_linear` error codes: add 15, 16, 18, 25 and 54.

*Page 184*

Update the `colour_conversion_nonlinear` error codes: add 15, 18 and 25.

*Page 187*

Update the `colour_conversion_subtractive` error codes: add 15, 25 and 104; delete 12 and 14.

*Page 191*

Update the colour\_lookup\_interpolated error codes: add 15, 16 and 42; delete 25 and 101.

*Page 193*

In Nomenclature, replace the DST entry with:

DST(x,y,z,t,b)                      XxYxZxTxB destination image

*Page 194*

Update the complement and complement\_roi error codes: add 15, 16, 18, 19, 24, 25 and 26; delete 21, 23 and 101.

*Page 196*

Update the complex\_composition error codes: add 15, 18 and 25; delete 21 and 23.

*Page 198*

Update the complex\_conjugate error codes: add 15, 18, 25 and 45; delete 21 and 23.

*Page 200*

Update the complex\_decomposition error codes: add 15, 18 and 25; delete 21 and 23.

*Page 202*

Update the complex\_magnitude error codes: add 15, 18 and 25; delete 21 and 23.

*Page 204*

Update the composite\_identifier\_array\_equal error codes: add 22 and 28; delete 21 and 27.

*Page 206*

Update the composite\_identifier\_array\_get error codes: add 16.

*Page 214*

Update the composite\_identifier\_list\_get error codes: add 16.

*Page 218*

Update the composite\_identifier\_list\_remove error codes: add 16.

*Page 220*

Update the composite\_identifier\_record\_equal error codes: add 28; delete 27.

*Page 222*

Update the composite\_identifier\_record\_get error codes: add 16.

Page 226

Update the constant\_predicate error codes: add 15 and 101.

Page 228

Update the convert\_array\_to\_image error codes: add 16, 32 and 53; delete 42 and 43.

Page 229

In Objects, add BD to the SRC and DST data types as follows:

SRC data type:	BD, ND, SD, RD, CD
DST data type:	BD, ND, SD, RD, CD

Page 230

Replace remark 5 with:

5. Conversions from the CD to the BD, ND, SD and RD data types are not allowed.

Update the convert\_image\_datatype error codes: add 15 and 18; delete 41 and 43.

Page 232

Update the convert\_image\_to\_array error codes: add 15, 31 and 40; delete 41 and 45.

Page 234

Update the convert\_image\_to\_roi error codes: add 15 and 31; delete 44.

Page 236

Update the convert\_roi\_to\_image error codes: add 16 and 32; delete 42.

Page 242

Update the convolve\_2d error codes: add 15, 16, 22, 25, 42 and 43; delete 52.

Page 246

Update the convolve\_5d error codes: add 15, 16, 18, 42 and 43; delete 52.

Page 247

Add the following remark.

3. For colour images, the band offset is zero and the band sizes are equal.

Page 249

Update the copy\_window and copy\_window\_roi error codes: add 15, 16, 22, 26, 46 and 101; delete 41.

Page 251

In Parameters, move the data value parameters to the end of the parameter list.

Page 252

Update the create\_tuple error codes: add 24, 44 and 101; delete 22 and 42.

Page 255

Update the cross\_correlation error codes: add 15 and 47; delete 12, 14, 24 and 44.

Page 257

Update the deallocate\_data\_object error codes: add 11 and 13.

Page 259

Replace remark with:

**Remarks:**

1. The parameter tuples contain parameters of the ND data type.
2. The sub-image does not inherit the ROI of the source image.
3. An ROI can be bound to a sub-image.

Page 260

In the definition, replace the DST equation with:

$$DST(x - x_0, y - y_0, z - z_0, t - t_0, b - b_0) = SRC(x, y, z, t, b)$$

Update the define\_sub\_image error codes: add 12, 14, 15, 16, 17, 22, 23, 42 and 45; delete 1 and 3.

Page 262

Update the difference\_measures error codes: add 3, 15 and 43; delete 2.

Page 265

Update the diffuse error codes: add 15, 16, 18, 22, 42 and 43; delete 1.

Page 269

Update the dither error codes: add 15, 16, 18, 22, 42 and 43; delete 1.

Page 272

Update the draw\_pixels and draw\_pixels\_roi error codes: add 23; delete 11, 12, 13 and 14.

Page 275

Update the dyadic\_arithmetic error codes: add 15, 18, 23 and 43.

Page 279

Update the dyadic\_complex error codes: add 15, 18, 23 and 45.

Page 284

Update the dyadic\_logical error codes: add 15, 18, 23 and 43.

Page 288

Update the dyadic\_predicate error codes: add 15, 18 and 23.

Page 292

Update the edge\_detection\_orthogonal\_gradient error codes: add 15, 16 and 18; delete 28.

Page 296

Update the edge\_detection\_second\_derivative error codes: add 15, 16, 18 and 101.

Page 300

Update the edge\_detection\_template\_gradient error codes: add 15, 16 and 18.

Page 302

Update the equal\_predicate error codes: add 15 and 101.

Pages 305 and 306

Remove the overbars on H in the dilation equations.

Page 307

Update the erosion\_dilation\_boolean and erosion\_dilation\_boolean\_roi error codes: add 15, 16, 18, 19 and 101; delete 41 and 43; reorder 3 and 2.

Page 313

Update the erosion\_dilation\_grey error codes: add 15, 16, 18, 43, 48 and 101.

Page 316

Update the error\_function\_scaling error codes: add 15, 18 and 45.

Page 321

Update the error\_test error codes: delete 62 and 302.

Page 324

Update the export\_histogram error codes: add 16; delete 24, 42 and 44.

Page 325

In Parameters, replace *data\_type* with:

data_type	destination data type option	SP	in
	BI planar		
	BI pixel interleaved		
	NI Planar		
	NI pixel interleaved		
	SI planar		
	SI pixel interleaved		
	TI planar		
	TI pixel interleaved		
	RF planar		
	RF pixel interleaved		
	CF		

Page 326

Add remark 5 as follows:

5. The external data type option specifies whether colour images are stored in planar or pixel interleaved format.

Add the following after the current DST definition:

Image data exported from PIKS to an application is transferred as a one-dimensional array. This data is presented in planar or pixel interleaved form according to the following ordering.

Planar representation:	Pixel interleaved representation:
data(0,0,0,0),	data(0,0,0,0,0),
data(1,0,0,0),	data(1,0,0,0,0),
...	...
data(X,0,0,0),	data(B,0,0,0,0),
...	...
data(0,1,0,0),	data(0,1,0,0,0),
...	...
data(X,Y,0,0),	data(B,X,0,0,0),
...	...
data(0,0,1,0),	data(0,0,1,0,0),
...	...
data(X,Y,Z,0,0),	data(B,X,Y,0,0),
...	...
data(0,0,0,1,0),	data(0,0,0,1,0),
...	...
data(X,Y,Z,T,0),	data(B,X,Y,Z,0),
...	...
data(0,0,0,0,1),	data(0,0,0,0,1),
...	...
data(X,Y,Z,T,B)	data(B,X,Y,Z,T)

Page 327

Update the export\_image error codes: add 15; delete 23, 41 and 43.

Page 330

Update the export\_lut error codes: add 16; delete 24, 42 and 44.

*Page 332*

Update the `export_matrix` error codes: add 16; delete 24, 42 and 44.

*Page 334*

Update the `export_neighbourhood_array` error codes: add 1, 16 and 101; delete 24, 42 and 44.

*Page 336*

Update the `export_roi_array` error codes: add 16; delete 24, 42 and 44.

*Page 338*

Update the `export_static_array` error codes: add 16; delete 24, 42 and 44.

*Page 340*

Update the `export_tuple` error codes: add 16; delete 24, 42 and 44.

*Page 342*

Update the `export_value_bounds` error codes: add 16; delete 24, 42 and 44.

*Page 344*

Update the `extract_pixel_plane` and `extract_pixel_plane_roi` error codes: add 12, 14, 15, 16, 18, 19 and 24; delete 11, 13, 23 and 41.

*Page 347*

Update the `extrema` error codes: add 15; delete 1, 12, 14, 24, 30, 44 and 50.

*Page 350*

Update the `false_colour` error codes: add 15, 16, 18 and 52.

*Page 354*

Update the `fill_region` error codes: add 15, 18, 45 and 101.

*Page 357*

Update the `filter_butterworth` error codes: add 16.

*Page 360*

Update the `filter_gaussian` error codes: add 16.

*Page 363*

Update the `filter_inverse` error codes: add 16.

*Page 367*

Update the `filter_matched` error codes: add 16 and 19; reorder 48 and 74.

Page 371

Update the filter\_wiener error codes: add 16 and 19.

Page 376

Update the filter\_zonal error codes: add 16, 22 and 42.

Page 379

Update the filtering\_homomorphic error codes: add 15, 16, 18, 43 and 45; delete 44.

Page 383

Update the filtering\_linear error codes: add 15, 16, 18 and 45.

Page 388

Update the filtering\_median error codes: add 15, 16 and 18.

Page 391

Update the filtering\_pseudomedian error codes: add 15, 16, 18 and 43.

Page 396

Update the filtering\_rank\_order error codes: add 15, 16 and 18.

Page 399

Update the flip\_spin\_transpose and flip\_spin\_transpose\_roi error codes: add 12, 14, 15, 16, 18, 19, 22, 24 and 26; delete 41 and 45.

Page 403

Update the gamma\_correction error codes: add 15, 18 and 104; delete 103.

Page 406

Update the get\_colour\_pixel error codes: add 15; delete 62.

Page 408

Update the get\_pixel and get\_pixel\_roi error codes: add 12, 14, 15 and 16; delete 11, 13 and 41.

Page 409

In Parameters, replace the jo and ko entries with:

jo	first index offset	SP	in
ko	second index offset	SP	in

Replace remark with:

**Remarks:**

1. The data type of each array data value shall be of the same class as the source image.
2. If the array spatially extends over the J-K plane of the source image, the returned pixel values in the non-coincident region are set to zero for arithmetic data type images, and are set to FALSE for Boolean data type images.

*Page 410*

Update the `get_pixel_array` and `get_pixel_array_roi` error codes: add 15 and 16; delete 11, 12, 13, 14, 24, 41, 44, 62 and 112.

*Page 412*

Update the `get_pixel_record` and `get_pixel_record_roi` error codes: add 15 and 16; delete 11, 12, 13, 14, 24, 41, 44 and 62.

*Page 416*

Update the `histogram_modification` error codes: add 15 and 18.

*Page 419*

Update the `histogram_scaling` error codes: add 15 and 18.

*Page 423*

Update the `histogram_shape_1d` error codes: add 16; delete 24 and 44.

*Page 428*

Update the `histogram_shape_2d` error codes: add 16; delete 24 and 44.

*Page 431*

Update the `histogram_1d` error codes: add 15; delete 44.

*Page 435*

Update the `histogram_2d` error codes: add 15; delete 44.

*Page 443*

Update the `hit_or_miss` error and `hit_or_miss_roi` codes: add 12, 14, 15, 16, 18 and 19; delete 11, 13, 25, 41 and 43.

*Page 448*

Update the `hough_transform` error codes: add 15.

*Page 451*

Update the `image_bar_chart` error codes: add 16.

Page 454

Update the image\_constant error codes: add 16, 22, 23 and 42.

Page 456

Update the image\_gaussian error codes: add 16, 22, 42 and 101.

Page 459

Update the image\_grey\_scale error codes: add 16, 22 and 42.

Page 462

Update the image\_random\_number error codes: add 16, 22, 23 and 42.

Page 464

Update the import\_histogram error codes: add 16; delete 22, 42 and 44.

Page 465

In Parameters, replace the src\_data\_type with:

src_data_type	source data type option	SP	in
	BI planar		
	BI pixel interleaved		
	NI planar		
	NI pixel interleaved		
	SI planar		
	SI pixel interleaved		
	TI planar		
	TI pixel interleaved		
	RF planar		
	RF pixel interleaved		
	CF		

Page 466

Add remark 5 as follows:

5. The external data type option specifies whether colour images are stored in planar or pixel interleaved format.

Add the following after the current DST definition:

Image data exported from PIKS to an application is transferred as a one-dimensional array. This data is presented in planar or pixel interleaved form according to the following ordering.

Planar representation:	Pixel interleaved representation:
data(0,0,0,0,0),	data(0,0,0,0,0),
data(1,0,0,0,0),	data(1,0,0,0,0),
...	...
data(X,0,0,0,0),	data(B,0,0,0,0),
...	...
data(0,1,0,0,0),	data(0,1,0,0,0),
...	...
data(X,Y,0,0,0),	data(B,X,0,0,0),
...	...
data(0,0,1,0,0),	data(0,0,1,0,0),
...	...
data(X,Y,Z,0,0),	data(B,X,Y,0,0),
...	...
data(0,0,0,1,0),	data(0,0,0,1,0),
...	...
data(X,Y,Z,T,0),	data(B,X,Y,Z,0),
...	...
data(0,0,0,0,1),	data(0,0,0,0,1),
...	...
data(X,Y,Z,T,B)	data(B,X,Y,Z,T)

*Page 467*

Update the import\_image error codes: add 15; delete 41, 43 and 61.

*Page 470*

Update the import\_lut error codes: delete 22 and 42.

*Page 472*

Update the import\_matrix error codes: delete 22 and 42.

*Page 474*

Update the import\_neighbourhood\_array error codes: add 16.

*Page 476*

Update the import\_roi\_array error codes: add 16.

*Page 478*

Update the import\_static\_array error codes: add 16.

*Page 479*

Delete remark 2.

*Page 480*

Update the import\_tuple error codes: delete 22, 42 and 44.

*Page 482*

Update the import\_value\_bounds error codes: add 102; delete 22 and 42.

*Page 485*

Update the impulse\_boxcar error codes: add 16, 22 and 42.

*Page 489*

Update the impulse\_derivative\_of\_gaussian error codes: add 16, 22 and 42.

*Page 493*

Update the impulse\_difference\_of\_gaussians error codes: add 16, 22 and 42.

*Page 497*

Update the impulse\_elliptical error codes: add 16, 22 and 42.

*Page 500*

Update the impulse\_gaussian error codes: add 16, 22 and 42.

*Page 502*

Update the impulse\_laplacian\_of\_gaussian error codes: add 16, 22 and 42.

*Page 505*

Update the impulse\_pyramid error codes: add 16, 22 and 42.

*Page 508*

Update the impulse\_rectangular error codes: add 16, 22 and 42; delete 111 and 112.

*Page 511*

Update the impulse\_sinc error codes: add 16, 22 and 42.

*Page 514*

Update the input\_object error codes: add 11; delete 1, 14, 42, 44 and 62.

*Page 528*

Add the following remark.

4. If a non-image data object parameter has not been set prior to an inquiry, an indication of this state is returned to the application.

*Page 529*

In the Lookup table, replace “table size” with “table entries”.

Page 530

In ROI elliptical, replace:

ellipse dimension	EP
-------------------	----

with:

index manipulate 5-tuple	ID
ellipse dimension code	EP
2D	
3D	
4D	
5D	

In ROI polygon, insert the following between the array entries and polarity code lines:

index manipulate 5-tuple	ID
--------------------------	----

In ROI rectangular, insert the following between the end position 5-tuple and rectangle dimension code lines:

index manipulate 5-tuple	ID
--------------------------	----

Page 546

Update the insert\_pixel\_plane and insert\_pixel\_plane\_roi error codes: add 15, 16, 18, 23 and 45; delete 21, 41 and 43.

Page 549

Update the label\_objects error codes: add 16 and 18.

Page 553

Update the laws\_texture\_features error codes: add 15, 16 and 18.

Page 556

Update the level\_slice error codes: add 15 and 18.

Page 561

Update the line\_profile error codes: add 15, 16, 22, 42 and 62; delete 24 and 44.

Page 565

Update the lookup error codes: add 15, 16, 18, 21, 23, 52 and 53; delete 42 and 43.

Page 569

Update the lookup\_interpolated error codes: add 15, 16, 18, 21, 23, 52; delete 42 and 43.

Page 573

Update the luminance\_generation error codes: add 15, 18 and 43.

Page 576

Update the markov\_spectrum error codes: add 16, 22 and 42.

Page 578

Update the moments error codes: add 15.

Page 581

Update the monadic\_arithmetic error codes: add 15, 18 and 43.

Page 585

Update the monadic\_complex error codes: add 15, 18 and 45.

Page 590

Update the monadic-logical and monadic\_logical\_roi error codes: add 12, 14, 15, 16, 18, 19, 26, 42, 43 44 and 46; delete 11, 13, 25, 41 and 45.

Page 592

Add the following remarks:

4. The pixel stacker neighbourhood lies totally within the J-K pixel plane.
5. The first and last rows and columns of the destination image are set to FALSE.

Page 593

In the Morphic processor conceptual model, replace “Bit 1” with “MSB” and replace “Bit 9” with “LSB”.

Update the morphic\_processor and morphic\_processor\_roi error codes: add 15, 16, 18, 19, 23, 24 and 26; delete 11, 13, 25, 41 and 43.

Page 600

Update the morphology and morphology\_roi error codes: add 12, 14, 15, 16, 18, 19, 24 and 26; delete 11, 13, 25, 41 and 43.

Page 609

Update the neighbour\_count error codes: add 15, 16 and 18.

Page 613

Update the noise\_combination error codes: add 15 and 18.

Page 617

Update the open\_close and open\_close\_roi error codes: add 15, 16, 18 and 19; delete 25, 41, 45 and 101.

Page 620

Update the open\_piks error codes: add 62.

Page 622

Update the outlier\_removal error codes: add 15, 16 and 18.

Page 624

Update the output\_object error codes: add 11, 13, 15, 16 and 62; delete 25, 26 and 46.

Page 628

Update the paint\_pixels error codes: add 15, 16 and 18.

Page 632

Update the perimeter\_code\_generator error codes: add 15; delete 12, 14, 24 and 44.

Page 636

Update the polar\_to\_cartesian error codes: add 15 and 45.

Page 638

Update the power\_law\_scaling error codes: add 15.

Page 640

Update the pseudocolour error codes: add 15, 16, 18 and 52; delete 28 and 172.

Page 644

Update the put\_pixel and put\_pixel\_roi error codes: add 12 and 14; delete 11, 13 and 43.

Page 645

In Parameters, replace the jo and ko entries with:

jo	first index offset	SP	in
ko	second index offset	SP	in

Add the following remark section:

**Remark:**

If the array spatially extends over the J-K plane of the source image, the pixel values of the non-coincident region are not recorded in the source image.

Page 646

Update the put\_pixel\_array and put\_pixel\_array\_roi error codes: delete 11, 12, 13, 14, 22, 42 and 43.

Page 647

Replace the Name section with:

put_pixel_record	put_pixel_record_roi
------------------	----------------------

Page 648

Update the `put_pixel_record` and `put_pixel_record_roi` error codes: delete 11, 12, 13, 14, 22, 42 and 43.

Page 652

Update the `rescale` and `rescale_roi` error codes: add 15, 16, 22, 24 and 42; delete 1, 11 and 13.

Page 655

Update the `resize` and `resize_roi` error codes: add 15, 16, 22, 24 and 42; delete 11 and 13.

Page 661

Update the `roi_coordinate` error codes: add 2 and 16; delete 44.

Page 664

Add the following remark.

6. The `index_manipulate` tuple contains parameters of the CS data type.

Page 666

Update the `roi_elliptical` error codes: add 16, 22 and 42; delete 44.

Page 667

Replace remark 4 with:

4. The `roi_size` tuple contains parameters of the ND data type.

Page 668

Add the following remark.

6. The `index_manipulate` tuple contains parameters of the CS data type.

Update the `roi_polygon` error codes: add 2 and 16; delete 44.

Page 670

In Nomenclature, make the following substitutions:

From:	To:
<code>je &gt; js</code>	<code>je ≥ js</code>
<code>ke &gt; ks</code>	<code>ke ≥ ks</code>
<code>le &gt; ls</code>	<code>le ≥ ls</code>
<code>me &gt; ms</code>	<code>me ≥ ms</code>
<code>ne &gt; ns</code>	<code>ne ≥ ns</code>

Replace remark 3 as follows:

3. The `roi_size`, `start_position` and `end_position` tuples contain parameters of the ND data type.

Add the following remark.

5. The *index\_manipulate* tuple contains parameters of the CS data type.

Page 672

Update the *roi\_rectangular* error codes: add 16, 22 and 42; delete 44.

Page 674

In remark 2, add the following to the beginning of the sentence: "In the 2D case, 'rotation...'"

Page 675

In the definition:, switch signs before all SIN functions, i.e. -SIN instead of SIN and SIN instead of -SIN.

Page 676

Update the *rotate* and *rotate\_roi* error codes: add 12, 14, 15 and 16; delete 25, 41 and 45.

Page 678

Update the *rubber\_band\_scaling* error codes: add 15 and 43.

Page 682

Update the *sequence\_average* error codes: add 1 and 3; delete 21.

Page 685

Update the *sequence\_karhunen\_loeve* error codes: add 15, 16 and 18.

Page 690

Update the *sequence\_running\_measures* error codes: add 12, 15, 16 and 23; delete 21, 25 and 173.

Page 697

In the definition, replace the first sentence with:

This mechanism performs the following functions only for attributes that are NULL:

Update the *set\_image\_attributes* error codes: add 4, 5, 12, 14, 16, 22, 42 and 101.

Page 701

Update the *set\_index\_assignment* error codes: delete 12, 14, 24 and 44.

Page 708

Update the *shape\_metrics* error codes: add 15; delete 12, 14, 24 and 44.

Page 712

Update the *spatial\_moments\_invariant* error codes: add 15; delete 12 14 24 and 44.