



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		

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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)

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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.