

TF1 Group

Technical specifications for programs delivery

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1. Subject

This document contains the technical requirements for HD and UHD programs delivered to all TF1 Group channels in file mode. Its current version is applicable at the time of the delivery, it is available on <https://www.tf1pro.com/documentation>

2. Preamble

Parties explicitly agree that the program delivered shall meet the requirements stated in the **Reference** document: "Technical Recommendations for "Ready For Broadcast" Broadcasters CST/Ficam/HDFORUM CST-RT-040-TV" in its current version available on the following websites: FICAM (<http://www.ficam.fr>) and CST (<http://www.cst.fr>).

3. Ready-to-Broadcast HD deliverable

3.1 General Remarks

Program's delivery to channels of TF1 Group is made in file mode in HD format. According to the above-mentioned **Reference** document, a program delivered in file mode is made of:

- An MXF file compliant with the AMWA AS-10 specifications – Shim "HIGH_HD_2014" (see document in its current version on the AMWA website (<https://www.amwa.tv/specifications>).
- If applicable a multilingual subtitles file in .STL format in case of multilingual version.
- If applicable a deaf and hard-of-hearing subtitles file in .STL format in case of deaf and hard-of-hearing version.

3.2 MXF file organization

- Audiovisual content of the MXF file is only made of useful frames.
- According to the Purchase Order, the MXF file can contain a full program or neutral backgrounds.
- The program must start at TC_{in} = 00:00:00:00

The program could be ordered by TF1 Group in several parts and so delivered in several files. In this case, TC_{in} of each part will also start at TC_{in} = 00:00:00:00.

3.3 File designation

IDs of deliverable files will be provided by TF1 Group in the Purchase Order.

Video file:	[ID]+[Extension .mxf]
Multilingual subtitles file:	[ID]+[_VM]+[extension .stl]
Deaf and hard-of-hearing subtitles file:	[ID]+[_SME]+[extension .stl]

In case of redelivery of a program, TF1 Group will provide a new ID in a new Purchase Order.

3.4 Delivery process

Delivery conditions (including digital delivery address, transfer protocols, notification procedures) will be provided during the certification process of each provider by TF1 Group.

4. Complementary technical requirements – Ready-to-Broadcast HD

The following specifications come as a supplement to the above-mentioned **Reference** document.

4.1 Video

4.1.1 Black video

Programs containing black video without sound which last more than three (3) seconds will be rejected.

4.1.2 Video signal

The following table shows the video formats of the **Reference** document and specifies accepted video formats and required additional processing, depending on the original aspect ratio.

The MXF file will not contain any additional data of ANCILLARY DATA type (AFD code, OP-47, etc...).

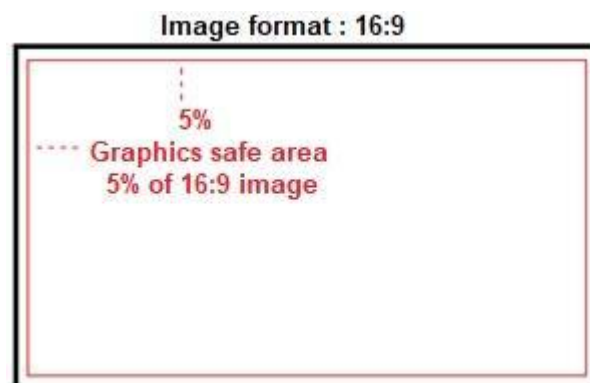
Original aspect ratio	Only 16:9 video
1,33	Add vertical black stripes on both sides of the frame
1,66	Add vertical black stripes on both sides of the frame
1,77	No processing
To 2,40	Add horizontal black stripes above and below the frame

4.1.3 Safe area for 16:9 full screen presentation

Programs delivered will comply with the requirements of the 16:9 safe area as shown in the table and diagram below.

This request concerns essentially TV shows.

	Vertical	Horizontal
Graphics safe margin	5 %	5 %



4.2 Audio

4.2.1 Audio essences

Audio essences will comply with the Purchase Order sent by TF1 Group according to the below configurations.

Audio tracks are exclusively PCM 24 Bits stereo encoded.

French Version

Pair 1 PCM	Pair 2 PCM	Pair 3 PCM	Pair 4 PCM
1-2	3-4	5-6	7-8
French Version	Mute	Mute	Mute

French Version + Audio Description

Pair 1 PCM	Pair 2 PCM	Pair 3 PCM	Pair 4 PCM
1-2	3-4	5-6	7-8
French Version	Audio Description	Mute	Mute

French Version + Original Version

Pair 1 PCM	Pair 2 PCM	Pair 3 PCM	Pair 4 PCM
1-2	3-4	5-6	7-8
French Version	Original Version	Mute	Mute

French Version + Original Version + Audio Description

Pair 1 PCM	Pair 2 PCM	Pair 3 PCM	Pair 4 PCM
1-2	3-4	5-6	7-8
French Version	Original Version	Audio Description	Mute

M&E + Original Version

Pair 1 PCM	Pair 2 PCM	Pair 3 PCM	Pair 4 PCM
1-2	3-4	5-6	7-8
M&E	Original Version	Mute	Mute

4.2.2 Audio silence

Extended silences may be treated as technical defect. Programs containing continuous silence of over 10 seconds could be rejected.

4.2.3 Subjective quality

In the case of format conversion with speed variation, with reference to article 2.2.3 of Recommendation CST - RT - 040 - TV - v1.2 - 2016, harmonization is requested in order to remain in the original tonality.

4.3 Subtitling

French subtitles are delivered in closed **EBU (or UER) N19-2002** format (forbidden types, line's length, etc.).
<https://tech.ebu.ch/docs/tech/tech3264.pdf>

Subtitles files list is compliant with the program Purchase Order ID

Multilingual subtitles file: [ID]+[_VM]+[extension .stl]
 Deaf and hard-of-hearing subtitles file: [ID]+[_SME]+[extension .stl]

A subtitle line does not exceed 36 characters.

Subtitles are synchronized with sound. (only applicable to Multilingual Version)

A subtitle minimum duration is (15) frames.

Two subtitles are separated by at least (4) blank frames

Positioning at scene break

- The subtitle must not disappear later than (3) frames before scene break
- The subtitle must appear not earlier than (2) frames after scene break

Positioning at scene overlap :

- The subtitle must not appear later than (3) frames before scene break
- The subtitle must disappear not earlier than (2) frames after scene break

Deaf and hard-of-hearing subtitles shall comply with the CSA charter and open with a waiting subtitle « ... ».
<https://www.csa.fr/Arbitrer/Espace-juridique/Les-relations-du-CSA-avec-les-editeurs/Chartes/Charte-relative-a-la-qualite-du-sous-titrage-a-destination-des-personnes-sourdes-ou-malentendantes-Decembre-2011>

General information of "blocGSI" in STL file are duly documented as per the above-mentioned **Reference** document. Additional information below is required in the "blocGSI".

	Teletext mode
Original title	<i>mandatory</i>
Translated title in french version	<i>if applicable</i>
Original episode title	<i>if applicable</i>
Translated episode title in french version	<i>if applicable</i>
Laboratory name	<i>mandatory</i>
Language code	<i>French</i>

5. Ready-to-Broadcast UHD deliverable

5.1 General Remarks

Program's delivery to channels of TF1 Group is made in file mode in UHD format.

An MXF Op1 file compliant with the SMPTE RDD32 :2017 XAVC™- MXF Mapping and Operating Points specifications.

- If applicable a multilingual subtitles file in STL format in case of multilingual version.
- If applicable a deaf and hard-of-hearing subtitles file in .STL format in case of deaf and hard-of-hearing version.

5.2 MXF file organization

- Audiovisual content of the MXF file is only made of useful frames.
- According to the Purchase Order, the MXF file can contain a full program or neutral backgrounds.
- The program must start at TC_{in} = 00:00:00:00

The program could be ordered by TF1 Group in several parts and so delivered in several files. In this case, TC_{in} of each part will also start at TC_{in} = 00:00:00:00.

Same Time Code information must be included in the Material Package and the Source Package.

5.3 File designation

IDs of deliverable files will be provided by TF1 Group in the Purchase Order.

Video file:	[ID]+[Extension .mxf]
Multilingual subtitles file:	[ID]+[_VM]+[extension .stl]
Deaf and hard-of-hearing subtitles file:	[ID]+[_SME]+[extension .stl]

In case of redelivery of a program, TF1 Group will provide a new ID in a new Purchase Order.

5.4 Delivery process

Delivery conditions (including digital delivery address, transfer protocols, notification procedures) will be provided during the certification process of each provider by TF1 Group.

6. Complementary technical requirements – Ready-to-Broadcast UHD

6.1 Video

6.1.1 Data Video Specification

Codec Video	Sony XAVC Class 300 / Intra / CBG
Image Resolution	H 3840 x V 2160 pixels
Scanning	Progressive
Sampling	4 :2 :2
Quantization	10 bit
Bitrate	- 250 Mbps en 25p - 500 Mbps en 50p
Colour space	ITU-R BT.709
Accepted frame rates	- 25p in cases where the program is shot in 24p or in 25p - 50p in other cases

6.1.2 Black video

Programs containing black video without sound which last more than three (3) seconds will be rejected.

6.1.3 Video signal

The following table shows the video formats of the **Reference** document and specifies accepted video formats and required additional processing, depending on the original aspect ratio.

The MXF file won't contain any additional data of ANCILLARY DATA type (AFD code, OP-47, etc...).

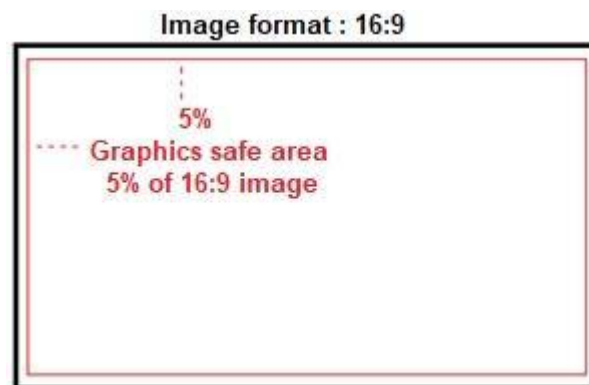
Original aspect ratio	Only 16:9 video
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French Version + Original Version + Audio Description

Pair 1 PCM	Pair 2 PCM	Pair 3 PCM	Pair 4 PCM
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French Version	Original Version	Audio Description	Mute

M&E + Original Version

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1-2	3-4	5-6	7-8
M&E	Original Version	Mute	Mute

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6.2.2 Audio silence

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6.2.3 Subjective quality

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