

# Appendix G. Standart VideoRD 2.0. Format of the disk with video referee results.

## Introduction

Disk materials must contain only one sport event (competitions)<sup>1</sup>.

Disk materials must contain video clips from recordings of fights and data files.

Each video clips must contain only one fight record (without pauses before and after<sup>2</sup>). And one fight should be recorded in a single clip. The video must contain (include) the following information:

1. the fencers name,
2. the scoring machine lamps,
3. the match time (from scoring machine) with millisecond precision,
4. the actual geographic time with millisecond precision,
5. the timer status (halt, wait, fight, pause and e.t.c).

If the system is recording from multiple cameras simultaneously record from one camera must be maintained in a separate clip. Each clip must be synchronized. The discrepancy should not be more than 0.5 seconds

Each data files must contain scoring machines states. The data must be synchronized with the clip. The discrepancy should not be more than 0.5 seconds

## Disk structure

At the root of the disc should be only one folder with competition name in free style (but, only English letters and numbers). For example:

**\ Fleuret\_de\_St\_Petersbourg\_2013**

If one competition saved in some disks then folder can be:

**\Disk<diskNo>\_Fleuret\_de\_St\_Petersbourg\_2013**

For example, the folder in the third disk can be named

**D:\Disk3\_Fleuret\_de\_St\_Petersbourg\_2013**

In the folder should be the full XML data file competitions. The file name must be the same as the folder name:

**D:\Disk3\_Fleuret\_de\_St\_Petersbourg\_2013\Disk3\_Fleuret\_de\_St\_Petersbourg\_2013.xml**

Subfolders are not required, but may be optional disk creator.

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<sup>1</sup> Sport event is event in the one place and one time.

<sup>2</sup> The clip should begin with the start of the timer and stop at 5 seconds after stopping the timer in the last round

## The files name

The file name for each clip must follow the format:

<Sportcode>\_<Gender>\_<Weapon>\_<Class>\_<EventName>\_<Phase>\_<BoutNumber>\_<UniqueID>

Valid values:

##	Field	Description	Valid values
1.	Sportcode	Always FE	FE
2.	Gender	Weapon (only one char): M – Men F – Women X – Mix	M F X
3.	Weapon	Weapon (only one char): E – epee F – foil S – sabre	E F S
4.	Class	Individual or Team	Individual Team
5.	EventName	Name of the Event in free style. Use only 'A'..'Z','a'..'z','0'..'9'.	Example: SpbFleuret2014
6.	Phase	Stage of the competitions: F1 – final SF – semifinal Txxx – Tableaux Pxxx – Preliminary Tableaux Pxxx – poules, in the team competitions: T5-8, T8-16, T8-12, T13-16 T3d – bout for 3d place T5d,T7d,T9d,T11d,T13d,T15d – bouts for 5d,7d,9d,11d,13d,15d place	Examples F1 SF, T32 P128 T3d
7.	BoutNumber	Number of the bout in the Phase	1 32
8.	UniqueID	use it when we have some clips for one bout. (This situation can be when working with video editor).	

For each clip can be free files:

- .mp4 or .avi – with video clip,
- .xml – with metadata,
- .bin2 – with scoring machines log.

## Video and audio codec's

All clips should be in

### Video

Codec: h264

CRF quality settings: 23 for the beginning

Resolution: 16 by 9, 1280 x 720 for first season, (after 01.01.2016: 1920 x 1080)

Frames per second: same as used recording device

Container: MP4 or AVI

### Audio

Codec: MP3

Bitrates: 192kb

Channels: 2

Sampling rate: 44100 (after 01.01.2016: 48000)



## Format of the metadata file

The metadata file has the following format

- Text structure – XML 1.0
- Encoding – UTF-8
- Base XML structure

```
<Event>
    <Competition>
        .....
    </ Competition>
    <VideoEditors>
        .....
    </ VideoEditors >
    <Analyzers>
        .....
    </Analyzers>
</Event>
```

Root node “Event” is provides general information about the event (name, place and date of, etc.).

Node “Competition” is provides information about current bout (weapon, gender, class competition, athletes, referees, classifications and results of phases). This node id\s provide information only about current bout. Not more.

Node “Videoeditors” is provides information for special video editor software (see the section “2. Format of the metadata file (Node “VideoEditors”)”).

Node “Analyzers” is provides information for special fencing bouts analyzer software (see the section “2. Format of the metadata file (Node “Analyzers”)”).

## 0.Format of the metadata file (root node “Event”)

The node **<Event>** is the root node of the XML. Node “Competition” is provides information about current bout (weapon, gender, class competition, athletes, referees, classifications and results of phases). This node id\’s provide information only about current bout. Not more.

### The node “Event” attributes

Name	Description	Possible values	Examples	May by null	Default value
Sport	Always “FE”	“FE”	“FE”	no	“FE”
Season	Events season	Char[9]/[YYYY/YYYY]	“2013/2014”	yes	“”
Name	Name of the event	Char[128]	“Moscow Sabre 2015”	yes	“”
Start	The first day of the event	Char[10]/[DD.MM.YYYY]	“21.12.2015”	yes	“”
End	The last day of the event	Char[10]/[DD.MM.YYYY]	“23.12.2015”	yes	“”
Venue	The place of the event	Char[128]	“MOSCOW. SKZ DRUZHBA”	yes	“”
Location	NOC	Char[3]	“RUS”	yes	“”
EventID	Event ID from FIE database	integer	“321”	yes	“”
XMLDate	The date of the	Char[10]/[DD.MM.YYYY]	“23.12.2015”	yes	“”
XMLCreator	The name of the creator software	Char[128]	“Roboteco VideoEditor v 1.0.”	yes	“”

The node **<Event>** may include child nodes:

1. **<Competition>** – is provides information about current competition (weapon, gender, class, fencers, referees, classifications and results of each phases),
2. **<VideoEditors>** – is provides information about structure of video (for example, parts without actions: pauses, weapon repairs, medic, etc)
3. **<Analyzers>** – is provides information about fencers actions in the fight and statistical analysis,

*Example:*

```
<Event Sport="FE" Season="2014/2015" Name="Championnats du Monde 2014" Start="15.07.2014" End="23.07.2014" EventID="432" Venue=" KAZAN (RUSSIA)" Location="RUS" XMLDate="05.01.2015" XMLCreator="">
```

## 1.Format of the metadata file (Node “Competition”)

Node <Competition> is provides information about current competition (weapon, gender, class, fencers, referees, classifications and results of each phases),

### The node “Competition” attributes

Name	Description	Possible values	Examples	May by null	Default value
Category	Category of the competition: Cadet, Junior, Senior or Veteran	“Senior” “Junior” “Cadet” “Veteran”	“Senior”	yes	“”
ParaClass	Para class	“A” “B” “AB” “C”	“A”	yes	“”
Name	Name of the competition	Char[128]	“Men Sabre Individual”	yes	“”
Start	The first day of the competition	Char[10]/[DD.MM.YYYY]	“21.12.2015”	yes	“”
End	The last day of the competition	Char[10]/[DD.MM.YYYY]	“22.12.2015”	yes	“”
Weapon	Weapon of the competition	“Epee” “Foil” “Sabre”	“Foil”	yes	“”
Gender	Gander of the competition	“M” “F” “Mix”	“F”	yes	“”
CompetitionClass	Class of the competition	“Individual” “Team”	“Individual”	yes	“”

The node <Competition> may include child nodes:

- 1.1. <Participants> – is provides information about fencers in the current competition,
- 1.2. <Referees> – is provides information about referees in the current competition,
- 1.3. <Phase> – is provides information about results of the phase of the competition.

*Example:*

```
<Competition Category="Cadet" ParaClass="" Name="Men Foil Individual" Start="30.11.2014" End="30.11.2014" Weapon="Foil" Gender="M" CompetitionClass="Individual">
```

Node **<Participants>** – is provides information about fencers in the current competition. This node contains child nodes **<Participant>**: one for each athlete. For example, If we have 65 athletes, so it will be 65 nodes **<Participant>**.

### **1.1.The node “Participant” attributes**

Name	Description	Possible values	Examples	May by null	Default value
FIE_ID	ID from FIE database	integer	“45323”	yes	“”
Lastname	Last name of the fencer	Char[128]	"SAVEANU"	yes	“”
Firstname	First name of the fencer	Char[128]	“Niklas”	yes	“”
DateOfBirth	Fencer date of birth	Char[10]/[DD.MM.YYYY]	“21.12.1986”	yes	“”
Gender	gender of the athlete	“M” - men “F” - women	“M”	yes	“”
Handedness	Hand of the athlete	“R” - right “L” -left	“L”	yes	“”
Nation	NOC	Char[3]	“RUS”	yes	“”
Licence	FIE licence	Char[10]	“25011988001”	yes	“”

### ***Individual competition***

In the individual competition node **<Participant>** has no child nodes.

*Example:*

```
<Participants>
  <Participant FIE_ID="836415" Lastname="Chen" Firstname="Xing Jian"
    DateOfBirth="04.05.1998" Gender="M" Handedness="R" Nation="SIN"
    Licence="00836415"/>
  <Participant FIE_ID="834683" Lastname="Caspersen" Firstname="Felix Bo"
    DateOfBirth="19.01.1999" Gender="M" Handedness="L" Nation="DEN"
    Licence="00834683"/>
</Participants>
```

### ***Team competition***

In the team competition node **<Participant>** has child nodes **<Athlete>** .

Node **<Participant>** is provides information about team. Child nodes **<Athlete>** provides information about team member.

Node **<Athlete>** has the same attributes as node **<Participant>** in individual competitions.

*Example:*

```
<Participants>
  <Participant FIE_ID="xxx1" LastName="SINGAPORE 2" Nation="SIN" Rank="13" Points="">
    <Athlete FIE_ID="836415" Lastname="Chen" Firstname="Xing Jian" DateOfBirth="04.05.1998"
      Gender="M" Handedness="R" Nation="SIN" Licence="00836415"/>
    <Athlete FIE_ID="830961" Lastname="Yau" Firstname="Han Xiang" DateOfBirth="02.08.1998"
      Gender="M" Handedness="R" Nation="SIN" Licence="00830961"/>
    <Athlete FIE_ID="834506" Lastname="YEO" Firstname="Jing Zhe" DateOfBirth="16.09.2000" Gender="M"
      Handedness="R" Nation="SIN" Licence="00834506"/>
    <Athlete FIE_ID="832698" Lastname="GOH" Firstname="Akira Yu Xiang" DateOfBirth="18.11.1999"
      Gender="M" Handedness="R" Nation="SIN" Licence="00832698"/>
  </Participant>
  <Participant FIE_ID="xxx2" LastName="DENMARK 1" Nation="DEN" Rank="19" Points="">
    <Athlete FIE_ID="834683" Lastname="Caspersen" Firstname="Felix Bo" DateOfBirth="19.01.1999"
      Gender="M" Handedness="R" Nation="DEN" Licence="00834683"/>
    <Athlete FIE_ID="837879" Lastname="Rykind-blarke" Firstname="Christoffer" DateOfBirth="15.09.2000"
      Gender="M" Handedness="R" Nation="DEN" Licence="00837879"/>
    <Athlete FIE_ID="776997" Lastname="Valeur" Firstname="Maxim" DateOfBirth="30.06.2000"
      Gender="M" Handedness="R" Nation="DEN" Licence="00776997"/>
  </Participant>
</Participants>
```

Node **<Referees>** – is provides information about referees in the current competition. This node contains child nodes **<Referee>**: one for each referee. For example, If we have 13 referee, so it will be 12 nodes **<Referee>**.

**1.2.The node “Referee” attributes**

Name	Description	Possible values	Examples	May by null	Default value
FIE_ID	ID from FIE database	integer	“342”	yes	“”
Lastname	Last name of the referee	Char[128]	“SAVEANU”	yes	“”
Firstname	First name of the referee	Char[128]	“Niklas”	yes	“”
DateOfBirth	referee date of birth	Char[10]/[DD.MM.YYYY]	“13.10.1945”	yes	“”
Gender	gender of the referee	“M” - men “F” - women	“M”	yes	“”
Nation	NOC	Char[3]	“RUS”	yes	“”
Licence	FIE lince	Char[10]	“25011988001”	yes	“”

The node **<Referee>** has no child nodes.

*Example:*

```
<Referee FIE_ID="692060" Lastname="ABADIA LOMBILLO" Firstname="Jose Luis" DateOfBirth="15.09.1958"
Gender="M" Nation="CUB" Category="" Licence="15091958000"/>
```



The node <Phase> is provides information about results of the phase of the competition.

### 1.3.The node "Phase" attributes

Name	Description	Possible values	Examples	May by null	Default value
Name	Name of the phase	Char[128]	"Finale"	yes	""
Code	Phase code	Stage of the competitions: F1 – final SF – semifinal Txxx – Tableaux Pxxx – Preliminary Tableaux Pxxx – poules, in the team competitions: T5-8, T8-16, T8-12, T13-16 T3d – bout for 3d place T5d,T7d,T9d,T11d,T13d,T15d – bouts for 5d,7d,9d,11d,13d,15d place	Examples F1 SF, T32 P128 T3d	yes	""
Start	Time of start phase	Char[5]/[hh:mm]	"10:00"	yes	""
End	Time of end phase	Char[5]/[hh:mm]	"12:30"	yes	""
NumberOfMatches	Number of matches in the phase	integer	"32"	no	"1"
Location	Place of Phase	Char[128]	"Grand arena"	yes	""
Sequence	order in current competition	int	"3"	yes	""

The node <Phase> has nodes <Match>. The number of nodes <Match> must match the value attribute **NumberOfMatches**. Each node <Match> is provide information about one fight. For example, if <Phase Code="T64" NumberOfMatches=32> (information about Tablo 64), it should be 32 child nodes <Match>.

The node <Match> is provides information about results of the one fight

**1.3.1.The node “Match” attributes(child of node <Phase>)**

Name	Description	Possible values	Examples	May by null	Default value
No	Number of order in the matches	integer	"1" "2"	no	"1"
Start	Time of start match	Char[5]/[hh:mm]	"10:00"	yes	""
End	Time of end match	Char[5]/[hh:mm]	"10:25"	yes	""
Piste	Name of the piste	Char[16]	"1" "red" "Podium"	yes	""
Quarter	Quarter of Tablo	Can only be: 1,2,3 or 4	"2"	yes	""

The node <Match> may include child nodes:

- 1.3.1.1. <Referee> – is provides information about referees in the current fight,
- 1.3.1.2. <Participant> – is provides information about fencers in the current fight,
- 1.3.1.3. <Period> – is provides information about results of the round of the fight in the team competition.
- 1.3.1.4. <Video> – is provides information about fencers action and video stamp.

**1.3.1.1.The node “Referee” attributes (child of node <Match>)**

Name	Description	Possible values	Examples	May by null	Default value
REF	equal value of attribute FIE_ID in the node <Referee> (in the section <Referees>)	integer	"3453"	no	"1"
FunctionCode	Role of the referee in this match	REF – is referee VID – is referee on video	"REF" "VID"	yes	""

The node <Referee> has no child nodes.

**1.3.1.2.The node “Participant” attributes (child of node <Match>)**

Name	Description	Possible values	Examples	May by null	Default value
REF	equal value of attribute FIE_ID in the node <Participant> (in the section <Participant s>)	integer	"3453"	no	"1"
Score	Score of this fencer or team	0,1, ..., 45	"1" "45"	yes	""
Status	Type of the result this fencer or team in this match	V - Winner D - Defeat T - Winner by Toss	"V"	yes	""
IRM	????				
Side	Side of the team in the piste: right or left	L - left R - right	"L"		

The node <Participant> has no child nodes.

**1.3.1.3.The node “Period” attributes (child of node <Match>)**

Name	Description	Possible values	Examples	May by null	Default value
ID	Number of the round.	1, ..., 9	"1"	no	"1"

The node <Period> has 2 child nodes <Athlete>.

**1.3.1.3.1.The node “Athlete” attributes (child of node <Period>)**

Name	Description	Possible values	Examples	May by null	Default value
REF	equal value of attribute FIE_ID in the node <Participant> (in the section <Participant s>)	integer	"3453"	no	"1"
Score	Individual score in this round for this fencer	0,1, ..., 45	"1" "10"	no	"0"

**1.3.1.4. The node "Video" attributes (child of node <Match>)**

<b>Name</b>	<b>Description</b>	<b>Possible values</b>	<b>Examples</b>	<b>May by null</b>	<b>Default value</b>
Vendor	Vendor of the video referee software	Char[128]	"Roboteco"	no	"1"
Name	Name of the file with video of this match	Char[256]			

Each software developer (Vendor) can add their child nodes and attributes. The vendor makes a decision whether or not to publish a description of the data attributes

## **2. Format of the metadata file (Node “VideoEditors”)**

Node “Videoeditors” is provides information for special video editor software.

Node “Videoeditors” may include one or more child nodes “Videoeditor”.

Node “Videoeditor” node should contain a mandatory attribute “Vendor”. This attribute specifies the name of the vendor. Structure of nodes and attribute every vendor develops independently. . The vendor makes a decision whether or not to publish a description of the data nodes and attributes

## **3. Format of the metadata file (Node “Analyzers”)**

Node “Analyzers” is provides information for special fencing bouts analyzer software.

Node “Analyzers” may include one or more child nodes “Analyzers”.

Node “Analyzers” node should contain a mandatory attribute “Vendor”. This attribute specifies the name of the vendor. Structure of nodes and attribute every vendor develops independently. . The vendor makes a decision whether or not to publish a description of the data nodes and attributes

## Format of the log file

The log file has the following format

- Text file
- Encoding – ANSI
- One sting is one state of the scoring machine

Example of the string with scoring machine state

[00000000004033600000]R0G0W0w0T00:02:59.000P00/00C0/0r1p0t0

### Structure of the string with scoring machine state

#	Name	Size (chars)	Position	Description	Example
1	Time marker	22	1-22	time in nanoseconds from the start of clip ['+<20 chars> + ']	[00000000004033600000]
2	Left Lamp (Red)	2	23-24	Red lamp status R1 - on R0 - off	R1
3	Right Lamp(Green)	2	25-26	Green lamp status G1 - on G0 - off	G0
4	Left White lamp (red side)	2	27-28	White lamp (red side) W1 - on W0 - off	W1
5	Right White lamp (green side)	2	29-30	White lamp (green side) w1 - on w0 - off	w0
6	Timer	13	31-43	Value of the scoring machine timer in format hh:mm:ss.000	T00:02:23.325
7	Score	6	44-49	Score in the format P<left score>/<right score>	P00/00 P01/15
8	Cards	4	50-53	C<left card/right card>	C0/0 C0/1
9	Round	2	54-55	r<round no>	r1 r9
10	Priority	2	56-57	p0 - priority undefined p+ - priority for right site p- - priority by left side	p0 p+ p-
11	Timer status	2	58-59	t0 - the timer is stop t1 - the timer is working	t0 t1

Every time there is an important event, the state of the machine should be saved in a log file. The discrepancy between event and save should not be more than 0.1 seconds

See the list of the important events in Appendix C. Important events on the piste.