digital production partnership

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www.digitalproductionpartnership.co.uk

METADATA APPLICATION USER GUIDE

Introduction

Metadata is the information about a piece of media content which lets users know what it is and how to play it. By users, we mean not only people but also systems, such as play-out or library systems. Without the necessary accurate metadata, content will get lost or sent to the wrong channel, or the intended audience will be unable to find it. We're also trying to make broadcasters' lives easier and less costly by using the metadata to increase levels of automation in our systems, and reduce the levels of human effort currently required to check and manage all this.

Metadata is necessary with any programme or piece of content – think of labels on tape boxes, or the Video Tape Recording Report – but is particularly crucial when that content is produced digitally and sent to the broadcaster as a file. The DPP Metadata App v1.1 is designed to help production companies and facilities houses to create the metadata in a standard way and wrap it into the finished MXF file.

The DPP is encouraging system suppliers to build support for its file standard and metadata specification into future releases of consumer products, but until then the App is available to help long-form programme suppliers to meet our delivery requirements.

Access

The App can be downloaded from the DPP Website at:
http://www.digitalproductionpartnership.co.uk/

First of all you must register as a user, and give your email address. You will need a computer with the following minimum specification:

Windows: A 32 or 64 bit PC with a 1GHz Intel or AMD processor
At least 512MB of RAM

Mac: Mac OS X 10.6.3 or later

Once you have downloaded the App, you should be able to open and run it from the Program menu, and create a desktop shortcut to the home screen.

Please note:

Versions 1.0 and 1.1 of the application have been withdrawn.

Please download the current version 1.2 for use.

Version 1.3 of the metadata application is currently in the scoping phase.

Functions

The home screen shows three boxes providing access to the three main functions:

- Start New Project
- Import from Template
- Generate Sidecar XML

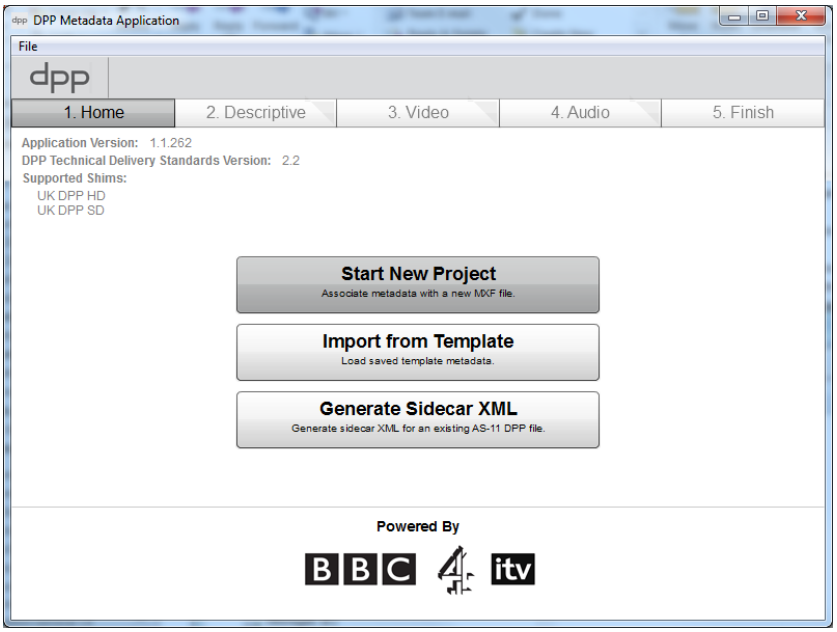
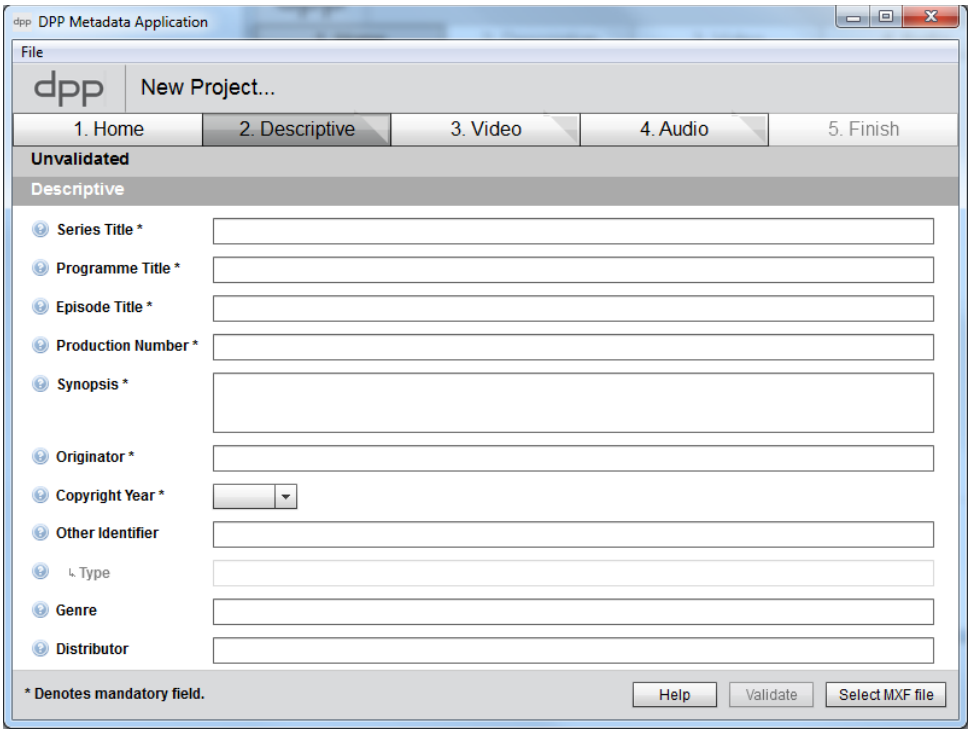


Figure 1: Home Screen

These are explained below, with guidance on how to work through them.

Start New Project

This is the default starting point and enables users to enter information directly into a series of forms which make up the overall DPP metadata collection. The first of these, Descriptive Metadata, is intended to be filled in manually by the production company and will be used to clearly identify the programme or editorial content of the finished file. Mandatory fields are identified with an asterisk.



The definitions for each of the terms required are given in the "Help" document, accessed by clicking on the button at the foot of the screen.

Figure 2: Descriptive Metadata Form

The Descriptive Metadata information can be entered in advance of programme completion and saved locally as a DPT template file (in XML) by accessing the main "File" menu on the tool bar and clicking on the "Export to Template" option. This is useful if there is a short turnaround time or multiple programmes need to be described in advance for a later bulk delivery. The template files containing the Descriptive Metadata can be emailed to a facility house or post department who will access them via the home screen ***Import from Template*** function and fill in the Technical Metadata when the programme is finished. Clicking on a DPT template file should also launch the App, to enable additional data entry or changes. (Currently available on Mac only).

If the programme has already been completed and an unwrapped MXF file is available, users should click on the "Select MXF File" button to choose the associated file.

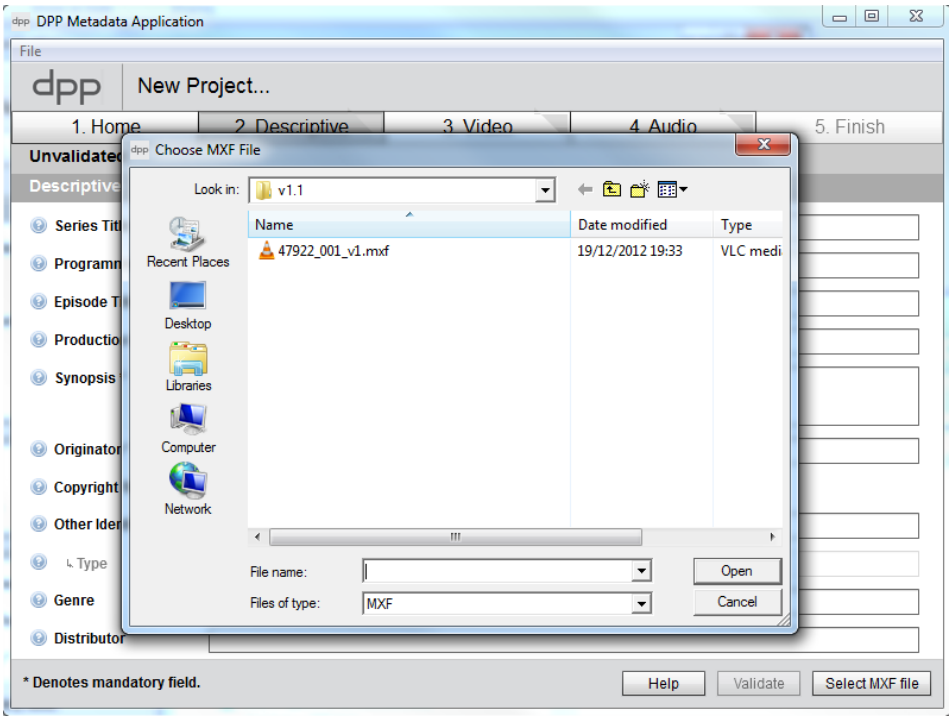


Figure 3: Select MXF File

The user can then complete the Descriptive Metadata form or import the saved DPT template file. If the file already has Descriptive Metadata wrapped with it, the App will give users the option to over-write it (if a new editorial version is being created) or keep the existing information if there is no change.

The MXF file may be held in a local post-production system or other file storage, and will contain Structural Metadata created during the encoding process. The DPP App will extract all the Structural Metadata from the MXF file, validate it against the specified standards, and automatically fill in the relevant values. If the file differs from the specified standard, the App will reject it as noncompliant. It is then up to the programme provider to rectify this and re-submit.

When the file is validated, the rest of the Technical Metadata must then be completed manually by selecting from a range of drop-down lists or Yes/No options. In some cases the selected answer will open another previously greyed-out field where further information is required. This reflects underlying business rules, and the drop-down lists contain only DPP-approved values. Some fields require free text entry, like the comment boxes for video artefacts, defects and so forth, and manual-entry time-code values for programme parts.

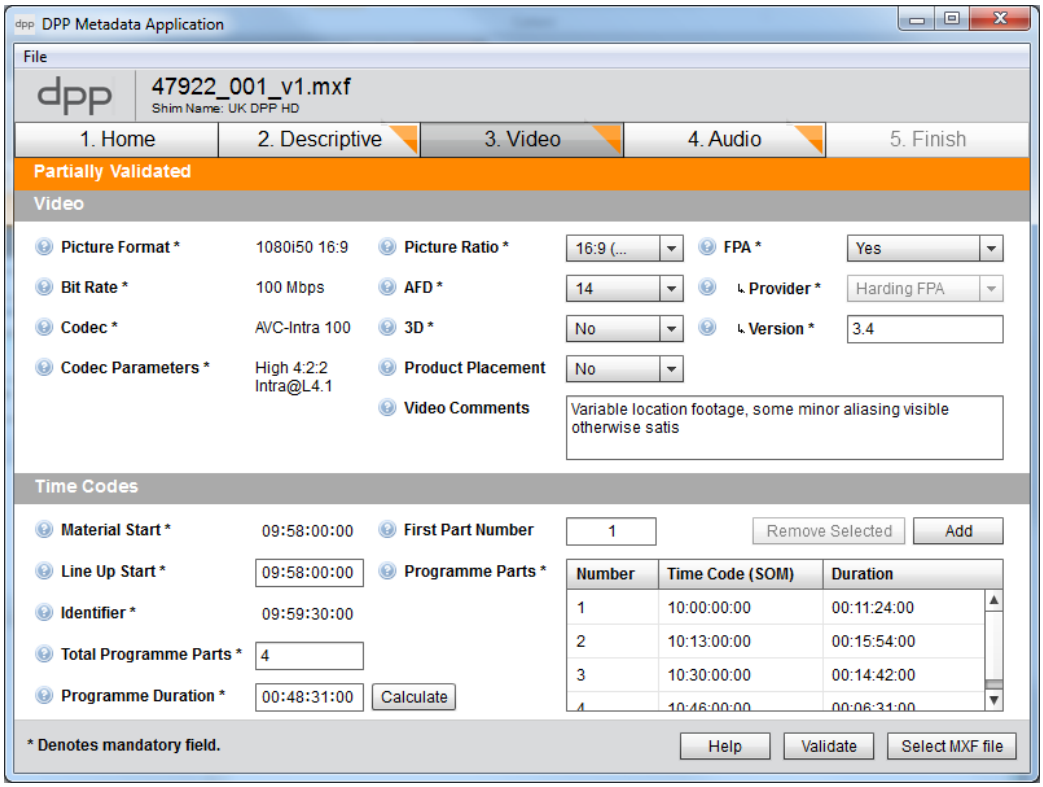


Figure 4: Video Form Partially Validated

Each form should be checked by clicking the "Validate" button. The screen-grab above shows the Video Form as partially validated, flagged as orange, meaning that further information is required. Red flags denote a problem or gap which needs to be resolved before the Project is complete. The App will indicate when all required information has been entered by adding a green flag in the heading.

The Audio Form will also have been partially populated from the MXF file, and then other values will be entered manually.

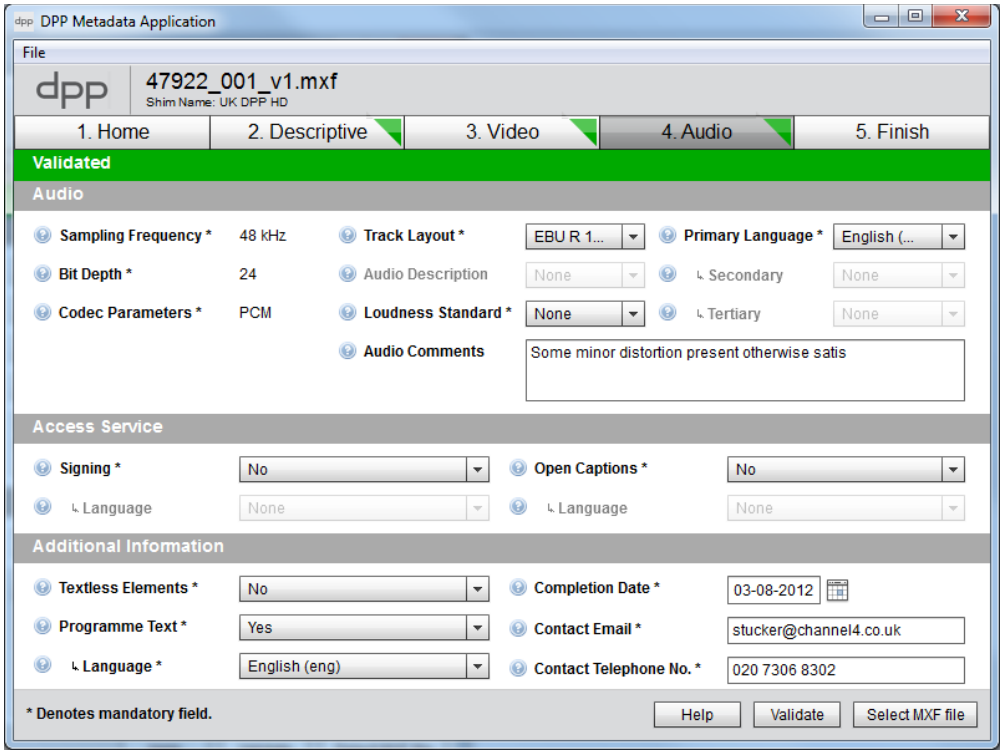


Figure 5: Audio Form Fully Validated

For Audio Track Layout, a helpful table is included in the "Help" document to show the options related to the chosen EBU recommendations. This sets out DPP-agreed business rules, such as if a Stereo programme provides a second language, it must use the 16-track option with digital silence on the un-used tracks rather than change the specified lay-out of the 4-track option. Invalid combinations will not be enabled or allowed.

The Access Services form must be completed, and where subtitles are delivered they must be contained in a separate file with the identical name to the programme MXF file, plus a specific file name extension. The Additional Information must also be filled in on the final page of the App.

Once all forms are green, the user should click through to the "Finish" form and select "Generate File". This inserts the metadata into an unwrapped MXF file, generates a new wrapped MXF file and an XML Sidecar file containing the metadata only.

If a wrapped MXF file already exists with all its metadata included, the App's ***Generate Sidecar XML*** function will generate the XML Sidecar only. The programme is then ready to deliver to the Broadcaster.

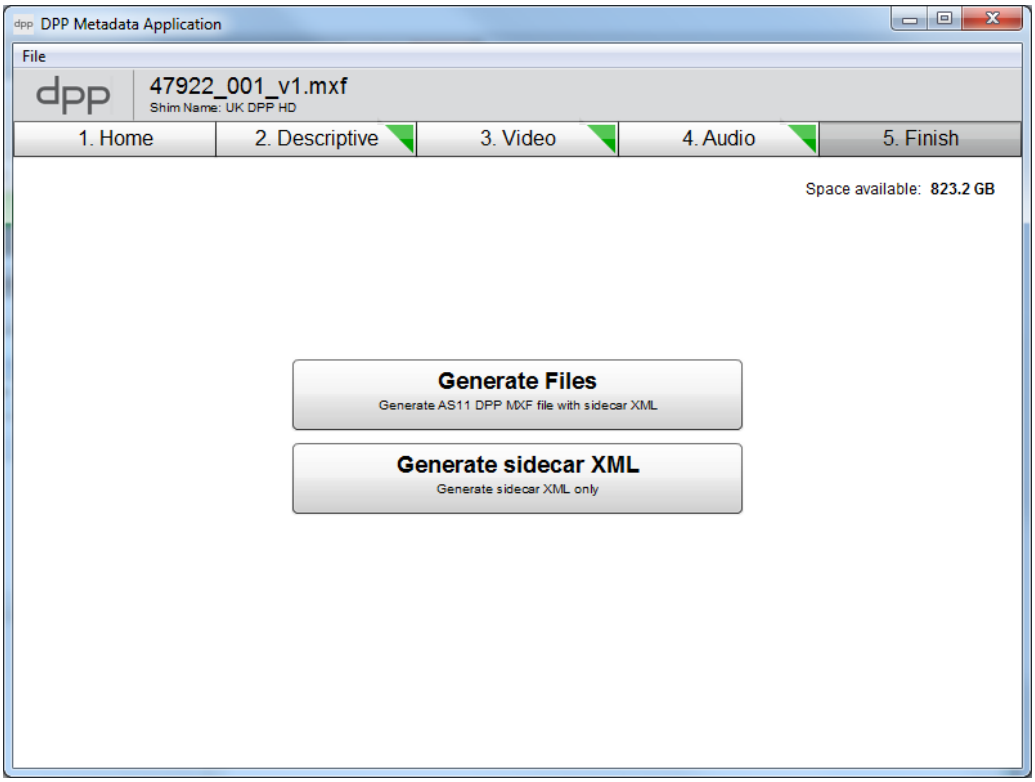


Figure 6: Finish Screen

Import from Template

This function opens a previously saved DPT template containing Descriptive Metadata, as stored locally by the production or facility company user. It is intended for use when the information can be completed in advance of MXF file creation, or when multiple files are planned for delivery in a batch. Opening the template should re-start the metadata entry process, associating the Descriptive Metadata with the relevant unwrapped MXF file, validating it and entering all the Technical Metadata as for ***Start New Project***.

Generate Sidecar XML

If a wrapped MXF file already exists, with all the necessary metadata, the App can create an XML Sidecar file which provides a copy. The XML contains some automatically generated additional fields as verification of the contents.

This includes an associated media file name, Part SOM (Start of Media, or first active frame), Part Duration, and a Checksum along with the Checksum Type.

Required Information

For required information and what needs to be entered, please refer to the document 'DPP Metadata App Information Definitions', which is also accessible via the "Help" button on the App ***Start New Project*** Forms.

Sources of Information – Production and Technical

The metadata fields in the App forms take three different forms according to the source of the information and the method for entering it:

- **Descriptive Metadata:** this is entered by the production company or programme provider as free text;
- **Technical Metadata – Structural Metadata:** this is derived automatically from the MXF file by the App, and shows in the forms as values for which there is no entry box. Once the MXF file has been read and validated by the App, the values will appear in the form against the appropriate heading e.g. Picture Format;
- **Technical Metadata – Other:** everything not derived from the MXF file must be entered manually either by selecting from drop-down values or entering free text. Greyed-out sub-fields are dependent on a previous answer e.g. "Signing = Yes" activates "Language = [options]".

How to deliver the information with the programme

The DPP subscribing broadcasters publish their own instructions for how to deliver the MXF and Side-car XML files to their play-out operation. Some such as the BBC are currently unable to accept file-base delivery but expect to be moving to it in 2013. Please check on the relevant broadcaster's website.

Sources of Help

Additional Help may be sought from the Broadcaster receiving the programme.

Glossary of Terms

AS-11
AS-11 is one of the file standards published by the US-based Advanced Media Workflow Association (AMWA). It is based on MXF OP1A and includes a metadata specification which in turn provides the basis for the DPP Metadata standard.

Checksum
A Checksum is a computer-generated numerical value based on the number of data bits in the message to be sent. The receiving application then applies the same formula identified in the Checksum Type to the message and checks to make sure the accompanying numerical value is the same. If it is, the receiver can assume that the message has been correctly exchanged. The Checksum Type used by DPP is known as MD5.

Metadata
Metadata is information about the programmes that we make held within the file, and for the DPP specification is either descriptive, e.g. programme / series title, or technical, e.g. video codec. This is used to ensure the production companies and broadcasters use a consistent set of metadata within their facilities. This metadata facilitates broadcast, re-broadcast and archiving of programming across the multiple platforms available in the digital world.

MXF
MXF stands for Material eXchange Format, and is an industry standard that has been developed over many years as a common file-sharing mechanism. It defines a number of options which act as containers or wrappers for the audio-visual content and associated metadata. The DPP has chosen one option as its standard for exchange, known as Operational Pattern 1A or OP1A, already adopted by the US-based Advanced Media Workflow Association (AMWA) as part of its AS-11 file standard.

OP1A
OP1A is the Operational Pattern 1A option of the MXF File format, and is designed to carry playable completed programmes and their associated metadata. It is not intended for work-in-progress or editing processes, which are better supported by OP-Atom.

Shim
In application terms, a Shim is a restricted version of a standard specification, designed to make checking compatibility as straightforward as possible i.e. there are no ambiguities or options. The DPP has honed down the AMWA AS-11 specification to two Shims, one each for HD and SD file delivery. In carpentry terms, a Shim is a small wedge.

Wrapper
Wrapper is a general term for the file structure which allows multiple components to be contained and retrieved with clear relationships between them. For example, the main programme video, audio tracks, control track, Descriptive and Technical metadata can be wrapped together in one file.

XML
XML stands for eXtensible Mark-up Language and is a method of coding text in a structured way which can be used to populate an electronic form or activate an instruction. For DPP, it is used to create a companion or “Side-car” file to the MXF media file which contains the associated metadata.

Frequently Asked Questions

SECTION	QUESTIONS	ANSWERS
Home	Which of the 3 headings should I choose? Start New Project, Import from Template, or Generate Sidecar XML?	If you are a programme supplier or their facility provider with one or a small number of files to send, go to ***Start New Project***. This enables you to enter the information directly into fields on the screen. You can associate the metadata with the relevant MXF file by clicking on the "Select MXF File" button at the bottom of the screen, which also imports the Technical Metadata from the MXF File. If you regularly supply multiple files, or need to submit content very quickly, you should be using the DPP Metadata App to create and save DPT template files. This enables you to prepare all the relevant Descriptive Metadata in advance, and then upload it to the App later. Clicking on the **Import from Template** box will take you to your saved templates so the process of Technical Metadata entry can begin. The ***Generate Sidecar XML*** box requires you to select an existing wrapped MXF file from your local folder, containing all the necessary metadata. The App can then create an XML Sidecar file which provides a separate copy of the information.
Download Facility	I tried to download the DPP Metadata App but my Anti-virus protection blocked it as a threat. How do I get round this?	Virus protection and security systems may identify the DPP App as an unknown source, but they provide dialogue boxes which allow you to accept the App as safe. Follow the instructions on your anti-virus product.
All	What do all the headings next to the boxes mean in the App?	If you click on the Help button at the bottom of the screen it will bring up a dictionary of all the terms used, with definitions.
Descriptive	Can I enter the Descriptive Metadata before the MXF File has been created?	You can prepare the Descriptive Metadata in advance using the DPP Template, and then import it when the MXF file has been created.
Descriptive	Who will use the synopsis information?	The synopsis is for the commissioning broadcaster to help verify and identify the programme.
Descriptive	Is there a defined list of genres that programme suppliers can pick?	No, there are too many variants in the industry. Suppliers are advised to use their discretion or follow the commissioning broadcaster's genres.
Descriptive (and Video)	If a programme is re-versioned in any way (e.g. compliance edit or part	The information about the programme version is given in the Programme Title field and should be regarded as an

SECTION	QUESTIONS	ANSWERS
	duration changes) where does the information go to make clear that it is different from the original?	extension of the title. The version must also have a unique Production Number
Video	Can I enter the Video and other Metadata in advance, or get my Facilities House to do it for me?	You can prepare the Video and other Metadata in advance once the programme has been completed using the DPP Template. However, the MXF file must be identical to the programme source file described. Any changes will invalidate the metadata and cause the file to be rejected. Facilities Houses may offer metadata creation as an additional service or add-on to post production or encoding services, to be agreed with the programme producer.
Video	In the Video section there are lots of headings with no boxes for data input, Where are these answers coming from?	These values are derived automatically by the DPP App from the MXF file itself. Once a user clicks on "Select MXF File" button, the metadata embedded in the file is read and validated automatically.
Video	In the Video section, it is not possible to enter data in the AFD box but it is marked as mandatory. How does this work?	Some fields are dependent on a "Yes" value being entered in one above. In this case, when the Picture Ratio value is selected, the AFD field becomes active. A guide to the dependent fields and their allowable values is available on the DPP website.
Video	What is the Product Placement field?	An indication that product placement is present in the programme.
Video and Audio	Who should fill in the Video and Audio Comments boxes, and will they be identifiable in any way?	The Comments fields would normally be filled in by the Editor or Technical Operator, and are used to indicate any known artefacts, defects or subjective quality issues.
Help	In the Help list of information fields, some items are identified as not shown in the interface but part of the XML. How does this work?	These cannot appear in the file but are external technical references to it, including the checksum and the MXF identifier of the file, so only appear in the XML.
Template	Where can I get the DPP template from for pre-loading?	The DPP template is created when the Descriptive Metadata form is filled in and then saved locally as a DPT file by selecting "Export to Template" from the File menu. When the next stage of data entry is required for video etc., the saved template can be accessed via the **Import from Template** box on the home screen.

DOCUMENT VERSION CONTROL NOTES

DATE	VERSION #	NOTES	AUTHOR	APPROVER
15/04/2013	1.0	'Metadata Application User Guide' first published on the DPP website	Carol Owens	Kevin Burrows
01/05/2014	1.0	Altered note on p.1		