135 CODED DATA FIELD: ELECTRONIC RESOURCES

Field Definition and Scope

This field contains coded data relating to electronic resources.

Repeatable when more than one type of file/software program is described in the same record.

This field was designed prior to the release of the FRBR and IFLA LRM, therefore, all data from this field are relevant for pre-FRBR/IFLA LRM or non-FRBR/IFLA LRM context.

According to the FRBR/IFLA LRM, some data in this field are preferably carried in the linked authority data (see Related Fields) describing the relevant related entity unless the information pertains to the manifestation.

Subfields & Occurrence

Field/Subfield	Field/Subfield Name	Repeatability	Occurrence
135	CODED DATA FIELD: ELECTRONIC RESOURCES	R	O
a	Coded Data for Electronic Resources	NR	O

Indicators

Indicator	Value	Description
1	#	blank (not defined)
2	#	blank (not defined)

Subfields Description

$a Coded Data for Electronic Resource

Codes indicate the aspects of the electronic resource.

The subfield is 13-characters in length. Not repeatable.

Subfield $a fixed-length data elements:

Name of Data Element	Number of Characters	Character Positions
Type of Electronic Resource	1	0
Special Material Designation	1	1
Colour	1	2
Dimensions	1	3
Sound	1	4
Image Bit Depth	3	5-7
Number of File Formats	1	8
Quality Assurance Target(s)	1	9
Antecedent/Source	1	10
Level of Compression	1	11
Reformatting Quality	1	12

Notes on Field Contents

If coding is not attempted for this data element, the field should not be present.

$a/0 Type of Electronic Resource

1-character code indicates the type of data file.

a	numeric	A data file that contains mostly numbers or representation by numbers, such as records containing information on student test scores, information on

		football team statistics, etc. The information may be original surveys or information that has been summarized or statistically manipulated.
b	computer program(s)	A data file that contains an ordered set of instructions directing the computer to perform basic operations and identifying the information and mechanisms required. This category includes videogame and microcomputer software and computer models.
c	representational	A data file that contains pictorial or graphic information that can be manipulated in conjunction with other types of files to produce graphic patterns that can be used to interpret and give meaning to the information.
d	text	A data file that contains mostly alphabetic information (words or sentences) converted into a coded format that can be processed, sorted, and manipulated by machine, and then retrieved in many optional formats. This category includes such information as bibliographic files and files containing literary texts. and (in records created before the introduction of code e) bibliographic files.
e	bibliographic data	Code e indicates that the resource consists of data with bibliographic citations. This includes data from library catalogues or citation databases. The data may be in a structured or unstructured form.
f	font	Code f indicates a resource contains information for a computer to produce fonts.
g	game	Code g indicates that the resource is a game, intended for recreational or educational use. Generally games consist of text and software. Videogames are included here.
h	sound	Code h indicates that the resource consists of data encoding sounds produced by the computer.
i	interactive multimedia	Code i indicates that the resource described by the record supports navigation through and manipulation of many kinds of media (i.e. audio, video, etc.).
j	online system or service	Code j indicates that the described resource is an online system or service and may contain non-bibliographic information. An online system or service supports system-based user interaction. Examples of these are: online library systems; FTP sites; electronic bulletin boards; discussion groups/lists; World Wide Web sites, network information centres.
u	unknown	The type of data file is not known.
v	combination	A data file with different types of content.
z	other	A type of data file for which no specific code has been assigned.

$a/1 Special Material Designation

1-character code indicates the type of data carrier.

a	cartridge magnetic tape	Removable module containing a secondary storage medium such as magnetic tape.
b	computer chip cartridge	Removable module containing a miniaturized electronic circuit, mass-produced on a tiny chip or wafer of silicon, designed to provide additional processing, memory, or storage capacity to a computer. Includes several types of solid-state, memory/storage devices such as non-rewritable ROM-chip cartridges and rewritable flash drives (e.g. USB keys).
c	computer optical disc cartridge	Removable module containing one or more nonmagnetic discs used to store digital information.
d	computer disc, type unspecified	A disc whose type is not specified.
e	computer disc cartridge, type unspecified	A disc cartridge whose type is not specified.
f	computer magnetic cassette tape	Removable module, somewhat like an audio cassette, that contains magnetic tape that can be written on and read from by a tape drive.

h	magnetic tape for main-frame computers	Removable spool containing magnetic tape that can be written on and read from by a tape drive.
j	magnetic disk	Digital information storage medium usually consisting of a thin Mylar disk coated with a magnetic material that permits the recording of data. Magnetic disks come in various sizes. They are also known as floppy disks, stiffy disks, computer diskettes, or floppy diskettes.
k	computer card	A card containing digitally encoded data designed for use with a computer.
m	computer magneto-optical disk	Erasable or semi-erasable storage medium, similar to a CD-ROM disc, capable of storing data at a very high density. The disc is written to and read from using a laser beam used to heat the recording surface to a point at which regions of the surface of the disk become magnetically aligned to store bits of data
o	computer optical disk	Medium that uses a series of laser-burned micron-sized holes (pits) on a special recording surface to store data. Recorded data is read optically. These discs are usually a read-only medium. Commonly found computer optical disc formats include: CD-A, CD-I, CD-R, CD-ROM, CD-ROM-XA, DVD-ROM and Photo CD.
r	online	A special material designation for digital resources that are accessed, processed, executed, etc. remotely.
s	standalone device	Standalone devices consist of storage and reader components as an integrated standalone device. The data storage medium cannot be removed from the playback device with which it is issued. The data carried on the medium can only be read using the integrated special-purpose device.
u	unknown	Special material designation for the digital resource is not specified, e.g., it may be a digital resource that changes its medium over time.
z	other	None of the other codes is appropriate.

$a/2 Colour

1-character alphabetic code indicates the colour characteristics of an electronic resource.

Use blank if this data pertains to FRBR/IFLA LRM entity other than the Manifestation.

a	one colour	The resource is in a single colour. Does not include black-and-white and greyscale.
b	black-and-white	The resource is in black-and-white only (i.e., only on two levels).
c	multicoloured	The resource is in more than one colour.
g	greyscale	The resource is in a large number of shades of grey.
m	mixed	The resource is in a combination of black-and-white, greyscale, and/or colours.
n	not applicable	The colour characteristics do not apply.
u	unknown	
z	other	The resource has colour characteristics not covered by the other defined codes. Includes stained, tinted, toned (e.g., sepia).
#	value position not needed	According to cataloguing rules based on IFLA LRM, this data is not needed at the manifestation level.

$a/3 Dimensions

1-character alphabetic code used to indicate the dimensions of the medium used to encode the electronic resource. Only the most common dimensions are indicated. In many cases, the dimensions apply to the container in which a magnetic or optical medium is encased.

a	3½ in.
e	12 in.
g	4¾ in. or 12 cm.
i	1 1/8 x 2 3/8 in.
j	3 7/8 x 2 1/2 in.
n	Not applicable
o	5¼ in.
u	Unknown
v	8 in.
z	Other

$a/4 Sound

1-character alphabetic code indicates whether the production of sound is an integral part of an electronic resource.

Use blank if this data pertains to FRBR/IFLA LRM entity other than the Manifestation.

#	no sound (silent)	
a	sound on medium	
u	unknown	
x	value position not needed	According to cataloguing rules based on IFLA LRM, this data is not needed at the manifestation level.

$a/5-7 Image Bit Depth

3-character numeric code which indicates the exact bit depth of the scanned image(s) that comprise the electronic resource, or a three-character alphabetic code which indicates that the exact bit depth cannot be recorded. Bit depth is determined by the number of bits used to define each pixel representing the image.

The proposed definitions for bit depth require that if the exact bit depth is not known, or if there are multiple images with varying bit depths comprising the electronic resource, either "---" (unknown) or "mmm" (multiple) is used. Only exact bit depth information should be given.

001-999	exact bit depth
mmm	multiple (more than one image type)
nnn	not applicable
---	unknown

$a/8 Number of File Formats

1-character alphabetic code indicates whether the file(s) which comprise(s) the electronic resource are of the same format or type for digitally reformatted materials.

a	one file format
m	multiple file formats
u	unknown

$a/9 Quality Assurance Target(s)

1-character alphabetic code indicates whether quality assurance targets have been included appropriately at the time of reformatting/creation of the electronic resource. Commonly found quality control targets for scanning include the Kodak Q13 or Q14 Color Separation Guide and Gray Scale; Kodak Q60 Color Input Target; AIIM Scanning Test Chart #2; and the RIT Alphanumeric Resolution Test Object. Commonly found quality assurance targets for re-recording/transfer of audio files include reference and azimuth tones.

a	absent

n	not applicable
p	present
u	unknown

$a/10 Antecedent/Source

When the resource is coded "a", "original" refers to a non-reformatted original. This could be a book, a manuscript, a sheet of paper or vellum, etc. When applying this byte to photography, the concept of "original" must take the creator's intention into consideration; because it is often the photographic print which is the finished piece and not the camera negative.

a	file reproduced from original
b	file reproduced from microform
c	file reproduced from electronic resource
d	file reproduced from an intermediate source other than microform
m	mixed
n	not applicable
u	unknown

$a/11 Level of Compression

1-character alphabetic code indicates what level of compression the electronic resource has been subjected to.

a	uncompressed
b	lossless
d	lossy
m	mixed
u	unknown

$a/12 Reformatting Quality

1-character alphabetic code indicates the general physical features and intended use of a reformatted electronic resource, distinguishing between files intended for access to original resources from those intended to preserve (and possibly replace) the original resource.

Reformatting quality information is similar to that conveyed in the *130 Coded Data Field: Microforms – Physical Attributes* subfield $a/9 (Generation) where distinctions are made between master, printing, service, and mixed copy microforms.

a	access	Indicates that the electronic resource is of a quality that will support current, electronic access to the original item, but not sufficient to serve as a preservation copy.
n	not applicable	
p	preservation	Indicates that the electronic resource was created via reformatting to help preserve the original item.
r	replacement	Indicates the electronic resource is of very high quality and, when printed out, viewed on screen or played via a listening device, could serve as a replacement should the original be lost, damaged, or destroyed.
u	unknown	

Examples

EX 1
135 ##$adrbn#---aaaaa
An online ($a/1: r) text ($a/0: d) file, which is black-and-white ($a/2: b). It has no physical dimensions ($a/3: n) and no sound ($a/4: #). Image bit depth is unknown ($a/5-7: ---). It is in one file format ($a/8: a). Quality assurance targets are absent ($a/9: a). The file was reproduced from an original ($a/10: a). It is uncompressed ($a/11: a). It is for access only ($a/12: a).

EX 2
135 ##$acrmn#mmmmucda
An institution is running a scanning project related to the birds of North America. The books scanned in this project have both black-and-white and colour images. Master files of the books are being created, but the institution has also made a decision to create separate "access versions" for easy accessibility via the Internet. To accomplish this, the decision has been made to make the text pages available as bitonal (b/w) images, but because the colouring of the birds is important to capture and make available, the colour plates will be made available as true-colour, compressed images. The 135 field is for an access version derived from an electronic resource of a digitally reformatted original, stored remotely, and accessed over a computer network. The access file is comprised of both 24-bit colour and 8-bit bitonal images (no sound) which have been compressed using JPEG (a lossy compression system). It is not known if this access version contains quality control targets.
EX 3
135 ##$adugn#008apabr
A research library is reformatting a set of high-use, but brittle, early nineteenth-century books as a preservation project. Because the poor physical condition will likely withstand only one preservation action, the bibliographer, in consultation with the preservation staff, has decided that these text-only ($a/0: d) volumes would be best replaced ($a/12: r) via high-quality digitisation ($a/10: a). The institution will create a master file for preservation purposes, which it has committed to storing, refreshing and migrating over time. The original volumes will be discarded after digitisation and quality control has been completed. The image files will be greyscale images ($a/2: g), 8 bpp ($a/7: 8), and saved as TIFF images (a lossless compression scheme ($a/11: b)). Quality control targets (a Kodak Grayscale bar and resolution targets) will be included at the time of scanning ($a/9: p). The 135 field for the master files of the set reflects the digitised version of the original, reformatted (and replaced) during preservation. The electronic resource comprises greyscale TIFF images only (no sound ($a/4: #)) which were scanned at a bit depth of 8 bits per pixel ($a/5-7: 008), including quality control targets and is compressed using lossless compression. Because this file was created to replace the original volumes, the medium on which the file is stored will vary as it is refreshed and migrated to new systems to remain accessible ($a/1: u).
EX 4
135 #$ahrnnannnaaadn
An online MPEG3 file consisting of sound only.
EX 5
135 ##$adoag#001aambr
A digitised version of a journal, reformatted from microform and partly from original (135$a/10: m) for access and preservation; its quality justifies using it as replacement of the original (135$a/12: r). The electronic resource is comprised of bitonal ($a/2: a) TIFF images only (135 $a/8: a) (no sound) ($a/4: #) which were scanned at a bit depth of 1 bit per pixel (135 $a/5-7: 001), not including quality control targets (135 $a/9: a) and is compressed using lossless compression (135$a/11: b). The master file is stored on CD-ROM ($a/1: o; $a/3: g) and may be migrated to new systems to remain accessible.
EX 6
135 ##$adumn#mmmmpabp
A digitised book, reformatted from original (135$a/10: a) for preservation (135$a/12: p). The electronic resource is comprised of greyscale and colour ($a/2: m) images (135 $a/08: m) (no sound) ($a/4: #) which were scanned at multiple bit depths (135 $a/5-7: mmm), including quality control targets (135 $a/9: p) and is compressed using lossless compression (135$a/11: b). The master file is stored on changing servers ($a/1: u; $a/3: n) while being migrated to new systems to remain accessible.

Related Fields

UNIMARC/Bibliographic format

183 CODED DATA FIELD: TYPE OF CARRIER	
203 CONTENT FORM AND MEDIA TYPE	
230 MATERIAL SPECIFIC AREA: ELECTRONIC RESOURCE CHARACTERISTICS	
231 DIGITAL FILE CHARACTERISTICS [PROVISIONAL]	
283 CARRIER TYPE	
336 TYPE OF ELECTRONIC RESOURCE NOTE	
337 SYSTEM REQUIREMENTS NOTE (ELECTRONIC RESOURCES)	
UNIMARC/Authorities format	
147 CODED DATA FIELD: COLOUR AND SOUND CONTENT	In the case of LRM compliant cataloguing, information related to colour and sound content should be entered in field 147 in expression entity records. Information pertaining to the manifestation level should be entered in field 135.

History

1998	Field issued/re-issued with corrections/additions
2000	Field issued/re-issued with corrections/additions
2002	Field issued/re-issued with corrections/additions
2017	Changes for colour indicator
2019	Additions, renamed codes in $a/1. Added section Related Fields.
2020	Changes to scope of note, subfield $a positions 2 and 4 and Related fields.
2023	Text edit.