Designation: E1475 – 13

Standard Guide for
Data Fields for Computerized Transfer of Digital Radiological Examination Data[1]

1. Scope

1.1 This guide provides a listing and description of the fields that are recommended for inclusion in a digital radiological examination data base to facilitate the transfer of such data. This guide sets guidelines for the format of data fields for computerized transfer of digital image files obtained from radiographic, radioscopic, computed radiographic, or other radiological examination systems. The field listing includes those fields regarded as necessary for inclusion in the data base: (*1*) regardless of the radiological examination method (as indicated by Footnote C in Table 1), (*2*) for radioscopic examination (as indicated by Footnote F in Table 1), and (*3*) for radiographic examination (as indicated by Footnote D in Table 1). In addition, other optional fields are listed as a reminder of the types of information that may be useful for additional understanding of the data or applicable to a limited number of applications.

1.2 It is recognized that organizations may have in place an internal format for the storage and retrieval of radiological examination data. This guide should not impede the use of such formats since it is probable that the necessary fields are already included in such internal data bases, or that the few additions can easily be made. The numerical listing and its order indicated in this guide is only for convenience; the specific numbers and their order carry no inherent significance and are not part of the data file.

1.3 Current users of Guide E1475 do not have to change their software. First time users should use the XML structure of Table A1.1 for their data.

1.4 The types of radiological examination systems that appear useful in relation to this guide include radioscopic systems as described in Guide E1000, Practices E1255, E1411, E2597, E2698 and E2737, and radiographic systems as de-scribed in Guide E94 and Practices E748, E1742, E2033, E2445, and E2446. Many of the terms used are defined in Terminology E1316.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E94 Guide for Radiographic Examination

E748 Practices for Thermal Neutron Radiography of Materials

E1000 Guide for Radioscopy

E1255 Practice for Radioscopy

E1316 Terminology for Nondestructive Examinations

E1411 Practice for Qualification of Radioscopic Systems

E1742 Practice for Radiographic Examination

E2033 Practice for Computed Radiology (Photostimulable Luminescence Method)

E2445 Practice for Performance Evaluation and Long-Term Stability of Computed Radiography Systems

E2446 Practice for Classification of Computed Radiology Systems

E2597 Practice for Manufacturing Characterization of Digital Detector Arrays

E2698 Practice for Radiological Examination Using Digital Detector Arrays

E2737 Practice for Digital Detector Array Performance Evaluation and Long-Term Stability

2.2 *Other Standards:*

ISO 12639:2004 Graphic Technology – Prepress digital data exchange – Tag Image File Format for Image Technology (TIFF/IT)

TABLE 1 Field Listing

Field Number[A]	Field Name and Description	Category Sets, Values and Units[B]
Header Information:		
1[C,D]	Intermediate file name	Alphanumeric string
2[C,D]	Format revision code	Alphanumeric string
3[C,D]	Format revision date	yyyy/mm/dd
4[C,D]	Source file name	Alphanumeric string
5	Examination file description notes	Alphanumeric string
6[C,D]	Examining company/location	Alphanumeric string
7[C,D]	Examination date	yyyy/mm/dd
8	Examination time	hh/mm/ss
9[C,D]	Type of examination	Alphanumeric string
10	Other examinations performed	Alphanumeric string
11[C,D]	Operator name	Alphanumeric string
12[C,D]	Operator identification code	Alphanumeric string
13[C,D]	ASTM, ISO or other applicable standard specification	Alphanumeric string
14	Date of applicable standard	yyyy/mm/dd
15[C,D]	Acceptance criteria	Alphanumeric string
16	Notes	Alphanumeric string
Examination System Description:		
17	Examination system manufacturer(s)	Alphanumeric string
18	Examination system model	Alphanumeric string
19	Examination system serial number	Alphanumeric string
Source Section:		
20[C,D]	Radiologic source manufacturer	Alphanumeric string
21[C,D]	Radiological source model	Alphanumeric string
22	General source description	Alphanumeric string
23	Last calibration date	Alphanumeric string
24	Notes on source section	Alphanumeric string
Image Receptor Section:		
25[C,D]	Receptor type	Alphanumeric string
26[C,D]	Convertor type	Alphanumeric string
27	Receptor manufacturer	Alphanumeric string
28	Receptor model number	Alphanumeric string
29[C,D]	Notes on receptor section	Alphanumeric string
Exposure Section:		
30[C,D]	Peak radiation energy used, or	kV
31[C,D]	Isotope source (use either 30 or 31)	Alphanumeric string
32	Tube current	mA
33	Radiation dosage rate	mR/min
34	Radiation exposure time	min
35[C]	Source-detector distance (SDD)	m
36[C]	Source-object distance (SOD)	m
37[C]	Image magnification of source side of examination object	%
38[D]	Notes on exposure section	Alphanumeric string
Processing Section (Film/Paper):		
39[D]	Process description	Automated or manual
40[D]	Process method	Wet or dry
41	Processor type	Alphanumeric string
42	Processor model number	Alphanumeric string
43	Notes on processor section	Alphanumeric string
Image Processing Description:		
44[C,D]	Image processing used for image data	Alphanumeric string
45	Image processor hardware manufacturer	Alphanumeric string
46	Image processor hardware model	Alphanumeric string
47	Image processor software source	Alphanumeric string
48	Image processor software version	Alphanumeric string
49[D]	Pixel resolution	Pixels per cm
50	Notes on image processor	Alphanumeric string
Examination Sample or Part Description:		
51[C]	Sample or part name	Alphanumeric string
52	Sample or part name description	Alphanumeric string
53[C]	Sample or part identification code	Alphanumeric string
54[C]	Sample or part material	Alphanumeric string
55	Notes on sample or part	Alphanumeric string
56[C]	Number of image segments for sample	Integer number
57[C]	Reference standard identification	Alphanumeric string
58	Reference standard description	Alphanumeric string
59[C]	Reference standard file name	Alphanumeric string
60	Reference standard file location	Alphanumeric string
Coordinate System and Scan Description:		
61[F]	Machine coordinate system scan axis	Alphanumeric string
62[F]	Machine coordinate system index axis	Alphanumeric string
63[F]	Machine coordinate system *z*-axis	Alphanumeric string
64[F]	Part coordinate system *x*-axis	Alphanumeric string
65[F]	Part coordinate system *y*-axis	Alphanumeric string
66[F]	Part coordinate system *z*-axis	Alphanumeric string