BIC Digital Audiobook Best Practice

All Documents

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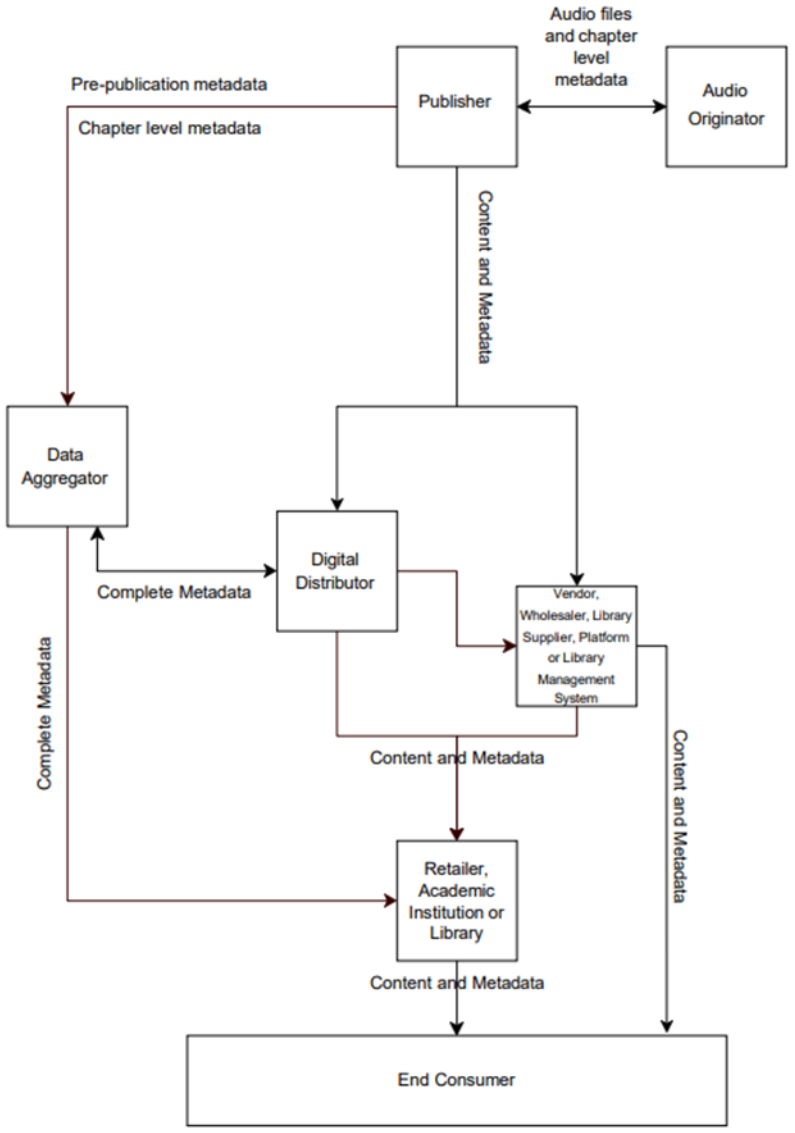
This document provides a detailed standards and best practice overview of the digital audiobook supply chain.

BIC Digital Audiobook Best Practice

Current High Level Supply Chain Workflow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Complete Metadata
Content and Metadata
Content and Metadata
Retailer, Academic Institution or Library
Content and Metadata
End Consumer

The purpose of these notes is to provide some context to the Workflow Diagram. Please note that not all workflows will exist at the same time. They are dependent on the stakeholders and the specific trading requirements.

'Audio Originator' generated content includes audio files and chapter level metadata. 'AI' or 'Artificial Intelligence' has not been differentiated on the workflow. 'AI' is simply another form of 'Audio Originator'.

The Workflow Diagram does not distinguish the different audio file types (such as WAV) or metadata formats (such as ONIX). Files may or may not conform to recognised industry standards. Standards compliance will drive levels of automation.

'Metadata' can include cover images and supplementary files.

The movement of sales data has been excluded from the diagram. This project is focused solely on the flows of digital audiobook content and metadata.

Updates to content and metadata will follow similar paths to those on the diagram, so have not been replicated.

For simplicity and clarity, the workflow does not include the various feedback loops. The primary ones are listed below and can be bi-directional:

- 'End consumer' to 'Retailer', 'Academic Institution', or 'Library'.
- 'End Consumer' to 'Vendor', Wholesaler', 'Library Supplier', 'Platform' or 'Library Management System'.
- 'Retailer', 'Academic Institution' or 'Library' to 'Digital Distributor'.
- 'Digital Distributor', 'Vendor', 'Wholesaler', 'Library Supplier', 'Platform' or 'Library Management System' to 'Publisher'.
- 'Audio Originator' to 'Publisher'.
- 'End Consumer' to 'Publisher'.

Stakeholder Roles: These roles are multipurpose. Their place in the workflow is dependent on the supply chain model and the other stakeholders involved.

Academic Institution: An educational establishment dedicated to scholarly learning.

Academic Supplier: A supplier of audiobooks to academic institutions.

Audio Originator: The creator of the audiobook. The source material is usually a book (published or pre-publication). However, other sources can include podcasts, radio and television programmes or specially produced, straight to audio, material.

Data Aggregator: An organisation that collects audiobook product metadata. This is validated against recognised industry standards and made available on a commercial basis to other interested parties.

Digital Distributor: An organisation responsible for the delivery of audiobook files to libraries, retailers, wholesalers, academic institutions and online platforms on behalf of publishers. The publishers are not necessarily owned by (or own) the digital distributors.

End Consumer: Someone who listens to audiobooks on CD, via digital download or a digital stream. The assumption is that the end consumer pays per download, stream or CD (or has a subscription to an audiobook service (paid or unpaid)).

Library: A collection of books and related items such as newspapers, periodicals, audio and visual materials. These collections are either physically housed in rooms or buildings or increasingly curated online. The collections are made available for use or borrowing by library patrons – members of the public or members of a specific business, institution or group, dependent on the library's purpose (public, corporate, academic).

Library Management System: A system used to manage library acquisitions, cataloguing, loans and borrowings.

Library Supplier: A wholesaler which specialises in supplying library and sometimes school customers. Library suppliers usually provide selection or bundling of suitable products and cataloguing services.

Platform: A digital service making audiobooks available to consumers.

Publisher: A business responsible for bringing audiobooks to the market.

Reseller: An intermediary retail organisation such as a wholesaler, library supplier or retailer that makes digital audiobooks available to

consumers on behalf of publishers. Done on a business to business or business to consumer basis.

Retailer: An organisation selling goods, such as digital audiobooks, to the end consumer. A retailer can sell through physical ('bricks and mortar') bookshops or may operate a direct sales operation (such as a book club). Increasingly, retailers sell both physical and digital products through online stores.

Vendor: An organisation offering a product or service for sale or loan on a commercial basis. The vendor fulfils roles in different supply chain models. These include direct to consumer, direct to government and business to business.

Wholesaler: In the book industry, a business that has the attributes of a distributor and a retailer.

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Glossary

The Glossary has been updated to include audiobook related businesses (pages 14 - 18) as well as a list of roles and responsibilities (page 19 onwards) in separate sections.

Inclusion of named retailers, resellers, platforms or service providers in this document does not confer any special status. For further information about individual businesses, please contact the businesses directly.

Please be aware that many of the terms in this glossary are not digital audiobook specific (nor are they necessarily ONIX specific). They have a meaning in the wider book industry that may differ in some specific ways to that in the audiobook supply chain. Even here, the definition may vary according to the context or the organisation.

0dBFS or Decibels Full Scale: The highest signal level achievable in a digital audio file recorded in industry standard WAV format.

AAC or Advanced Audio Coding: A compressed and lossy audio coding standard, with slightly higher sound quality than MP3 for a given bit rate. Considered by some as a successor to MP3.

Abandoned: Describes the status of a product that was cancelled prior to release. This is not an ONIX status. ONIX refers to 'cancelled'.

Abridged: The shortened audiobook narration or dramatisation of a book.

Academic: Describes that area of the book industry focused on study and scholarly learning.

Accessible E-book: An accessible e-book is a digital publication which can be read and understood by anyone, regardless of the sensory mode they use to access the content. The contents have been encoded in such a way that it does not prevent any text, image, chart, graph, map etc., being accessible via suitable reading devices. So, this includes the ability to resize and change fonts and images without a loss of understanding, or it can be listened to via text-as-speech technology or via touch using something like a braille reader. Any included image needed to understand the contents must have an alternative description that can be interpreted by suitable reading devices. If an e-book with no images does not allow text-to-speech, then there should be clear metadata that links the e-book to the audiobook version.

Active: Describes the status of a product that has been released and has entered the supply chain (and has not been declared 'out of print' or 'permanently withdrawn from sale').

Adapted: Content that has been modified to suit a different audience or purpose, for example, a dramatisation of a work of fiction.

Adoption: Implementation of a standard or bespoke set of work practices.

AI or Artificial Intelligence: A computer system able to carry out tasks that normally require human intelligence. For audiobooks, this may mean a non-human narrator.

AIFF or Audio Interchange File Format: An uncompressed lossless audio file format standard.

ALAC or Apple Lossless Audio Codec: A compressed but lossless audio file format standard.

App or Mobile App: An application. Usually downloaded by the user to a smartphone or tablet.

Audio: Relating to sound.

Audiobook: The recording of, usually, a book being read (or performed) out loud. It can be on CD, digital download or digital stream. The text can be abridged or unabridged and have a single reader, a cast of voice actors or synthetic voice(s).

Audiobook Package: This collectively describes the content (audio files) and the resources (cover image, minimal metadata - e.g., title, author – and any supplementary materials such as an accompanying PDF) that make up the final product as delivered to the consumer.

Audio Sample: A short extract from an audiobook, generally used for marketing purposes.

Availability: Defines the status of an audiobook at a specific distributor or reseller. Availability information should be updated as the underlying status changes.

Backlist: A published audiobook that has been on sale for more than a number of months (depending on the publisher, between 3 – 12 calendar months).

Back Office System: A collective way of describing those computer systems carrying out a wide variety of business operations, including but not limited to, finance, order fulfilment and distribution.

Bespoke: Non-standard, tailored to the needs of a specific organisation. It may refer to an audio file format, metadata standard or audio package format.

Best Practice: A set of principles that govern a concept, process or way of working that is recognised as delivering the best results. Best practice may become the standard or default over time.

Bit Depth: For each audio sample, the bit depth determines how many possible loudness values can be recorded. Most audiobooks are 16 bit.

Bit Rate/ Bitrate: The number of bits (digital data) stored or transmitted per second, often stated as Kbps or Mbps for thousands or millions of bits per second. Bit rate (for uncompressed audio) is the product of **bit depth** and **sample rate**. Compression (e.g., into an MP3 file) can alter this relationship. For a given codec, fewer bits per second implies a more compressed file, with lower quality but smaller file size.

Block: The term used within ONIX to refer to high-level composites used to arrange data functionally within a product record. There are eight blocks plus a minimal preamble (which is informally known as ‘block zero’). A product record may contain all the relevant blocks.

Block Update: An update to an ONIX metadata record. A block update contains the preamble (block zero) plus the blocks within which there are one or more data elements that have changed since the previous ONIX message was sent. An ONIX product record contains 8 or 9 blocks, and each block can be updated independently of the others.

Block 3: In ONIX. Rich, chapter level metadata carried in the ONIX record for the whole audiobook product. Note that Block 3 does not describe the relationship between the chapters and the files which make up the audiobook. It solely concerns chapter names and timecodes.

Block 8: In ONIX. Carries information about the manufacture and production of audiobook products (also e-books and POD print books). Block 8 includes a manifest of the files required to assemble the product. Together with Block 3, it can indicate the relationship between files or CDs and chapters. Block 8 is not yet widely adopted.

Cancelled: Describes the status of a product that was abandoned prior to publication or release.

CD or Compact Disc: See 'Red Book'. A physical disc used for storage of digital audio, including music and spoken word. The standard format holds circa 80 minutes of audio. The physical format has been adapted for data and other digital media (see 'Yellow Book').

CD-Quality: Synonymous with high-quality recordings. CD quality is often the standard against which other audio is compared because the audio on a CD is not compressed.

CD-ROM or Compact Disc Read Only Memory: See 'Yellow Book'. Contains read only data.

Chapter: Separates the audiobook into more manageable parts corresponding to the chapters, parts or sections in the print or e-book. The number of chapters may or may not align one-to-one with the number of audio files comprising the product.

Chapter Level Metadata: A document indicating the titles of individual chapters of the audiobook, chapter authors, page ranges or timecodes, and other supporting metadata that relates to the individual chapter. Note there is no necessary direct relationship between chapters and files. Chapter level metadata can be carried in ONIX Block 3.

Chunking: The splitting of an audiobook recording into multiple files for production and supply chain purposes. Audiobook chunks/ files may not correspond to chapters in the audiobook. The size of a chunk may be dictated/ informed by operational constraints. There may be many chapters per file, or several files per chapter.

Clipping: Also called 'digital clipping'. Clipping occurs when a digital signal peak reaches or rises above 0dBFS (Decibels Full Scale) and creates undesirable distorted sounds.

Codec: A device or more usually software that compresses data to enable faster transmission and decompresses the received data. Usually, significant compression is accompanied by a loss of audio quality. Examples of codecs include MP3 and AAC.

Compression: A mechanism for reducing the amount of digital data in a file to enable faster transmission. Compression may or may not reduce audio quality (see lossless/ lossy), depending on the compression format. Where there is a loss of quality, this is permanent.

Content: The audio material (recording) comprising an audiobook.

Content Management: At a high level, the set of processes for creating, organising and distributing audiobook content.

Cover Image: A photograph or illustration representing the audiobook online or incorporated in the audiobook package.

DAM or Digital Asset Management: A digital asset management system manages the ingestion and storage of digital assets such as audio files, their cataloguing and metadata, search and retrieval, and sometimes distribution. DAMs can be structured like a library aimed

at simplifying the reuse of assets, or as a workflow tool forming part of a production system.

dB or Decibel: Loosely, the unit of measurement for sound volume.

dBFS or decibel Full Scale: Not to be confused with 'dB' or 'decibel' in the above entry. 'dB' is an analogue measurement whereas dBFS is the digital measurement. 0dBFS is the highest signal level achievable in a digital audio file recorded in industry standard WAV format. If the signal exceeds 0, then the top portion of the incoming waveform will simply be 'clipped' off and lost. This will distort and damage a recording in a way that is both unpleasant to the ear and irreversible. For these reasons, audio engineers take great care to avoid it.

Delivery Manifest: In metadata, a list of files or other resources (e.g., those required to assemble the completed product). For example, ONIX Block 8 comprises a file manifest and some detailed processing instructions or product specifications.

Delta Update: In the context of ONIX, a set of updated metadata records, one full record per product where one or more metadata element has changed since the previous ONIX message was sent. Contrast with a full set of metadata records (which includes product records that have not changed), and with a Block update, which does not contain whole records but only *parts* of records that contain changes.

Digital: Recorded, stored, processed or reproduced electronically from numerical data.

Digital Asset Management or DAM: A digital asset management system manages the ingestion and storage of digital assets such as audio files, their cataloguing and metadata, search and retrieval, and sometimes distribution. DAMs can be structured like a library aimed at simplifying the reuse of assets, or as a workflow tool forming part of a production system.

Digital Audiobook: The recording of, usually, a book being read (or performed) out loud. It is delivered as a digital download or digital stream. The text can be abridged or unabridged and have a single reader, a cast of voice actors or synthetic voice(s).

Dramatised: Usually an adapted version of an original book, using voice actors to represent the characters. Dramatised versions may include sound effects and music. Some versions will adhere more closely to the original plot than others.

DRM or Digital Rights Management: Usually refers to technical protection measures (e.g., encryption or watermarking of the content), that are used to enforce or monitor compliance with the licence to use an audiobook. DRM can for example prevent or limit copying and redistribution of the digital content, sharing and lending, and can also place a time limit on the use of the content to enable rentals. DRM is intended to protect intellectual property from copyright infringement but can also (often inadvertently) prevent usages that are specifically allowed by copyright exceptions.

Dynamic Range: For audio, the difference between the quietest and loudest sounds. The dynamic range of real-world sounds is generally larger than the maximum dynamic range that can be recorded on a CD or in a digital audio file, so sounds are often "compressed" (the quietest sounds are boosted, the loudest quietened) when mastering an audiobook. This compression is different from file compression.

eAudiobook: Sometimes just 'E-audio'. See Digital Audiobook.

E-book: An electronic book. Has the attributes of a physical book (cover, table of contents,

chapters with text and images, product identifier), but is in digital rather than physical form. E-books are available in a number of different formats (including EPUB, Kindle and PDF) and can be downloaded to smart phones, e-readers, tablets, computers or accessed online.

Edition: Loosely, the version of a published book. More precisely, the edition may relate to the format ('the audiobook edition') or refer to content updates leading to a new edition being published ('the third edition', 'the abridged edition').

Embargo: Proscription of sales, or sometimes of publication reviews, of a book prior to a particular date.

File: An electronic container storing information.

File Manifest: A document containing a list of files that comprise a single digital audiobook.

File Segment: [to be confirmed].

FLAC or Free Lossless Audio Codec: A compressed but lossless audio coding format.

Forthcoming: A publishing status, meaning not yet published and available in the supply chain (though advance orders can be accepted).

Frontlist: The range of forthcoming and recently published audiobooks that a publisher is actively promoting and selling. Between 3 – 12 months after publication (depending on the publisher), they become part of a publisher's Backlist.

Full Feed: A metadata message containing (usually) a publisher's complete audiobook catalogue. See also Delta Update, Block Update.

Hertz: A unit of frequency (1 cycle per second). Refers to any type of waves. Audio data/ soundwaves are usually in the range of 20 to 20,000 Hz.

ID3 Tag: An electronic container holding some limited metadata. Usually contained in MP3 files, holding the title and contributor(s) of an audiobook or music track as an example.

ISBN or International Standard Book Number: A thirteen-digit product identifier for books in physical, e-book and audiobook formats. Administered by the International ISBN Agency and numerous affiliated national agencies (including Nielsen BookData in the UK and Ireland). Publishers apply for ISBN allocations through their local ISBN Agency. Used for book discovery, ordering and tracking sales, the ISBN is unique to a specific title, edition and format combination, and cannot be re-used.

JPEG/ JPG: A commonly used compressed and lossy digital image format created by the Joint Photographic Experts Group.

Kbps or Kilobits per Second: The number of thousands of bits (a unit of digital data) per second in a digital file or stream. This is a measure of how much data can flow in a specified time period, and by extension a guide to the quality of an audio file.

Lossless: Any digital format in which no audio quality is lost during encoding or decoding.

Lossy: Any digital format where audio quality is lost during encoding or decoding. Compression in a lossy digital format results in some of the sound data being discarded to reduce the file size, resulting in a loss of quality (even if it isn't audible). The lossy audio file

will be different to the master version.

LUFS or Loudness Units relative to Full Scale: A measurement of the average loudness of a sound signal, based on the human perception of loudness.

Manifest: In metadata, a list of files or other resources, e.g., those required to assemble the completed product. For example. ONIX Block 8 comprises a file manifest and some detailed processing instructions or product specifications.

Manual Intervention: Requiring a human to step in either to link up separate processes or to fulfil an action that allows processes to continue.

Master File: An original audiobook file, usually in an uncompressed format from which lower quality, compressed versions can be made.

Mastering: The processing of audio data after the initial recording and editing, to optimise the equalisation and loudness, limit the dynamic range and create the 'master' from which all future copies are made.

Metadata: A set of data that describes and gives information about an audiobook product. A distinction can be drawn between 'file metadata' (technical detail about the audio file format, codec, bitrate etc.) and 'content metadata' (the title, author, chapters, etc. of the audiobook product itself). Another distinction can be made between metadata embedded within content (for example, ID3 metadata tags within an MP3 file), and metadata supplied separately from the content (for example, in an ONIX file).

Migration: Transition from one standard or format to another.

Mono: Mono recordings are (broadly) recorded using a single microphone, contain only one channel of audio data, and are usually reproduced by delivering the same audio to both ears.

MP3: A lossy compressed digital file format widely used in audio. MP3s are smaller but of lower audio quality than lossless or uncompressed files. There are a range of qualities of MP3, characterised primarily by their bitrate (i.e., 256 kilobits per second is fairly high quality, 128 kbps is audibly less good). Files are roughly 1 megabyte per minute or less (quality dependent) and can carry minimal metadata content via ID3 tags.

New Title: For the purposes of audiobooks, a new audiobook is one that has been published within the last 3 – 12 calendar months. Frontlist comprises not yet published and new titles.

Noise Floor: The low level of room noise on a recording. This is a problem when it is too high and becomes an audible hiss between spoken words during playback at normal volume, or when it has been completely removed by software and lends the track an unnatural quality.

ONIX or ONline Information eXchange: The international and most widely used standard for capturing and communicating book product information. This includes both physical and digital audiobook metadata.

Online: Meaning electronic or digital or of the internet. In terms of audiobooks, this includes consumed, listened to or purchased via the internet.

Package. This collectively describes the content (the audio files) and the resources (cover image, table of contents and supplementary materials) that make up the whole audiobook product ready for

distribution and sale.

Pay Per Stream. The amount of money or rate of pay generated every time a file is streamed on an audio platform.

PDF or Portable Document Format: A standard file format for electronic documents, originally devised by Adobe as a simplification of PostScript, and now an ISO standard. PDFs are sometimes a supplementary part of the content of audiobook packages.

Peak: The loudest point of an audio track.

Platform: A digital service making audiobooks available to consumers.

Podcast: Made available as a digital audio file for download, a podcast is usually made up of existing episodes and new instalments. Series can be limited in length, seasonal or on going. They take different forms such as interviews, conversations, can be educational or based around current affairs.

Postponed: Describes the status of a product when publication or release has been delayed.

Pre-publication: In advance of publication date. Often abbreviated to 'pre-pub'.

Process: The steps (manual or automated) required to achieve a specific outcome.

Product: Any separately tradable book-form item. This includes audiobooks. In the book trade, each separate product would normally be identified by a different ISBN to facilitate discovery, ordering and sales analysis.

Product Availability: Describes the product's status in the supply chain.

Product Status: As above. Describes the product's availability in the supply chain.

Professional Publishing: Describes that area of the book industry focused on publishing books for bodies and institutions focused on learning, standards and qualifications.

Publication Date: The date on which an audiobook is officially published. For digital audiobooks, this is usually (but not necessarily) the date on which retail consumers can first download or stream the entire audiobook. See also Sales Embargo Date.

Purchase: Digital audiobooks 'purchased' by an end customer are subject to a perpetual licence (which may for example specify a limited right to lend the audiobook). Rentals of audiobooks are simply time-limited licences).

PWfS or Permanently Withdrawn from Sale: The term which reflects the decision by a publisher not to make any further copies of a digital product available to the supply chain. There is no direct link between a physical product being made 'out of print' and the digital product being 'permanently withdrawn from sale'.

ONIX defines the publishing status of 'Permanently Withdrawn from Sale' as "Withdrawn permanently from sale in all markets. Effectively synonymous with 'Out of print', but specific to downloadable and online digital products (where no 'stock' would remain in the supply chain)".

Recording Schedule: A timetable or plan that captures the who, how, what and when of creating an audiobook. It also details pre and post recording steps.

Red Book CD: The standard for CDs (including audiobook CDs). Defined as 16 bits per sample and 44,100 samples per second (or 44.1kHz), in stereo (2 channels) and with 640 megabytes of data per hour. Allows for circa 80 minutes overall.

Retrofit: Apply a current book industry standard to a business process after that business process has been active for a significant period without the standard.

Rights: A general term covering copyright, moral rights and other intellectual property rights, plus contractual rights such as the right to distribute or sell products. So called volume rights give the publisher the right to publish and sell products based on a copyright work and are sometimes divided by language and geographical territory. Subsidiary rights – initially attached to the volume rights but often sub-licenced by the volume rights holder to another publisher – sometimes include the right to publish specialised manifestations such as audio.

RMS or Root Mean Square: A measurement of the average loudness of a sound signal. Some audiobook platforms specify minimum and maximum permitted RMS values.

Royalty: The fee paid (by the publisher) to an author or content creator each time an iteration of their work is downloaded, streamed or purchased in physical form.

Sales Embargo Date: The earliest date on which retailers may sell an audiobook to consumers. Distinct in meaning from the publication date, though it is usually the same actual date. This is the date which determines the release of the audiobook by retailers to consumers. All books and audiobooks have a publication date, but only some have a sales embargo date.

Sample Rate: When converting an analogue sound wave to digital, the sampling rate is the number of measurements taken in each second of sound. Audiobooks are commonly sampled 44,100 times per second (44.1 kHz). The sample rate controls the highest frequency sound that can be recorded.

Sidecar File: An electronic file of *additional* metadata relating to an audiobook file, where that metadata cannot be included in a standard metadata file (e.g., in an ONIX file). In audiobook workflows, the need for sidecar files should diminish as ONIX Block 8 is adopted. Sidecar files are sometimes required when the sender's or recipient's ONIX implementations are incomplete. They are not a good, long-term solution.

Speech Synthesis: Production of human speech by a computer.

Standards: A recognised and authoritative set of guidelines. A point of reference.

Stereo: Stereo recordings have two different audio signals, for two separate audio channels (e.g., left and right loudspeakers), which create a perception of space. Audiobooks are generally mono unless they are multi-voiced.

Stitch: The act of combining separate digital audiobook files, originally sent as multiple tracks, into a smaller number of larger files or tracks. Stitching is also referred to as 'concatenating', 'joining' or 'splicing'. It can be undertaken for several reasons, such as meeting an audiobook platform's requirements on file length (duration) in order to deliver a complete audiobook in a single, very long file for one platform or as several more manageable

files for another.

Stitching can also make for a more consistent user experience. From a technical viewpoint, app developers need to make compromises for in app streaming on mobile devices, such as uninterrupted listening when the mobile or Wi-Fi signal is poor vs. the temporary space available to the app from the device's operating system vs. the ability of the app to encrypt cached audio content on the fly.

Stream: Listen to digital audio via the internet. Usually received to and played on a smartphone or computer using an app or software. The audio is listened to in real time, and the audio recording never exists in complete form on the listener's device. Compressed audio files and improved internet speeds make streaming possible and more reliable.

Strict On Sale Date: Also known as the 'sales embargo date'. Where the publisher wishes to exercise close control over the earliest retail availability of a product, this is the earliest date that a consumer may obtain a copy of the product – though advance orders (pre-orders) may be placed prior to the embargo date.

Studio Quality: A higher quality audio than 'CD quality'. Defined by 48 kHz or 96 kHz recordings and sampling at 24 bits per sample.

Subscription: Depending on the service offering, for a monthly or annual subscription paid in advance, consumers have access to a limited or unlimited number of audiobooks. Subscription packages usually incentivise longer subscription periods.

Supply Chain: Simplistically in the book industry, this comprises all the organisations, individuals and activities that are involved in the creation, manufacture, distribution, sale and return of books and book related products. Also includes the support functions such as Marketing and Finance. The supply chain model will vary according to the type of product (physical/ digital) and who the end consumer is (such as b2b, b2c, b2g).

Territorial Rights: These legally describe where an audiobook product may or may not be sold (and may or may not be made available to borrow).

Timecode: An electronic marker identifying the precise location in an audiobook recording. Sometimes also termed a 'bookmark'.

Transcoding: The conversion of one digital audio encoding format to another (e.g., from MP3 to AAC). With 'lossy' formats, transcoding always involves a further loss of audio.

Unabridged: The full content of a work. Not abridged.

W3C Audiobook Package: A specification, developed by the World Wide Web Consortium for a standardised digital audiobook 'package', primarily for delivery to the end consumer (sometimes called the 'Lightweight Packaging Format' or LPF). In practice, an audiopub package is a zip archive containing the audio (and any other) files and two predefined metadata documents: a manifest listing the files in the package and a table of contents specifying (at minimum) the listening order. Note this is a *delivery* format, not one used at earlier parts of the supply chain, and thus does not overlap significantly with ONIX Block 8. The W3C package specification makes explicit the relationship between chapters and files.

Watermarking: In audio, the addition of extra inaudible data to an audiobook, to allow retrospective identification of the purchaser or licensee in the event of large-scale

infringement of licence terms.

WAV: Waveform Audio File Format. WAV files are almost always uncompressed and lossless. The files are very large and are used within the supply chain but are too large to be the consumer delivery format. Roughly 10 megabytes per minute of audio, with no metadata content.

Yellow Book CD-ROM: The standard that defines the format of CD-ROMs. A CD-ROM contains 650 megabytes of computer data rather than digital audio data.

ZIP: A file format that supports lossless data compression. A ZIP file may contain one or more files or directories. ZIP can be used to bundle together all audio files that make up an audiobook.

BIC Digital Audio Best Practice

Organisations

ACX or Audiobook Creation Exchange: An Amazon-owned audio production and distribution platform aimed predominantly at self-published authors and small publishers.

Apple: Technology company and developer of iTunes. A global platform for digital book and audiobook content.

Audible: Amazon's audiobook and podcast platform.

BA or Booksellers' Association: An industry members association and founder member of BIC.

BDS or Bibliographic Data Services: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. A data aggregator.

Beat Technology: A Norwegian audiobook and e-book platform providing technology services for businesses such as Chapter, Fabel and Skoobe.

Biblio: Virtusales' content and digital asset management system. Holds and manages digital audio assets and metadata.

BIC or Book Industry Communication Limited: An independent organisation set up and sponsored by the Publishers Association, Booksellers Association, the Chartered Institute of Library and Information Professionals and the British Library to promote supply chain efficiency through e-commerce and the application of standard processes and procedures.

BISG or Book Industry Study Group: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. Works for a more informed, empowered and efficient book supply chain in the United States of America. Not for profit.

Bolinda: An audiobook and technology company.

BookBeat: A digital subscription service for audiobook streaming. The service also offers e-books. Both can be downloaded for offline listening and reading.

BooksoniX: A metadata solutions vendor.

Bookwire: An audio production and distribution business.

BorrowBox: An app to manage e-book and eAudiobook borrowings from a library.

Canongate Books: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An independent publisher.

CoreSource: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. A digital distributor widely used by many trade and academic publishers to process and distribute content and metadata to resellers and institutions worldwide. Also converts formats (transcodes) as requested by the client.

De Marque: A digital content ecosystem.

DK or Dorling Kindersley: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher focused on full colour, illustrated publications.

EDItEUR: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. A membership-supported organisation that develops standards such as ONIX, *Thema* and EDItX for the global book supply chain.

Fabel: A website and app for book consumers. Focuses on socialising book content.

Findaway: A US based audiobook content, production and distribution platform cited by academic publishers as one of their distribution partners. Owned by Spotify.

Firsty: A commercial organisation that specialises in direct-to-consumer content delivery in publishing.

Gardners: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. A wholesaler and library supplier.

Glassboxx: An audiobook and e-book direct to consumer solution. Owned by Firsty.

Glose: A social reading platform.

Google Books: A global discovery service for print, e-books and audiobooks. Provides the Google Preview service.

Google Play: A store or distribution service selling audiobooks as well as e-books, apps, tv, films and music.

Hachette: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher and distributor.

HarperCollins: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher and distributor.

Hodder & Stoughton: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher and distributor.

Hoopla: A media streaming platform for audiobooks, comics, e-books, movies, music and tv.

Hummingbird Digital Media: A turnkey e-book and audiobook retailing platform.

Ingram Content Group: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. Provides physical and digital book distribution.

Klopotek: A content and digital asset management system.

Kobo: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. Rakuten's global platform for e-books, audiobooks, e-readers and tablet computers.

Libro.fm: A US based audiobook platform.

Nextory: A Nordic subscription service for audio and e-books. The service is also available in other European markets.

OverDrive: A global distributor of digital content and digital audio content for libraries and schools.

PA or Publishers Association: An industry members association.
Pan Macmillan: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher of physical and digital products.

Penguin Random House: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher and distributor of physical and digital products.

Scribd: A US based audiobook platform.

Skoobe: An e-book platform and app.

Sound Understanding: An audio production company specialising in non-fiction and academic titles.

Spotify: A global music and podcast platform, now entering the audiobook market in earnest with the acquisition of Findaway.

Stison: A metadata solutions vendor.

StoryTel: An international subscription audiobook platform and app. StoryTel has purchased audiobooks.com and audiobooks.co.uk.

Taylor & Francis: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An academic publisher.

uLibrary: A library digital platform for borrowing eAudiobooks and eBooks.

Ulverscroft: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. A publisher and distributor of large print and audiobooks.

Usborne Publishing Limited: A member of BIC's Digital Audiobook Supply Chain Best Practice Project. An international publisher.

W3C: World Wide Web Consortium. This is an international community developing open standards across the web, including CSS, HTML.

XigXag: A consumer-focused audiobook platform and app for trade publishers.

Zebralution: A German digital distribution company for independent record labels, audiobooks and podcasts.

BIC Digital Audio Best Practice

Roles and Responsibilities

Academic Institution: An educational establishment dedicated to scholarly learning.

Audio Originator: The creator of the audiobook. The source material is usually a book (published or pre-publication). However, other sources include podcasts, radio, television programmes and specially produced, straight to audio, material. This is the entity creating the metadata record and commissioning the creation of the audio.

Bookseller: A chain or independent bookshop or retailer. It may also refer to an online entity. The term also denotes an employee of a chain or independent bookshop.

Consumer: Someone who listens to audiobooks on CD, via digital download or a digital stream. The assumption is that the consumer pays per download, stream or CD (or has a subscription to an audiobook service (paid or unpaid)).

Creator: Takes the original published book and creates the audiobook version. The recording of a book being read (or dramatised) out loud can be abridged or unabridged.

Data Aggregator: An organisation that collects audiobook product metadata. This is validated against recognised industry standards and made available on a commercial basis to other interested parties.

Digital Distributor: An organisation responsible for the delivery of audiobook files to libraries, retailers, wholesalers, academic institutions and online platforms on behalf of publishers. The publishers are not necessarily owned by (or own) the digital distributors.

Library: A collection of books and related items such as newspapers, periodicals, audio and visual materials. These collections are either physically housed in rooms or buildings or increasingly curated online. The collections are made available for use or borrowing by library patrons – members of the public or members of a specific business, institution or group dependent on the library's purpose (public, corporate, academic).

Library Patron: A user of a physical or online library service.

Library Supplier: A wholesaler specialising in supplying library and sometimes school customers. Library suppliers usually provide selection or bundling of suitable products and cataloguing services.

Narrator: See 'Reader'. May also be a character named (or functioning as) 'the narrator' within a dramatisation.

Performer (Voice Actor), Lecturer, Speaker: Contributors to various types of audio material.

Publisher: A business responsible for bringing audiobooks to the market. Also responsible for the creation and management of the audiobooks' metadata.

Reader or Read by: A voice actor reading an audiobook out loud. The role may also be performed by an AI-based synthetic voice reader. Not to be confused with 'Narrator', a role in a dramatisation.

Recording Studio: A location for recording sound. Designed to optimise sound quality.

Reseller: An intermediary retail organisation such as a wholesaler, library supplier or retailer that makes digital audiobooks available to consumers on behalf of publishers. Done on a

business to business or business to consumer basis.

Retailer: An organisation selling goods, such as digital audiobooks, to the end consumer. A retailer can sell through physical ('bricks and mortar') bookshops or may operate a direct sales operation (such as a book club). Increasingly, retailers sell both physical and digital products through online stores.

Specialist: An organisation with a specific focus in the book industry.

Studio: A location for creating and recording (and often editing) audiobook content. Designed to deliver the best sound quality.

System Supplier: A specialist organisation providing computer hardware and/ or software to fulfil specific business functions.

Vendor: An organisation offering a product or service for sale or loan on a commercial basis. The vendor fulfils roles in different supply chain models. These include direct to consumer, direct to government and business to business.

Voice Actor. An actor reading an audiobook aloud, or performing a dramatised audiobook, as part of a voice cast.

Wholesaler: In the book industry, a business that has the attributes of a distributor and a retailer.

BIC Digital Audiobook Best Practice

Metadata Requirements

Introduction

The purpose of this document is to offer best practice guidance about what metadata is required to create a viable digital audiobook product record. The document reflects the key differences in the management of digital audiobook metadata compared to physical or digital book products more generally.

The document assumes that ONIX 3.0 or 3.1, the current ONIX controlled vocabularies (code lists) plus the *Thema* subject classification scheme are the standards used to create and communicate the product records for the purposes of best practice. However, we recognise that earlier versions of ONIX and other classification schemes may be in use and may meet current business needs although not considered best practice.

Please be aware that ONIX 2.1 has now been marked 'obsolete' and the BIC Standard Subject Categories Scheme is obsolete as of the end of February 2024.

ONIX is the most widely used standard for capturing and communicating book product information, including digital audiobooks. EDItEUR is responsible for the development and management of this standard as well as *Thema* and EDItX for the global book supply chain. Where 'Resources' refer to ONIX or *Thema*, further information can be found on the EDItEUR website at www.editeur.org

Although ONIX is the preferred format for communicating metadata, we understand that a non-ONIX format, such as a predefined Excel spreadsheet or CSV file may be necessary for managing metadata for some publishers and vendors. The method used to exchange product information needs to be agreed in advance by the sender and recipient of the data. BIC recognises this and provides pragmatic advice for the use of non ONIX formats. Where this is the case, we suggest that the layout should be used in conjunction with the latest version of ONIX's code lists to create an 'ONIX compatible' format. Bear in mind that many ONIX codes begin with a zero and that Excel (or similar software) may by default remove the leading zero, so column formatting will be required to ensure the code is treated as text and the leading zero retained.

It is not our intention to replicate key sources of information on metadata management. However, we have indicated where key resources can be found and highlighted some of the pitfalls of creating digital audiobook records. For example, if a specific piece of metadata does intentionally not exist because it is not relevant to the product, we show you how to express that. Moreover, where the use or otherwise of a specific data element or code in a product record could influence how another supply chain partner responds to that metadata or the corresponding digital audio asset, we have highlighted this. We have also captured those codes that are most relevant to digital audio. Our aim is to be as precise and specific as possible.

ONIX is a live standard and continues to evolve. Two important facets of that evolution to be aware of are Block 3 and Block 8 updates:

> **Block 3:** Rich, chapter level metadata carried in the ONIX record for the whole audiobook product. Note that Block 3 does not describe the relationship between chapters and the files which make up the audiobook. It solely concerns chapter names, timings and other chapter specific metadata.
>
> **Block 8:** Carries information about the manufacture and production of audiobook products (also e-books and POD print books). It includes a manifest of the files required to assemble the product. There is no necessary relationship between files and chapters.

Neither block 3 nor 8 is widely adopted yet, but they do play an important role in audiobook metadata best practice and remove (or reduce) the need for sidecar files. While there is no necessary relationship between files and chapters, blocks 3 and 8 together can indicate that relationship. More detailed information on blocks 3 and 8 is available on pages 18 to 20 of this document.

Although many of the core data elements (such as ISBN, author, title) will be available early in the lifecycle of the digital audio product, other elements will only be available (or confirmed) after production of the digital audiobook asset. This includes data elements such as precise duration (run time or extent), the reader and the file format. If these data elements are supplied on a provisional basis, then they should be updated as soon as possible postproduction for accuracy.

In this document, we have defined 'core metadata' as:

> ISBN and/or GTIN13, Title, Contributor, Product Form, Language, Subject Classification, Publisher, Imprint, Publication Date and Publishing Status, Sales Embargo Date, Cover Image, Supplier (Vendor), Availability, Sales Rights for the UK and Ireland, UK and Ireland Retail Prices, VAT Detail and Related Products.

Some of the metadata is split between 'core' and 'audio specific'. For example, specific elements of Product Properties such as basic digital details of the product are considered 'core', whilst Product Properties such as the audio file format are considered 'audio specific'.

'Audio specific metadata' is defined as:

> Elements of Contributor, (Reader, Voice Actor, Performer, Narrator etc.), elements of Product Properties, elements of Product Form such as file type and accessibility details, elements of Description, Chapter Level Metadata, Product Manifest and Work Identifier. (A 'work' is a chunk of intellectual property or 'content' in its most abstract form. It is best practice to provide a list of alternative formats of the same work to establish the relationship between the audiobook and any (grand) parent work).
>
> We also strongly recommend including related product data as many platforms and retailers rely on this.

Where metadata is incomplete, inaccurate or supplied late, it may fail validation and quality assurance checks by the recipient digital distributor, vendor, platform or retailer. This will impact discoverability, availability and sales.

The Metadata Requirements table overleaf may look familiar to some readers. It has been adapted from BIC's Metadata Excellence Award Scheme (MEA) documentation (formerly the Product Data Excellence Awards), which uses BIC Basic to define the absolute minimum metadata required to create a viable product record. BIC Basic comprises 21 key pieces of product information which are either considered mandatory, conditional or recommended depending on the circumstances.

There are some key differences to MEA to be aware of. This document considers the following data elements to be mandatory for the purposes of digital audiobook metadata. These are conditional in the MEA document.

- Contributor – or a positive indication that there are no named contributors
- Edition – identifies the product as abridged or unabridged
- Product Form Detail – identifies the audio file type
- Product Properties – including Duration and Language (the latter for accessibility purposes)
- Publisher, Imprint, Lifecycle Dates and Status – Publishing Status

- Work Identifier – referencing the work that formed the basis of an abridgement or adaptation (assuming there is one and that this is communicated in the relevant metadata records)
- Chapter Level Metadata – specific relevance to audiobooks

Other than forming the basis for this document, neither BIC Basic nor the Metadata Excellence Award Scheme has any further role to play in this document.

Where specific codes are cited, these provide examples of codes that may be relevant to a specific data element. They are not meant to be an exhaustive list of codes that could be used. For that, please refer to the specific code list referenced, for example via https://ns.editeur.org/onix.

[continued overleaf]

Field	Requirement	Comment	Resources	Timeline
Product Identifier	Mandatory	Use separate columns/ fields for ISBNs and GTIN13s in spreadsheet formats. The ISBN and GTIN13 must include digits only. Do not include hyphens or spaces.		16 weeks
Product Form	Mandatory	Multiple codes are not acceptable.	ONIX Code List 150, Product Form. Consider audio codes: AC (red book CD-Audio), AE (yellow book CD-ROM containing mp3 files), AJ (Downloadable Audio File), and AN (Downloadable and Online Audio File). Online audio is streamed AND online.	16 weeks
Product Form (cont.)	Mandatory	Multiple codes are allowed but not recommended in this context, since the product will almost certainly have only a single file format. However, other properties might require further repeats of <ProductFormDetail> codes.	ONIX Code List 175, Product Form Detail. Consider codes: A101 (CD Standard Audio Format), A103 (mp3 Format), A107 (AAC), A109 (Audible), A110 (FLAC), or A112 (ALAC).	3 weeks
Product Form (cont.)	Recommended	Use ONIX <ProductFormDetail>. In general, single reader audiobooks are mono, dramatised performances are stereo.	ONIX Code List 175, Product Form Detail. Consider codes A410 (mono) and A420 (stereo).	3 weeks
Product Properties	Mandatory	For digital audio files it is important to describe the type of content – also used for accessibility information – to clearly indicate that the product is all audio. The accessible properties of audiobooks should be included in the metadata.	ONIX Code List 81, Product Content Type. ONIX Code List 196, E-Publication Accessibility Details.	3 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Collection Information	Must supply the title of any Collection (formerly Set or Series).	Conditional	Conditional on the product being part of a collection. Ideally, any definite or indefinite article (A, The) should be in a separate column/ field. Data must be supplied in a consistent manner.		16 weeks
Collection Information (cont.)	Where appropriate, must provide collection (set or series) numbering in a separate column/ field (as an Arabic or Roman number, not as text).	Recommended	Conditional on the product being part of a collection. The data must be supplied in a consistent manner. The <NoCollection/> flag should be used where the record contains neither a <Collection> composite nor collection description. This provides a positive indication that the product is not part of a collection. In spreadsheets, where there is no collection information, this MUST be indicated in the record using the No Collection field. Use a column titled "No Collection" and fill in "TRUE", while leaving the column blank for products where there IS Collection information.		16 weeks
Collection Identifier	Where an identifier has been assigned to the 'collection as a whole' (e.g., where the entire collection is available as a 'set') must provide ISBN or GTIN13. Where an ISBN has been assigned, it is best practice to provide both, even if they are the same number.	Recommended	Where an identifier exists for the whole collection, it is good practice to use it to easily link the individual component parts.		16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Title Information	Must supply the text of the title and any subtitle (as listed on the title page of the book) in separate columns/ fields.	Mandatory	Ideally any definite or indefinite article (A, The) should be in another separate column/ field. Do not use the title or subtitle field to carry marketing or promotional text.		16 weeks
Contributor	Must supply one or multiple contributor names and roles where they exist.	Mandatory	Contributor Name in Surname, First Name order. Inversion is not required for a Corporate Name. The requirement for a positive 'No Contributor' indicator makes this rule mandatory. Provide EITHER one or more names OR a No Contributor indicator. With the expected growth of audiobooks 'read by' synthetic voices, the <UnnamedPersons> tag should be used with a normal role code and an Unnamed Persons code for a synthesised voice. In spreadsheets, provide names in separate role, given, family name columns/ fields OR as separate role, inverted name columns/ fields. Corporate contributors are permitted. Where there is no attributable contributor, this MUST be indicated in the record using the No Contributor field. Use a column titled "No Contributors" and fill in "TRUE", while leaving the column blank for products where there ARE contributors.	ONIX Code List 17, Contributor Role Code (this includes corporate contributors). ONIX Code List 19, Unnamed Persons (this includes codes for synthetic voices). The ONIX Best Practice Guide and Code Lists cover synthetic voices. Synthetic voices sometimes have names. Mark these as an alternative name to the synthetic voice.	16 weeks
Contributor (cont.)	For audiobooks (including e-audio) with a credited reader, supply the name in <Contributor> with role E07 (Read By).	Mandatory	In practice there is no maximum number of contributor codes in ONIX. When supplying data in a spreadsheet, confirm the maximum number allowed. Suggest that the spreadsheet needs to cope with at least 3 or 4 contributor codes.	ONIX Code List 17, Contributor Role Code. Consider E01 (Actor), E03 (Narrator in a dramatised production), E09 (Speaker) or E99 (Performed By).	3 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Contributor (cont.)	Should provide <BiographicalNote> for each named contributor.	Recommended			16 weeks
Edition Information	Must supply any edition number (as an Arabic number (and Roman if the audiobook has Roman numerals)) where the product has an edition number.	Conditional	Conditional on there being an edition number: 'Two', '2nd', etc are not valid.		16 weeks
Edition Information (cont.)	Must supply any edition type (e.g., 'adapted', 'digital original') as an ONIX edition type code, or as text where no suitable code is available - e.g., 'Centenary' - in separate column/ field where appropriate.	Conditional	Conditional on there being an edition type (other than 'abridged' and 'unabridged'). Use text (in an <EditionStatement> field or separate column) where edition number and type do not sufficiently describe the product.	ONIX Code List 21, Edition Type. Consider in particular: ADP (Adapted), CMD (Combined Volume), DGO (Digital Original), ENH (Enhanced, where there is also an 'unenhanced' basic edition), MDT (Media Tie-In) and NED (New Edition).	16 weeks
Edition Information (cont.)	For all audiobooks (including e-audio), include either ABR or UBR for 'Abridged' or 'Unabridged' as a minimum.	Mandatory	Multiple codes are acceptable. There is no maximum number of Edition Type codes in ONIX. For spreadsheets, confirm the maximum number allowed. Spreadsheets need to cope with at least 3 or 4 Edition Type Codes. Be aware that some vendors won't accept abridged versions. This will impact whether a platform will sell/ distribute a title.		16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Product Properties	The language should be supplied. For products in translation, the original language should be supplied in a separate field/ column.	Mandatory	Mandatory even if in English. Language is needed for audio accessibility requirements. Regional variations like US English would be considered conditional. From an accessibility viewpoint, it is useful to know the accent of the reader.	ONIX Code List 74, Language. ONIX Code List 91, Country. Used in conjunction with Code List 74.	16 weeks
Product Properties (cont.)	Must supply duration in minutes as an integer (i.e., whole numbers of minutes), in separate fields/ columns.	Mandatory	Accurate audio duration will only be available after the production of the audio asset. Ensure that any metadata estimating the runtime is updated. If more than minute precision is desired, a decimal number can be provided (e.g., 179.75 minutes).		3 weeks
Subject	Must supply appropriate main *Thema* subject and qualifier code(s) in separate columns/ fields. (NB, where there are multiple *Thema* subject codes, exactly ONE must be marked as the main subject (for that scheme). Qualifiers count separately – you can have a 'main' place qualifier and a 'main' time period qualifier too.	Mandatory	The BIC Standard Subject Categories Scheme (BSSC) is being made obsolete by the end of February 2024. Use of *Thema* is required for all new subject category classification exercises. BSSC may be provided as well as *Thema*. All *Thema* codes are relevant to audiobooks. They are independent of format, so guidelines apply to audiobooks exactly like they do to text based books.	https://www.editeur.org/151/Thema/ for information and downloadable documentation. https://ns.editeur.org/thema/en for the interactive code browser.	16 weeks
Subject (cont.)	Should support multiple subsidiary *Thema* subject codes and qualifiers in separate columns/ fields.	Recommended	As above. All qualifiers are relevant.		16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Subject (cont.)	Supply of keywords in a single semicolon-separated list in <SubjectHeadingText> with <SubjectSchemeIdentifier> 20, is recommended.	Recommended	The semicolon separator applies to keyword phrases too. The maximum recommended number of characters for a list of keywords is 250.		16 weeks
Subject (cont.)	Should supply The Publishers Association Children's Book Marketing Categories (CBMC) in a separate field/ column for all Children's books.	Recommended	There is currently no type/ format indicating 'digital audiobook'. Pending follow up by BIC with the PA, use code 'F', 'electronic format'.	https://bic.org.uk/resources/childrens-books-marketing-classifications/	16 weeks
Audience	Must supply audience code.	Mandatory		ONIX Code List 28, Audience Type. Note that there can be multiple audiences for a product. Consider 02 (Children), 03 (Teenage), 04 (Primary and Secondary Education). For books that are not Children's or Education, use 01 for adult.	16 weeks
Audience (cont.)	For all children's and educational books, supply lower and upper target interest ages (in separate fields/ columns). Be consistent with The Publishers Association guidance.	Conditional	For all children's and educational books, recommended to supply <AudienceRange> composite with exact or lower (and upper where applicable) reading ages, interest ages and/or school grades.	ONIX Code List 30, Audience Range Qualifier. Consider 16 (Interest Age, Months), 17 (Interest Age, Years) or 18 (Reading Age, Years).	16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Audience (cont.)	For all general/ adult (code value 01) books, supply an adult audience rating to provide a warning about content that might offend parts of the adult audience.	Conditional	Use <Audience> composite with <AudienceCodeType> 22 (this includes using code 00 for books as yet unrated, and 01 where the rating is 'suitable for any adult audience'). For books that are not Children's, Teen or Education use 01 (Adult). For users with visual impairments, a clear indication of the audience is important, especially if it is very adult.	ONIX Code List 29, Audience Code Type. Consider 22 (ONIX Adult Audience Rating). See below. ONIX Code List 203, ONIX Adult Audience Rating. Different codes detail different content warnings.	16 weeks
Description	Should supply a short description for marketing purposes.	Recommended	350 characters or fewer of plain text (this is about 45 – 50 words). In ONIX, this text can also include XHTML markup (e.g., for bold, italics, multiple paragraphs).		16 weeks
Description (cont.)	It is recommended that long description, promotional headline, endorsement, table of contents, reviews, combined contributor biography and other text content types are supplied wherever appropriate. Individual contributor biographies should be within <contributor>.	Recommended	Use <TextTypeCode>. Text formatting may be included using XHTML or HTML tags (and requires the textformat attribute on the <Text> element). A description is vital for accessibility in audio. The audio description needs to make sense to a potential listener who has little or no vision. It should make sense if you only hear the description.	ONIX Code List 153, Text Type. Consider 03 (Long Description, more than 350 characters), 06 (Review Quote, for this book), 09 (Endorsement), 30 (Abstract), 04 (Table of Contents), 07 (Review Quote, previous edition), 08 (Review Quote: previous work), 10 (Promotional Headline)	3 weeks
Chapter Level Metadata	Rich, chapter level metadata.	Mandatory	Made up of chapters, the audiobook may also include an introduction or credits (or both). Like chapters, these separate the audiobook into more manageable parts.	See pages 16 to 18 of this document.	3 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Publisher, Imprint and Lifecycle Dates	Supply Imprint Name, the 'brand' under which the product is sold (even when it is the same as Publisher Name). This data must be supplied accurately and in a consistent manner.	Mandatory			16 weeks
Publisher, Imprint and Lifecycle Dates (cont.)	Supply Publisher Name (name of the legal entity responsible for publication). This data must be supplied accurately and in a consistent manner.	Mandatory			16 weeks
Publisher, Imprint and Lifecycle Dates (cont.)	Should supply City of Publication in a separate field/ column.	Recommended			16 weeks
Publisher, Imprint and Lifecycle Dates (cont.)	Provide Publishing Status.	Mandatory	If not published by a UK publisher, also provide <MarketPublishingStatus> for the UK market.	ONIX Code List 64, Publishing Status. Consider: 01 (Cancelled), 02 (Forthcoming), 04 (Active), 16 (Temporarily Withdrawn from Sale), 17 (Permanently Withdrawn from Sale).	16 weeks
Publisher, Imprint and Lifecycle Dates (cont.)	Except for products that are abandoned or postponed indefinitely, provide Publication Date - or for non-UK publications - the date of availability in the UK. This is sometimes termed "market publication date".	Conditional	All books have a Publication Date, some have a Sales Embargo Date. Format YYYYMMDD.		16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Publisher, Imprint and Lifecycle Dates (cont.)	When a Permanently Withdrawn from Sale (PWfS) date has been set, this should be provided as YYYYMMDD in a separate column/ field.	Recommended	'PWfS' is defined in ONIX as 'effectively synonymous with OP' (Out of Print), but for digital products, where no stock remains in the supply chain.		16 weeks
Publisher, Imprint and Lifecycle Dates (cont.)	For products with a sales embargo, must provide the Sales Embargo Date (YYYYMMDD) in a separate column/field.	Conditional			16 weeks
Sales Rights	Must supply sales rights as they apply to the UK and ROI (GB, IM, GG, JE, IE).	Mandatory	ONIX 3.0 requires comprehensive rights, not JUST GB, IM etc.	ONIX Code List 46, Sales Rights Type. Consider code 01 (for sale, based on exclusive publishing rights in specified countries or territories), 02 (for sale, based on non-exclusive publishing rights in specified countries or territories) or 03 (not for sale).	16 weeks
Sales Rights (cont.)	Should provide comprehensive global sales rights information.	Recommended	The recommended method is to include a list of country codes to which each of the three sales rights types apply (in three separate columns). A fourth column can specify which of the types of sales rights apply to countries not listed explicitly.	ONIX Code List 46, Sales Rights Type. ONIX Code List 49, Region. ONIX Code List 91, Country. Consider 01, 02, 03 and 00 ("unknown") as per List 46.	16 weeks
Sales Rights (cont.)	Ideally, should support retailer exclusives where appropriate, using <SalesRestriction>.	Recommended		ONIX Code List 71, Sales Restriction Type.	16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Work Identifier	A 'work' is a chunk of intellectual property or 'content' in its most abstract form. It is independent of the way it is manifested as a product. Works may be identified using the ISBN of the first manifestation of the work or using a proprietary work identifier. Where a work identifier is used, it should be on all manifestations of the work, not just the audio product.	Mandatory	The 'normal' relationship between a product and its 'parent' work is code 01. For abridged audio, use code 02 to link the abridged product to its unabridged grandparent. For unabridged audio use 01, manifestation of original work.	ONIX Code List 164, Work Relation.	16 weeks
Relationship Between Products	Use ONIX <RelatedProduct> to provide ISBNs of related products.	Recommended	If other forms exist, use relation code 06 (Alternative Format) to link audio to a textual version of the same content, and vice versa (e.g., when a title is available as PB, EB and Audio).		16 weeks
Related Products	Must provide ISBN and/ or GTIN13 of any predecessor/ successor products in separate columns/ fields (e.g., earlier or later editions of the same work).	Conditional	Use <RelatedProduct> with product relation code.	ONIX Code List 51, Product Relation. Consider: 03 (Replaces), 05 (Replaced By). See the code list for other relationships.	16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Product Manifest	Information about the manufacture and production of the audiobook product, including a manifest of the files required to assemble the product.	Mandatory	The separate chapters and other component parts of the audiobook that make up the rich, chapter level metadata are simply digital audio files in a specific file format for the purposes of the Product Manifest. One chapter (or component part) does not equal one file. There can be multiple files per chapter and multiple chapters per file.	See pages 16 to 18 of this document.	3 weeks
Platform, Retailer, Wholesaler or Digital Distributor	Provide at least one name (platform, retailer, wholesaler or digital distributor) in a consistent manner, and/or SAN or GLN of a supplier from which the UK retail trade may obtain the product.	Mandatory	If providing more than one name, use separate columns/ fields. Data supplied must be accurate and consistent.		16 weeks
Platform, Retailer, Wholesaler or Digital Distributor (cont.)	Should provide multiple <SupplyDetail> composites where product is available via multiple suppliers / channels.	Recommended			16 weeks
Platform, Retailer, Wholesaler or Digital Distributor (cont.)	Provide availability (per platform, retailer, wholesaler or digital distributor).	Mandatory		ONIX Code List 65, Product Availability. Consider: 01 (Cancelled), 10 (Not Yet Available), 20 (Available), and 34 (Temporarily Withdrawn from Sale).	16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Supply Date	Expected Availability Date.	Conditional	This is when the publisher will distribute the master files to retail platforms.		16 weeks
Pricing	Provide UK price in <Price> composite with <PriceType> 02 or 42, with <PriceAmount> and <Tax>, or <UnpricedItemType>. Use <Territory> to indicate the price is valid in the UK (GB, IM etc.) unless that particular price is valid throughout the entire market or the entire sales rights territory. Specify the currency of the price using <CurrencyCode>. Note <PriceAmount> of zero is not valid (use <UnpricedItemType>)	Mandatory	In ONIX. state tax rates (standard, reduced, zero-rated) and percentages, price before tax and amount of tax within <Tax>. Note current VAT status of digital audio. VAT on audiobooks still at the standard rate.	https://www.gov.uk/guidance/zero-rate-of-vat-for-electronic-publications#items-that-are-not-entitled-to-the-vat-zero-rate ONIX Code List 96, Currency Code.	16 weeks
Pricing (cont.)	For products for sale in Ireland, provide the relevant Irish price (either inclusive of Irish VAT using <PriceType> 02 or 42, or exclusive of Irish VAT using price type code 01 or 41, in Euros) in a separate <Price> composite. Recommendations relating to <Tax> as for UK prices.	Conditional	Irish VAT currently applies to audiobooks.	https://www.revenue.ie/en/vat/vat-on-services/electronic-services/electronic-publications/index.aspx# ONIX Code List 96, Currency Code.	16 weeks
Pricing (cont.)	Free of charge products.	Conditional	Provide a positive indication that the product is free, rather than a zero or a blank in the two price fields.		16 weeks

Field	Description	Requirement	Comment	Resources	Timeline
Pricing (cont.)	Price changes.	Recommended	Provide advance notification of a future price change using 'date until' on older price and 'date effective' on newer price (both YYYYMMDD) in separate columns/ fields.		16 weeks
Cover	Provide the cover image as a JPEG, ideally RGB or with embedded ICC colour profile, correct aspect ratio, typically but not required to be under 2MB file size. The image must be 2D, not 3D, although an additional 3D image may be sent.	Mandatory	The field or column should contain the filename or full URL. The image must be supplied alongside the data file or be available for direct download at the exact URL given. The URL should be the URL of the downloadable image itself.		16 weeks

The role of Blocks 3 and 8 in ONIX

With thanks to Graham Bell at EDItEUR for his input to this summary of the role of blocks 3 and 8 in ONIX, and also for the graphics used to illustrate the overview.

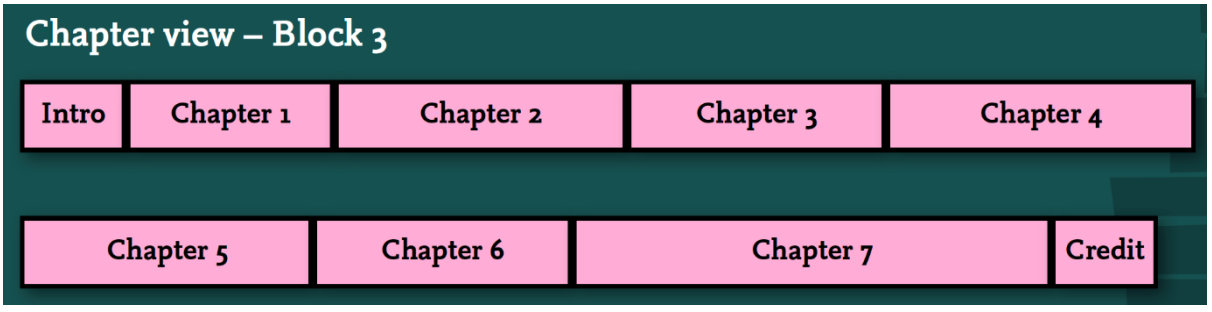
The relationship between files and chapters in digital audiobooks is not clearcut. An audiobook recording can be split into multiple files for production, operational or supply chain purposes. Another term for splitting files is 'chunking'. It means that one file does not always equal one chapter. Indeed, there can be many files per chapter, or many chapters per file.

Similarly, split files can be combined. If they were previously split, they won't necessarily be recombined in the same way. Like splitting, there are other ways of describing the combining of files, including 'concatenating', 'joining' or 'splicing'. This can be done to meet a specific platform's requirements to deliver an audiobook in a single, very large file, or conversely, as several smaller, more manageable files.

In ONIX, or when following ONIX conventions to create viable digital audiobook product records, these two ONIX blocks are critical to understanding the relationship between audiobook chapters and audiobook files:

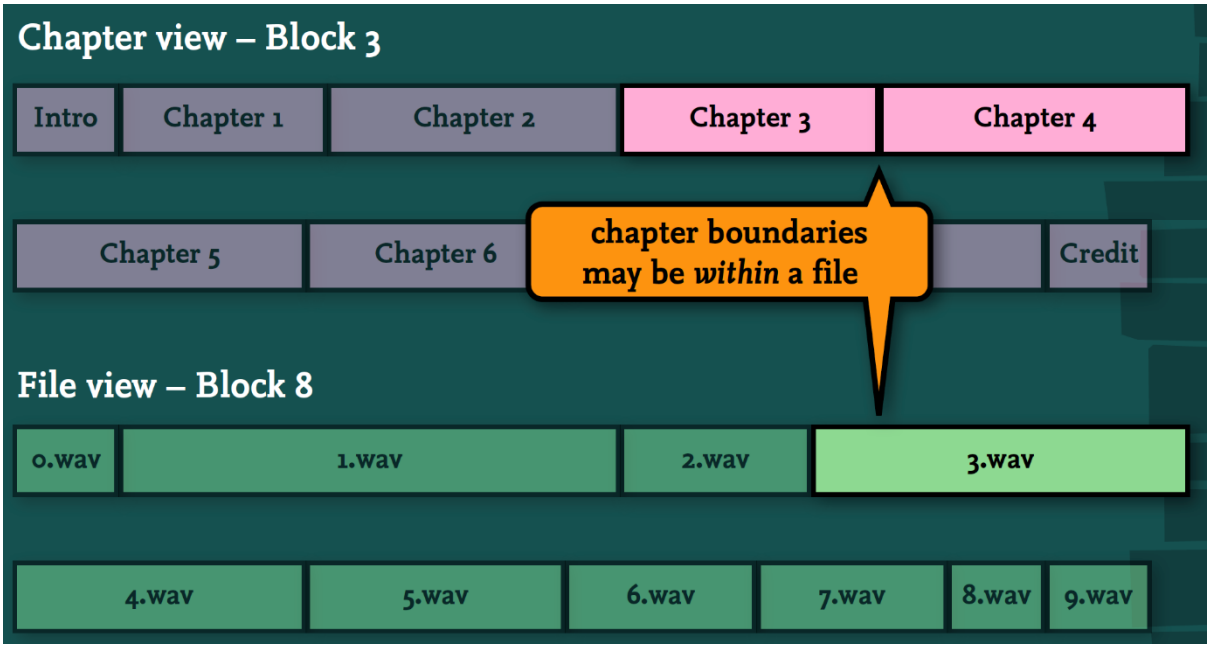
> **Block 3:** Rich, chapter level metadata for the whole audiobook product. Block 3 does not describe the relationship between the chapters and the files which make up the audiobook. It solely concerns chapter names, timings and other chapter specific metadata.
>
> **Block 8:** Carries information about the manufacture and production of the audiobook product. It includes a manifest of the files required to assemble the product. There is no necessary relationship between files and chapters.

From a Block 3 perspective, an audiobook is made up of chapters. There may also be an introduction or credits (or both). Like chapters, these separate the audiobook into more manageable parts, corresponding to the chapters, parts or sections in the print or e-book. The number of chapters may or may not align one-to-one with the number of audio files comprising the product. So, in an audiobook with seven chapters as well as an introduction and end credits, chapter seven may actually be file number eight in a sequence of nine.



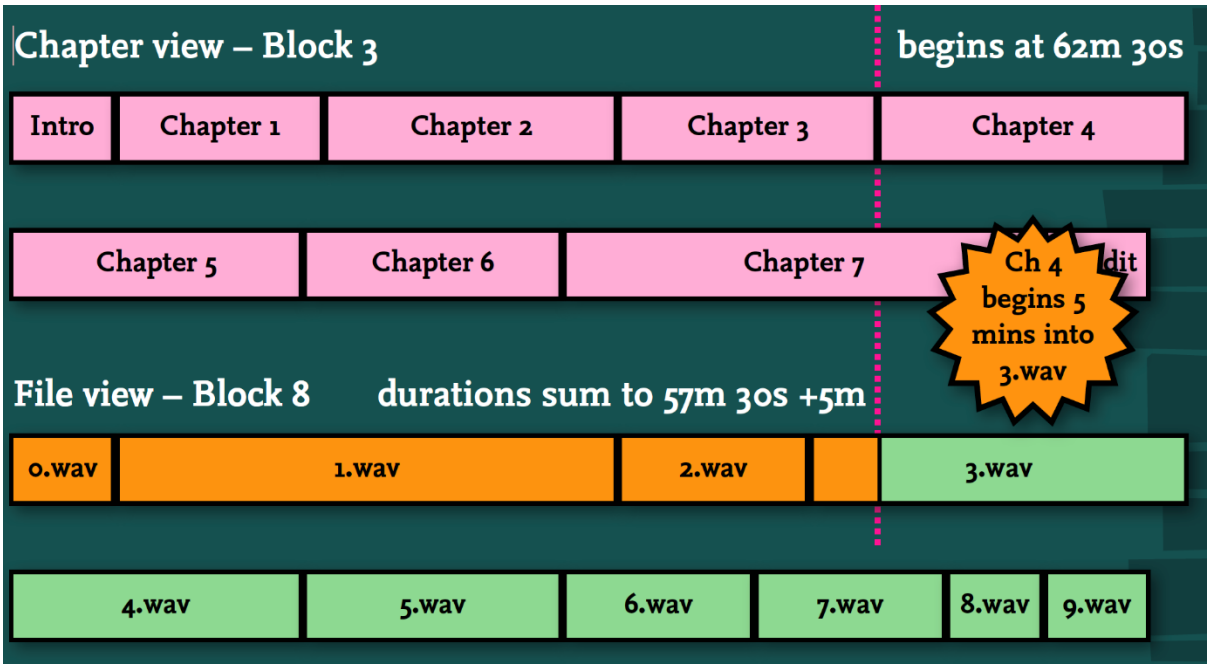
However, Block 8 looks at things differently. The separate chapters and other component parts of the audiobook (such as introduction and credits) are simply digital audio files in a specific file format (such as .wav).

Because one chapter (or component part) does not equal one file in the current example, the 9 component parts in block 3 are represented by 10 files in block 8, with multiple files per chapter and multiple chapters per file. The end of chapter boundary in a block 3 component may be part way through (within) a file in block 8.



Moreover, blocks 3 and 8 both measure time (duration) differently. Block 3 calculates the elapsed time from the start of the audiobook to a given point in the book, whereas block 8 may give an explicit duration for each of the files.

[continued overleaf]



This ensures that block 3 metadata does not need to change if the files are combined or split as they pass along the supply chain.

BIC Digital Audiobook Best Practice

Good File Management

One of the major challenges in the digital audio supply chain is how to optimise the management of the digital asset, the related metadata and any supplementary material, collectively, the digital audiobook. Usually, this is the responsibility of the publisher (or originator) of the audio asset and product information.

“Good file management” extends beyond the publisher’s obligations to the asset and product metadata. It involves ensuring the publisher’s compliance with the submission requirements of their audiobook platform partners, resellers, retailers and other intermediaries. Whilst BIC doesn’t capture and maintain these submission requirements in detail, it does highlight the common issues that can be easily avoided. See below.

Each asset, product record and set of related collateral will have files and folders in which everything resides. Where these files are currently in the supply chain will give a good indication of what will happen to them on the next stage of their supply chain journey. This assumes that there will be no unforeseen issues, errors or delays requiring correction and update.

Inevitably, there will be ad hoc problems to address. Stakeholders need to be aware of the potential implications for managing assets, product information and collateral.

The purpose of this document is to establish and describe what “good file management” looks like from the point at which a studio hands over the digital audio master files to a publisher, through to the final product being available for sale, loan, download or stream by the end consumer via a platform, retailer, reseller or vendor.

“Good file management” is the set of principles that governs the management of digital assets, the related metadata and any support materials. It will deliver the best results and is recognised as doing so.

Different organisations will have different criteria for establishing and measuring these results. For example:

- Productivity
- Costs
- Organisation
- Automation
- Collaboration
- Security
- Accessibility
- Accountability
- Consistency
- Sustainability

[continued overleaf]

“Good file management” recognises that there are various stages in the lifecycle of the digital audiobook. These include file creation, distribution, acceptance and quality assurance. The latter happens at various stages in the audiobook’s lifecycle and may necessitate a partial or complete update of the audiobook, including metadata and supplementary materials, if specific requirements are not met.

Good File Management Principles

The “good file management” principles laid out below recognise that the digital audiobook supply chain comprises a wide variety of businesses with different organisational structures, workflows, dependencies and resources.

1).Agree and be consistent in file naming conventions, such as *ISBN_FILE#.FILE TYPE*. Put the file name inside the ONIX record where possible. At a minimum, file names should contain the ISBN of the asset.

2). In addition to master files, consider how many lossless and lossy file types are needed to meet downstream partners’ requirements.

3). Keep digital assets, the related metadata and any supplementary materials together in one folder. This may include asset manifests, cover images, pdfs, sidecar files and sample files.

4). Ensure that all files are relevant to the product. Discard or archive superfluous files.

5). Reflect updates to digital assets, the related metadata and any support materials as soon as possible after the updated files have been made available.

Ensure downstream partners accept and apply these updates (or replace files) in a timely manner, in their entirety and in the right order. This ensures that no partner gains an unfair competitive advantage. Archive earlier versions of files.

Remember that it is common for all files in an audio asset to be replaced, even if changes have only been made to one of the files in the asset.

6). Use ONIX block updates where the metadata sender and recipient have the capability to use these, rather than sending full records.

7). Ensure quality control takes place. Feed back any issues before the audiobooks are made available to digital distributors, platforms and vendors. This avoids the need to retrospectively apply updates or replace files later.

8). Ensure that legacy files, those subject to quality control or works in progress do not enter the supply chain. Use version control to establish that only final (confirmed) master files are available and accessible. All corrections and specific submission requirements such as bit rate and file formats need to be accounted for.

9). Be clear about expectations such as quality assurance, delivery mechanisms and timescales.

10). Use secure storage and transfer methods. Consider the implications of digital piracy.

11). It is possible to embed metadata in digital asset files. Users must remember that whilst this product information may be minimal, it will still require regular update and validation to

ensure that any changes to the full product record are accurately reflected in the embedded data. This will avoid potential conflicts should there be more than one source of product information.

12). Consider the aftercare needs of downstream partners. You may wish to monitor the status of audiobook assets. Is the product showing the correct availability status? Is the product information up to date? Take action where shortcomings are found. This helps ensure the best experience for the end consumer.

Much of this ad hoc, manual work can be removed by the adoption of the EDItX Inventory Status Report.

Audiobook Requirements

Detailed submission requirements will vary by trading partner. Below are the most common requirements. These should be agreed in advance between the sender and receiver of the digital asset, metadata and related collateral:

- All tracks of the audiobook should be in the same format (such as mp3, wav, etc.).
- All tracks of the audiobook must have a consistent bit rate and depth.
- All tracks of the audiobook must have a consistent sampling rate and meet the trading partner's requirements (usually 44.1kHz).
- Tracks of the audiobook may not be a combination of mono and stereo files. Mono files are strongly recommended for single voice recordings and stereo for multi voice recordings.
- Files (component parts) must be named in accordance with and match the associated file manifest (Block 8 in ONIX or an Excel/ CSV document). The convention used should adhere to the trading partner's requirements. Where files are numbered, file numbering sequences must be consecutive. Beware of characters to avoid in file names such as colons and slashes.
- Track duration (minimum and maximum) requirements will vary by trading partner and may also be dependent on the type of audiobook (e.g., poetry) or the track content (e.g., introduction). It is common to have an upper track limit of ~79 minutes. The actual track duration of any file should match that included in the metadata.

Some recipients have specific requirements about:

- Maximum length of seconds of silence.
- Relative loudness.
- Average and peak volume.
- Noise floor limits.
- Accessibility and high contrast audio.

Image Requirements:

- Image files are usually supplied in the jpeg format.
- Image colour space must be RGB (screen standard). Embed an ICC colour profile if possible.
- The minimum pixel specification is 2,400 x 2,400, although this is vendor dependent.
- Images must be square.

BIC Digital Audiobook Best Practice

Frequently Asked Questions (FAQs)

FAQs Index

A. Content Creation and Management

1. How should I engage studios and voice actors?

Look for studios with experience in audiobook production, who have specialist or purpose-built studios/ booths and are familiar with the specifications and requirements of an audiobook. You can dry hire a studio and provide your own actors/producers, but usually the studio will provide an engineer/ producer. Studios may also help with casting and engaging voice actors. You will see daily/ hourly rates, or per finished hour of audio rates. Agree upfront the level of preparation and quality assurance that will be done and establish delivery processes. Voice actors can also be engaged via their voice agents, for a per finished hour or daily rate. When engaging actors, you should give them as much information as possible about the book, including the accents needed, an overview of the text, etc.

2. What is a home studio?

Some actors have studios at home that they record in. They will typically provide raw files only that will then require the engagement of a studio or freelance producer for post-production (editing, proof listening, mastering), to finalise the files for distribution. It is advisable to request samples from the home studio or samples of completed productions to establish the quality of a home studio recording.

3. Do boilerplate agreements exist?

Each publisher will have its own agreement wording, but these might be standardised across projects.

4. What should I expect from the recording studio in terms of files?

Fully edited and mastered WAV files (and/ or other requested formats), to your specifications. Files may be proof listened for errors if agreed. Similarly, Chapter level metadata spreadsheets and samples will be provided if requested.

5. How do I create sample files?

Studios can provide these, or you can select sections (approx. 5-10 mins) using any audio editing software.

6. What role should accessibility play in content creation?

Audiobooks are inherently more accessible than printed books for some people. You should think about what information is included in the metadata to highlight the fact that the audiobook is accessible (reader, whether the book is abridged or not, navigation, file properties, manifest). Consider also other materials, such as accompanying PDFs, and whether that affects the overall accessibility of the product. Considering how you might support narrators/ authors with different requirements or needs through the audiobook process will also help to make the industry more accessible in general.

7. What is the recommended file format for master files?

WAV are lossless, durable, preserve the full quality of the recording and are therefore a good choice at the beginning of the audiobook supply chain. FLAC is sometimes used, but WAV is the most common.

8. What considerations should affect my choice of audiobook file format?

Considerations include whether the human ear can distinguish the highest quality uncompressed, lossless audio from other lossless or lossy formats. With the growing awareness of and impact that sustainability has on the supply chain, that is an important question to answer. Uncompressed and lossless files will require greater bandwidth, potentially increasing transfer, storage and cloud processing costs. Also consider what the most robust audio format is for your business needs. Optimum audio quality as well as file durability for on-going supply and reproduction matter. Ultimately, your platforms', resellers' or vendors' submission requirements may override some of these choices.

9. What role does sustainability play?

Parties in the supply chain should not store unnecessary data. This impacts bandwidth, transfer, storage and cloud processing, potentially driving up your business's carbon footprint and costs.

Sustainability means balancing the economic, societal and environmental needs of the planet, both now and in the future. There is a heightened awareness of how our behaviours as consumers, employees and private individuals can adversely impact the planet.

10. Why do some platforms' submission requirements stipulate a package of audio content of no more than x minutes duration?

The main reasons for this stipulation are either that the platform has a technical or operational constraint, or that its downstream partners have a similar constraint. More information on submission requirements can be found in the Good File Management document.

11. What are sidecar files?

These are bespoke files delivering information (usually metadata), which either can't be delivered in standard formats (e.g., ONIX) or the recipient can't extract the information from the standard format. A common example is chapter level metadata, which for best practice can be delivered in Block 3 of the ONIX message but is not yet widely accepted.

12. Who is responsible for the quality control of digital assets and metadata?

The responsibility for the quality control of the audio files is split between the studio and the publisher. The publisher also has full responsibility for the quality of the metadata supplied.

13. What is meant by "good file management"?

"Good file management" means having structured and searchable storage with version control and robust backups so that the correct files can be found and managed. All this should be provided by most digital asset management solutions.

14. What's the purpose of audiobooks?

Audiobooks' purpose is to offer readers an alternative way of consuming books. There are many reasons why consumers may wish to listen to rather than read a book, including accessibility, the ability to multitask and the lack of time to focus solely on reading.

15. What goes into pdf supplements?

The PDF supplement usually contains content that cannot be easily or effectively delivered in an audio format. For example, images, bibliography, family trees.

16. What are submission requirements? Why do they matter?

Submission requirements specify a digital distributor's, platform's, reseller's or retailer's expectations for accepting an audiobook for onward distribution, purchase, stream or loan.

It is important that trading partners do not make assumptions regarding submission requirements. These vary from trading partner to trading partner. Senders and recipients of digital audio assets and their metadata need to agree requirements, processes and timelines in advance. BIC's Good File Management document has more information on this subject.

17. Do all audiobook trading partners offer publishers the option to provide bespoke samples and PDFs?

This can vary between retailers. It is important to engage with each trading partner to find out what file formats they accept and what their platforms can provide to the end consumer.

[continued overleaf]

B. Pre and Post Publication Metadata

1. What is ONIX?

ONline Information eXchange or ONIX, is the international and most widely used standard for capturing and communicating book product information. This includes both physical and digital audiobook metadata. More information is available at: www.editeur.org

2. Why aren't industry standards for ONIX more prescriptive?

Like all standards, ONIX is a set of guidelines. These need to reflect the diverse business needs and capabilities of the organisations in the book industry that rely on ONIX as a mechanism for communicating product metadata. A degree of flexibility allows for the sender and recipient of the ONIX file to reflect the specific requirements of their particular trading relationship.

3. Why doesn't everyone use ONIX?

ONIX requires a level of technical skill. There may also be financial and operational constraints that render the adoption of ONIX impractical. ONIX is the standard for communicating rich product information to partners with potentially complex requirements for managing that data. For some organisations, the product data being exchanged is limited in scope, as are the uses to which it is put. ONIX is simply not warranted. Key players in the book industry such as data aggregators and wholesalers offer non-ONIX based alternatives for communicating product metadata, such as preformatted Excel worksheets.

4. ONIX 3.0 has been replaced by 3.1, but why are some organisations still using 2.1?

Version 3.0 represented a major update to ONIX when released in 2009. Version 2.1 was released in 2003. Support for version 2.1 ended in 2014 but technical, operational or financial constraints may influence organisations' speed of transition to 3.0 or 3.1. New ONIX implementations should adopt and implement the latest version of ONIX.

Users who don't have ONIX capabilities should still adopt the latest version of the ONIX controlled vocabulary when exchanging product metadata in non-ONIX formats.

5. Why don't ONIX users comply with the standard? This causes issues.

ONIX allows for a degree of flexibility to reflect the needs of both the sender and receiver of metadata in the trading relationship. It is not usually the standard that is at fault, but how the standard has been implemented or even the quality and completeness of the information populating the various data elements.

6. The quality of specific pieces of metadata can be poor. What data validation takes place?

It is up to the sender and recipient of the data to agree what validation takes place and when. This may be done independently or be a collaborative effort. Dependent on the complexity and the richness of the data, it may be impractical to validate every data element. Consider which are the most critical data elements. Are there tolerances, thresholds or exception reports that can help with quality control? Remember that the originator of the data is ultimately responsible for quality, timeliness and completeness. Adherence to the XML Schema (XSD) will also help avoid issues.

7. Why are my trading partners not using ONIX block 8 updates?

A block update is an update to an ONIX metadata record. An ONIX product record contains 8 or 9 blocks, and each block can be updated independently of the others.

Block 8 carries information about the manufacture and production of audiobooks. It includes a manifest of the files required to assemble the product. Together with Block 3, (for rich, chapter level metadata), it can indicate the relationship between files or CDs and chapters.

Block 8 is not yet widely adopted. Where the sender or recipient of metadata wants to implement block 8 updates, it is important that both parties agree to its implementation.

8. How can I minimise errors in my ONIX files?

The XML Schema Definition (XSD) or Strict XSD can be used to validate an ONIX file.

9. What are the common ONIX errors that I should look out for?

a. Leaving ONIX fields blank
b. Data elements in the wrong order
c. Duplication of sequence numbers
d. Conditional data elements that become mandatory for some implementations

10. Should I always send metadata and the associated audio assets together?

Ideally the core metadata (including ISBN, Author, Title, Publisher, Price and Publication Date) should be sent at least 16 weeks ahead of publication date. Audio specific data elements that require production of the audio asset, such as chapter level metadata and file manifests, should be sent with the asset to ensure complete and successful receipt and validation. This should happen at least three weeks before publication.

11. What happens if the metadata arrives after the audio asset?

If the metadata arrives after the asset, it is very likely that the recipient (intermediary or retailer) will not know what the asset is or what to do with it.

12. Is it possible to send the core metadata too early?

Yes. Some intermediaries, platforms and retailers will have parameters specifying that metadata will only be processed x days, weeks or months ahead of publication date. Check with your trading partner. The earlier the core metadata is circulated, the greater the chance of discovery and pre-orders. Conversely, there is a greater risk of changes to the information requiring updates.

13. Does it matter if the product is abridged?

ONIX allows for the metadata to stipulate whether the digital audiobook is abridged or not. Some vendors, resellers or retailers may not handle abridged versions. That is a business decision.

14. What are the minimum metadata requirements for a digital audiobook product?

This may vary dependent on the specific trading relationship. However, the more complete, accurate and timely the data is, the greater the chance of discovery of the product and potential sales, streams, downloads or loans. Product information is important for the pre-order of titles in advance of publication. BIC Basic is a good reference point for the absolute minimum of information required for a

viable product record. More information about this can be found on the BIC website and in the Audiobook Metadata Requirements document.

15. The publisher's metadata is wrong. What should I do?

Responsibility for the completeness, timeliness and accuracy of metadata resides with the publisher (or product owner or originator). Details need to be fed back for correction and update. On receipt of updated files, metadata recipients should apply the updates in a timely way to correct issues.

16. Why are the metadata timeline requirements for digital audiobooks different to those for physical books and digital books?

For most metadata elements (such as Title, Author, ISBN), the timeline should be no different to that of a physical book. However, metadata like reader's name and final duration may not be available until close to publication date.

17. What specific audiobook data elements should I pay particular attention to?

a. Chapter level metadata
b. Runtime (duration)
c. Reader details
d. File format

18. What is the relevance of price & availability (P&A) to digital audiobooks?

It doesn't matter whether a product is available in a physical or digital format (or both). P&A defines the status and price of an audiobook at a specific distributor or reseller. Availability information should be updated as the underlying status changes.

19. Does the P&A status of a physical book influence the status of its digital audiobook counterpart?

No, the availability of different formats is usually independent, unless publication rights revert.

20. How will publishers' management of digital audiobooks affect their overall BIC accreditation (Metadata Excellence Award)?

Whilst not directly affecting accreditation currently, BIC is monitoring the timeliness and completeness of digital audiobook products.

Information on the application process is available on the Accreditations page of the BIC website.

For details about how to create a viable digital audiobook record, please refer to BIC's Digital Audiobook Metadata Requirements document in the Resources Centre on the BIC website.

21. Do ONIX and W3C complement each other?

There is an overlap in what ONIX and W3C do. That said, ONIX is specifically designed for book industry use. The W3C audiobook package is designed primarily for delivery to the end consumer (sometimes called the 'Lightweight Packaging Format' or LPF). It is a zip archive containing the audio (and any other) files and two predefined metadata documents: a manifest listing the files in the package and a table of contents specifying (at a minimum) the listening order. This is a *delivery* format, not one used at earlier stages of the supply chain. It does not overlap significantly with ONIX Block 8.

22. Is simultaneous publication of the digital audiobook alongside other formats standard practice these days?

This is often, but not always, the case. There are also audiobooks without a physical version.

23. How can I identify problems with digital audiobook assets and/ or metadata?

Learn what recipients need by way of submission requirements and proactively check the individual data elements against these criteria.

24. What's the specification for a cover image?

This varies from retailer to retailer, but generally images must be square and at least 2,400 pixels wide/ high. Some trading partners may insist on a minimum specification of 3,000 pixels wide/ high.

25. What is file metadata?

File metadata is product information embedded in digital asset files. Users must remember that whilst this product information may be minimal, it will still require regular update and validation to ensure that any changes to the full product record are accurately reflected in the embedded data. This will avoid potential conflicts should there be more than one source of product information.

26. Is a cover image a digital asset or metadata?

There's no clearcut answer to this. However, as a guideline, an image file (jpeg) should be considered a digital asset, while a link to an image should be considered metadata.

[continued overleaf]

C. Content Delivery and Consumer Experience

1. My storage and distribution costs for digital files are increasing. What can I do?

A sustainable supply chain is as important as one based on recognised industry standards and best practice. Businesses should consider how their decision making impacts the environment and costs.

The nature of the digital audiobook supply chain means that some audio specific data elements may not be finalised until very near publication date when the digital asset becomes available. Consider the practicalities of only updating the data elements that have changed, as well as the audio file formats used. Are these formats 'lossy' or 'lossless'? Does this noticeably affect audio quality? What file format is required to meet the needs of your supply chain partners and the end consumer?

There may be implications for bandwidth, transfer and cloud processing costs.

2. Why do some organisations send file manifests via email?

Best practice for the management of digital audiobook assets and metadata is to package the assets and metadata together wherever practical. This helps ensure that at the point of ingestion, the recipient of the assets can confirm whether the product is complete.

In practice, most deliveries are not packaged and therefore the email manifest is a simple way to let the recipient know what to expect.

3. Does one digital audio file always equate to one book chapter?

No, one file can contain more than one chapter and vice versa. However, best practice is to equate one file to one chapter.

4. How can I determine how the real chapter name relates to an audio file?

Usually, this connection is made by a sidecar spreadsheet but can be supplied via Block 3 (chapter level metadata) and Block 8 (production manifest) in ONIX.

5. How can I avoid manifest mismatches?

Ensure that the manifest is generated by the entity that supplies the files.

6. Should I be sending compressed or uncompressed audio files to my trading partners?

Uncompressed audio files risk increasing bandwidth, transfer and cloud processing costs. The publisher should supply the quality of files that the trading partner requires for their business, bearing in mind the costs associated with this.

7. How should I manage updates to audio content (such as marketing materials or file counts)?

Because the products are generally not packaged, changes to their composition carries the risk that the recipient might not get the correct, updated version of the products.

Pre and post publication, deliver all files. These should be zipped in a package to avoid the situation described above.

[continued overleaf]

For example, if a marketing-content file is added at the start of the audiobook, it will be the (new) file 001, and all subsequent files will need re-naming to ensure the complete and correct file sequence.

Deliver new chapter metadata if the file count (or, less likely, the chapter sequence) changes.

8. Does the product information relating to a specific digital audiobook asset come with version control?

No, although updates to product information may have unique IDs or be date and/ or time stamped. Always process metadata updates as soon as they are received. Do not apply updates out of sequence. Do not discard updates.

9. I'm a publisher. What should I do if a specific platform, reseller or retailer won't apply an update to a digital audiobook file or the associated metadata?

Timely updates are critical, and this requirement should be included in the contractual obligations as part of a service level agreement (SLA).

10. What is digital piracy?

This is the illegal copying and distribution of copyrighted files.

12. How can I protect digital audio files?

Digital watermarking is one option. This is a piece of code (a marker) embedded in the audio asset providing copyright and ownership information.

13. What is digital rights management?

Also known as DRM, it usually refers to technical protection measures such as encryption or watermarking of digital content. This is used to enforce or monitor compliance with the licence to use an audiobook. DRM can for example prevent or limit copying and redistribution of the digital content, sharing and lending, and can also place a time limit on the use of the content to enable rentals. DRM is intended to protect intellectual property from copyright infringement.

14. How can Zip files help me deliver content?

Zip files can be used to package digital assets, metadata and supplementary materials together for delivery to intermediaries such as digital distributors and platforms.

However, the use of zip files needs to be agreed in advance between the sending and receiving parties. There may be technical constraints that dictate the maximum number of bytes per zip file, or that preclude certain file types from being unzipped (such as JPEG images). Some recipients prefer unzipped (unpackaged) files, although additional checks may be required to ensure that all files are sent and received.

BIC Digital Audiobook Best Practice

EDItX Business Case

1. Introduction

August 2022 saw the launch of Book Industry Communication's Digital Audiobook Best Practice Project, the purpose of which was to document and promote best practice for the management of the digital audiobook supply chain and address a variety of issues captured in BIC's 2021 Digital Audio Supply Chain Mapping Report. These included the inconsistent application of **standards,** ambiguous **workflows** and variable **timelines** amongst the challenges.

Organisations represented on the project included international standards bodies; trade, academic and specialist audio publishers; audio platforms, third party solutions providers, wholesalers and data aggregators.

The project ended in June 2023. A set of best practice documents has been published, leveraging well-established industry standards, describing best practice and also making recommendations about how and where to make further improvements.

2. An Overriding Business Need

Year on year the popularity of audiobooks has grown. The COVID pandemic saw even greater consumption of digital audio streams and downloads.

Whilst this growth has been good for consumers and the books sector, it has put additional pressures on the audio supply chain.

The market is fragmented, comprising a small number of larger players from outside the traditional book industry, as well as established publishers and start-ups. Whilst there are recognised standards that can help players in the audiobook market ensure their products are discoverable and tradable, there are different degrees of compliance (or non-compliance) and no overarching set of best practice guidelines that defines how to achieve the best outcomes.

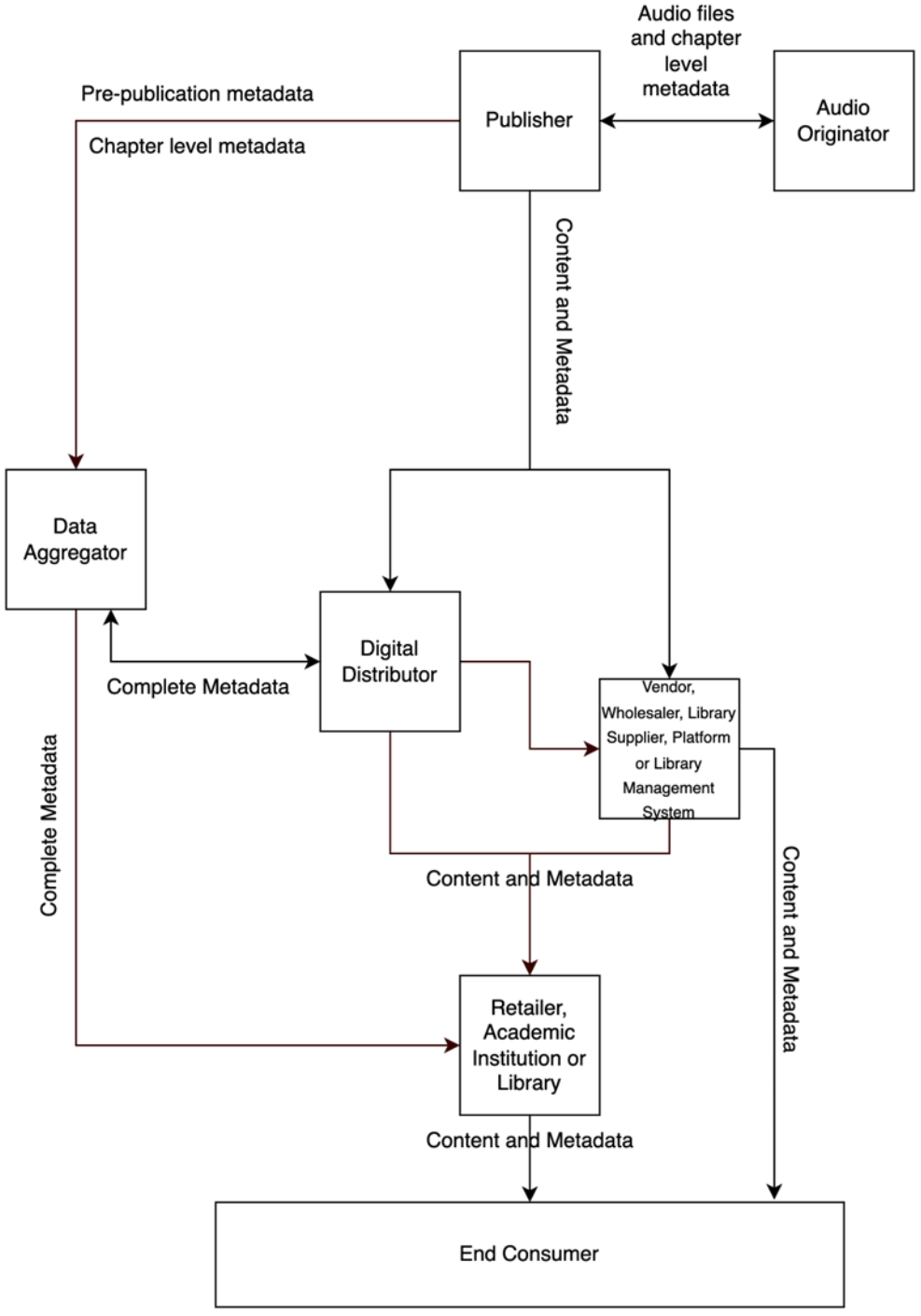
The result is a supply chain in which partial automation and standardisation are linked by ad hoc, manual processes. This is very evident in the way in which publishers currently establish the on-sale status of their digital audio assets with vendors, platforms and retailers. They are often forced to visit each retailer website, for each product, in order to check the status. Alternatively, they have to rely on ad hoc feedback (e.g., by email) or simply hope for the best.

This process undermines the automation that already exists and risks causing delays, misunderstandings and errors.

[continued overleaf]

3. Current Supply Chain

As a reminder, the current digital audiobook supply chain is illustrated below. Even in this high-level diagram, it is clear that intervention may be required at various points in a digital asset's journey through the supply chain to establish its status.



4. The Solution

The EDItX standard offers an automated solution for checking the status of digital audio assets and metadata.

This standard comprises a set of mostly transactional messages and reports in XML that extend the functionality of traditional X12, TRADACOMS and EDIFACT EDI messages in the trade and library sectors. EDItX was developed by EDItEUR with input from BISG and BIC. It is a recognised global standard (not just relevant to the English language) and is actively maintained and developed. It caters to different supply chain and commercial models (think pricing and sales territories).

BIC's Digital Audiobook Task & Finish Work Group (T&FWG) project team agreed to build a business case for the adoption of EDItX, highlighting its relevance to digital products.

The specific EDItX report in question is the Inventory Report for which there is no EDI equivalent. This is intended for use by a retailer, distributor or other intermediary managing inventory on behalf of a publisher or content owner. Indeed, it could be used by a publisher or audio originator too. The purpose of the message is to report on inventory levels or movements in the supply chain. It captures the status of digital files where the inventory holder does not hold physical copies. Digital inventory reporting is date and time specific. It focuses on the status of master files and metadata, as well as the on-sale status of the product. In the Inventory Report, the XML tag terminology and use of code lists align wherever possible with that used in ONIX.

The Inventory Report provides a feedback loop through which receipt, acceptance and on-sale status can be confirmed by an intermediary or reseller to a publisher or other upstream partner. It removes the need for human intervention and interaction with others to establish an asset's on sale status.

The T&FWG also agreed to provide feedback to EDItEUR on the usability and relevance of EDItX Inventory Report version 1.1 to their respective digital supply chains, propose a set of error messages that would significantly enhance the report's usability and relevance in the UK and Ireland, and engage their respective organisations and trading partners in discussions about EDItX implementation. Version 1.2 of the report, due in July 2023, will include updates and revisions to take account of this feedback.

5. Resources Needed

Given that the EDItX Inventory Report is already in use, particularly in Germany and Scandinavia, its adoption by project members, the wider BIC community and even the broader book industry, does not warrant a project to determine the best way forward. EDItX is the way forward.

In effect, each organisation interested in the adoption of EDItX needs to have a clear understanding of what's involved, the resources available and an appreciation of its potential impact on their respective supply chains. With this information it can establish its strategic importance.

a) What's Required

From a technical viewpoint, knowledge of the XML format is required. EDItX is specified in an XML schema. The tag terminology and code lists will be familiar to users with a working knowledge of ONIX 3.0.

Those with commercial responsibilities should have an understanding of the digital audio supply chain and how the use of EDItX can simplify, standardise and automate feedback loops. Reducing customisation and the need for ad hoc processes can lessen support overheads whilst also enhancing business relationships.

Not all players in the digital audio sector use the same terminology, so standardisation is the ideal way to remove potential confusion and misunderstandings.

b) Resources and Expertise Available

The Inventory Report Schema is available on the EDItEUR website: www.editeur.org . EDItEUR runs an email list and discussion forum via Groups.io, as well as managing the EDItX International Steering Committee.

BIC Digital Audiobook Best Practice project members EDItEUR, Gardners Books and HarperCollins have experience of an Inventory Report trial undertaken in 2019. Should you wish to contact the trialists, this can be done via the Contact Us page on the BIC website.

BIC maintains the BIC Realtime standard for instant business transactions and reporting in the trade and library sectors. Realtime transactions are a form of EDItX and are particularly gaining traction with libraries.

c) Potential Impact

i) A “real solution to a real problem” (Luc Audrain, EDItX Steering Committee).
ii) Addresses a current supply chain challenge without the need for manual intervention.
iii) It enhances product discoverability and tradability.
iv) As an actively maintained, global standard, it provides a recognised and authoritative set of guidelines reflecting book industry needs.
v) It removes the need for trading partner specific (bespoke) formats and routines.
vi) It reduces development, support and cost overheads.
vii) It reflects the needs of the digital audio supply chain and its stakeholders.
viii) It complements and extends the use, relevance and applicability of existing EDI standards and message sets.
ix) It reflects the immediacy of today’s supply chain and the familiarity with self-service tools.
x) It comes with schema validation.
xi) The Inventory Report is actively used in Germany and Scandinavia. It has been trialled by EDItEUR, Gardners Books and HarperCollins.

6. Summary

Using an existing business standard that has been developed collaboratively, with the needs of both current digital and physical book supply chains in mind, offers a straightforward way to simplify and automate manual processes.

There is a clear opportunity to confirm the on-sale status of digital assets, thereby maximising discovery and revenue, at the same time as reducing support overheads.

7. Addendum

In considering the applicability of the EDItX Inventory Report, supply chain professionals are reminded that this isn’t the only report relevant to the digital audiobook supply chain.

The EDItX Sales Report can be used by digital distributors, platforms and other intermediaries to report sales to a publisher or audio originator. Again, standardising reporting reduces the development and support overheads. XML tag terminology and code lists will be familiar to users of ONIX 3.0 in this report too.

BIC Digital Audiobook Best Practice

Sustainability Checklist

With thanks to Andri Johnston, Digital Sustainability Lead at Cambridge University Press & Assessment, for her support and guidance.

A journal article published by Andri and colleagues at Carnstone summarises the impact of digital publishing on sustainability at Cambridge University Press & Assessment. This was a useful point of reference.

What does sustainability mean?

In BIC's Digital Audiobook Best Practice Project, we have defined sustainability as:

" ... balancing the economic, societal and environmental needs of the planet, both now and in the future. There is a heightened awareness of how our behaviours as consumers, employees and private individuals can adversely impact the planet."

Who controls sustainability?

Sustainability encompasses more than just environmental concerns. As supply chain professionals involved in content creation and distribution, we need to consider our roles as consumers and private individuals. So, it seems obvious that no single entity is in control. Sustainability requires collaboration. It's a team effort.

Points to consider

Rather than concentrate on how to measure sustainability, this document focuses on those aspects of digital audiobook content creation, management, discoverability and distribution that impact sustainability.

Evidence suggests that digital publishing produces fewer carbon emissions than traditional print publishing. That said, as digital publishing evolves, the use of audio and visual content will grow. Data volumes will be larger than those associated with straightforward eBooks.

Here is BIC's checklist of useful points to reflect on when trying to enhance the sustainability credentials of your current digital audiobook supply chain:

1). The human ear cannot distinguish the highest quality uncompressed, lossless audio.

a). What does the optimum user experience sound like?
b). Is there another lossless or lossy format that will do the job as well?
c). What are the implications for your preferred audio file format?

2). Uncompressed and lossless files require greater bandwidth, potentially increasing transfer, storage and cloud processing costs.

a). Is this necessary?
b). Are the current processes around file management as efficient as they could be?

3). Our industry's approach to metadata management usually means updating whole product records quite frequently, even if only limited data elements within the record have changed.

a). Do records need to be updated so often, particularly if downstream partners do not always apply those updates?
b). Do ONIX block updates provide a more efficient and sustainable way of updating product records?

4). Can cover images and other supplementary materials be optimised for the end consumer? Optimised does not necessarily mean of the highest quality. What impact will that have on sustainability and the consumer experience?

5). Think about what the most robust audio format is for your business needs. Optimum audio quality as well as file durability for on-going supply and reproduction matter.

6). Harnessing recognised industry standards and best practice to aid automation could remove ad hoc and/ or manual processes, as well as positively impact sustainability. Think of the resources required to manually check the status of digital audiobook assets and metadata on individual reseller and retailer platforms and websites: hosting services, communications networks, the internet and viewing devices to name but a few.

7). Keep digital assets, the related metadata and any supplementary materials together in one folder. This may include asset manifests, cover images, pdfs, sidecar files and sample files. Ensure that all files are relevant to the product. Discard or archive superfluous files to reduce storage overheads.

BIC Digital Audiobook Best Practice

Accessibility Checklist

We think of digital audiobooks as being accessible. They offer an alternative format for those who might have difficulty reading printed or ebooks.

What does accessible mean?

Accessibility refers to "ease of use". That's a generic definition. But if we look at accessibility from the perspective of those for whom digital audiobooks are essential rather than a 'nice to have', then accessibility has far greater impact.

The UK Association for Accessible Formats (UKAAF) defines a print disability as:

> *"a print impaired person means a person who has a physical or mental impairment which prevents the person from enjoying a copyright work to the same degree as a person who does not have that impairment... A person is not to be regarded as impaired by reason only of an impairment of visual function which can be improved, by the use of corrective lenses, to a level that is normally acceptable for reading without a special level or kind of light.*
>
> *Source: Statutory Instrument No. 1384. The Copyright and Rights in Performances (Disability) Regulations 2014."*

So, while over 2,000,000 people in the UK live with sight loss (from visual impairment and partial sight to blindness) according to the RNIB, audiobooks are just as relevant to those with dyslexia or motor-difficulties too. The British Dyslexia Association estimates that 6 million people in the UK have dyslexia, although they may not have received a diagnosis.

For a global perspective, the World Bank states that *"one billion people, or 15% of the world's population, experience some form of disability..."* and... *"Barriers to full social and economic inclusion of persons with disabilities include... the unavailability of assistive devices and technologies..."*.

Are all audiobooks accessible?

Not all audiobooks are created equal. Producing audiobooks that are truly accessible to those with a print impairment requires specialist skills and means reconsidering the whole lifecycle of the audiobook:

a) How the original text should be interpreted during the audio recording. Different subject categories of book, different text layouts and illustrated titles all require specific approaches:
    i. Fiction as well as non-fiction titles can have diagrams, footnotes, prefaces and forewords.
    ii. The role of the narrator is particularly important in fiction, where reading is for pleasure and the right voice or voices matter.
    iii. It may not be possible to transcribe the book directly into audio if the format won't make sense. Think of graphic novels where the text relies heavily on referring to illustrations.
    iv. Another factor to consider is how quickly a transcribed book will date. For example, in study guides the content is updated regularly and incorporates exercises and sample questions.
b) The recording environment needs to ensure that extraneous sound is minimised.
c) During the actual recording, the reader or voice actor will need to know how best to interpret text, footnotes, illustrations and quotes, to name but a few points.
d) Does the technology involved in recording and producing the audio master files lend itself to accessibility?
e) Is the technology used also compatible with devices and platforms?
f) Does the product record for the digital audiobook include those metadata elements considered important for accessibility purposes?

g) Think about how the consumer will navigate their way around the audiobook. How easy is navigation?
h) Audiobook supplementary materials (in pdf format) should have a structure and navigation features that lend themselves to accessibility. Is text to speech functionality available?
i) As the accessible audio market grows, consider whether demand, cost of production, rights holders and rights expiring are factors reducing the availability of the audiobook. Does the accessible audiobook have a shorter lifespan than the print or other versions?

Why does accessibility matter?

Publishers, other content creators, data aggregators, digital distributors, vendors, wholesalers, platforms, libraries, resellers, retailers and academic institutions all need to reflect on their role in the accessible digital audiobook market:

a) It's a growing market.
b) It should be inclusive and reflect the needs of all end consumers.
c) It can enhance business reputation.
d) It levels the playing field for those involved in the digital audiobook supply chain.
e) It supports the United Nations' Sustainable Development Goals that reference persons with disabilities.

Moreover, governments continue to legislate in terms of disability rights, equality and discrimination.

The upcoming European Accessibility Act will see the EU single market specifically legislate for products and services to be accessible to those with disabilities. Products covered by the act include e-readers, smartphones and other communications devices. Services covered include e-commerce, websites, mobile services and ebooks.

Although the UK has left the single market, those UK based organisations with a business presence in the EU will need to comply with the requirements of the act. From 28 June 2025, newly marketed products and services will be covered by the legislation.

BIC's mission is to make the UK and Ireland book supply chain more efficient and sustainable by developing standards and defining best practice. Our strategic focus is driven by our membership. Look out for further news on supply chain accessibility on our website and in our newsletters.

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