

FIS Data Exchange XML Protocol Timing and Data Technical Report

Valid for Timing Report software version 6.7+

Document

Timing Report XML Description

Version

1.17

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1. General

This document provides an explanation of the protocol used for the FIS Data Exchange for Timing and Data Technical Reports.

Timing and Data Technical Report is used in:

- Alpine Skiing (AL)
- Freestyle Skiing (FS)
- Snowboard (SB)
- Telemark Skiing [™]
- Masters (MA)
- Grass Skiing (GS)
- Cross-Country (CC)
- Nordic Combined (NK)
- Speed Skiing (SS)
- Para Cross-Country (PCC)
- Para Alpine (PAL)
- Para Snowboard (PSB)

For Alpine Parallel, Freestyle Ski Cross, Snowboard Cross and Para Snowboard Cross events a Timing Report can be sent for Qualification + Finals (only one race codex in FIS calendar) or for Qualification and Finals separately (race codex for each phase in FIS calendar).

A Timing Report for Freestyle Ski Cross, Snowboard Cross and Snowboard Cross Team is only mandatory for categories Olympic Winter Games, World Championships, World Cup and World Junior Championships.

For following FIS disciplines and events NO Timing and Data Technical Report is needed:

- Freestyle / Freeski: Aerials, Aerials Team, Aerials Team Qualification, Aerials Syncro, Halfpipe, Slopestyle, Big Air, Big Air Team, Ski Cross Qualification (only), Rail Event
- Snowboard: Halfpipe, Slopestyle, Big Air, Snowboard Cross Qualification (only), Rail Event

1.1 XML file

Encoding of the XML file must be UTF8. A DTD definition must not be used.

Language for the content is English, French or German.

If optional elements are used (not empty) they should at least contain the required child elements. Empty elements should not be written to the XML file.

The structure of the XML file and its content will be verified by FIS and a confirmation email will be sent out to the sender of the file containing the result of processing.

1.2 XML file transmission

The timing report XML files must be sent to: results@fis-ski.com The subject of the email must contain for easy email identification the NSA code and race codex.

Example email subject: AUT1234

File name of the XML files: [NSA code][competition codex (4 digits)].xml

Example XML file name: AUT1234.xml

Result XML files can be sent as one file or also more than one file within one email. Files can be also sent packed as ZIP file. The ZIP file must only contain the XML result file(s) but no folders or hidden system files and must not be password protected.

1.3 Software

The Timing Report XML file can be generated out of the timing software (if supported) or the FIS software Timing and Data Technical Report can be used.

Downloads of the installation packages for the latest Timing Report software version for Windows (10, 11) and macOS 11+ (64bit) are available on FIS website in Timing / Data section.

The Timing Report software will need an internet connection to check for updates and download latest information about timing devices and FIS data from FIS database on a weekly basis. If the computer running the Timing Report software cannot be online all the time we recommend connecting to the internet at least after installation of the software and at the beginning of each season but better also several times during the season to receive the latest data.

Please make sure that following ports are open in your firewall settings for different online functionalities of the software:

- HTTP/HTTPS: 80, 8080, 443
- MySQL: 3306
- POP, IMAP, SMTP: 25, 110, 465, 587, 993, 995

1.4 Default timing report XML file for data transfer

The software supports an optional default timing report XML file for data transfer at software launch. The timekeeper has the option to transfer a (partly) prepared timing report XML files containing timing data from the timing system to the Timing Report software. Without any other settings, the Timing Report software will use following default paths for checking:

Windows: C:\Users\Public\Documents\FIS_Temp\fis-tr-default.xml
macOS: ~/Users/Shared/FIS_Temp/fis-tr-default.xml

When a file was found, it will be loaded at program launch. If the path or file is not available the software will start with an empty report. The path and file need to be created and written from the timing software. The default path can also be changed in the Timing Report software settings.

1.5 Support contact

For support requests, questions and feedback please contact the FIS IT department: it@fis-ski.com.

A support request for a certain race should at least contain the FIS race codex and a short description of the issue. Preferred support language is English.

2. Structure of XML file

{SECTOR} has to be replaced by the sector code of the selected FIS discipline: AL, FS, SB, TM, MA, GS, CC, NK, SS, PAL, PSB or PCC.

2.1 <Fisresults>

The general term for the results of all FIS competitions, root element.

Element	Data	Child elements	Description	Required
<OSversion>	string		Version operating system used to generate Timing Report XML for statistical evaluations Format: [OS name]-[OS version] Example: Windows-11 macOS-Sequoia	optional
<XMLversion>	string		Version number of the Timing Report XML description which the software supports	optional
<Raceheader>		<Season> <Codex> <Nation> <Discipline> <Category> <Type> <Eventname> <Place> <Racedate>	Information to define each event. The following information is applicable to all FIS disciplines. Each FIS discipline has a specific race header with further technical data.	required
<{SECTOR}_race>		<Jury>	Information about the chief of race	required
<{SECTOR}_timingreport>		<Timekeeper> <Devices> <Connections> <Timing>	Content of the timing report	required

Attributes of <Raceheader> :

Element	Attribute	Attribute values
<Raceheader>	Sector	AL, FS, SB, TM, GS, MA, CC, NK, SS, PAL, PSB or PCC
<Raceheader>	Gender	M = Men W = Women A = Mixed

2.2 <Raceheader>

Element	Data	Child elements	Description	Required
<Season>	integer		FIS Season e.g. 2012 for July 2011 – June 2012	required
<Codex>	Integer		The unique identification number for each competition with the FIS discipline (latest details can be found in the calendar section of the FIS website)	required
<NAT_code>	string		National race code, optional use for national purposes, max. 7 characters	optional
<Nation>	string		The three letter FIS code for the organizing nation (latest details can be found in the calendar section of the FIS website)	required
<Discipline>	string		The respective event to the FIS discipline According event code provided by FIS calendar Special cases: see the Discipline special cases table below	required
<Category>	string		The FIS abbreviation for the category of competition specific to the FIS discipline According category code provided in FIS calendar	required
<Type>	string		Type of content TR = Timing report	required
<Eventname>	string		Name of event as published in FIS calendar	optional
<Place>	string		Resort, town, etc. of competition venue	required
<Racedate>		<Day> <Month> <Year>	Date of race	required

<Discipline> special cases:

Discipline	Code	Description
Alpine	PSLQ	Parallel Slalom Qualification
	PGSQ	Parallel Giant Slalom Qualification
Freestyle	SXF	Ski Cross Finals
	SXQF	Ski Cross Qualification + Finals
Snowboard	SBXF	Cross Finals
	SBXQF	Cross Qualification + Finals
	PSLQ	Parallel Slalom Qualification
	PGSQ	Parallel Giant Slalom Qualification
Telemark	PSQF	Parallel Sprint Qualification + Final
	PSF	Parallel Sprint Final
Para Alpine	PARQ	Parallel Qualification
Para Snowboard	PSLQ	Parallel Slalom Qualification
	SBXQF	Cross Qualification + Finals
	SBXF	Cross Finals



Attention: **<Discipline>** codes for Cross-Country and Nordic Combined follow from season 2027 on the event code provided by FIS calendar.

2.2.1 <Racedate>

Element	Data	Description	Required
<Day>	integer	Day in numerical form: 1, 11, 21, etc.	required
<Month>	integer	Month in numerical form: 1, 2, 10, etc.	required
<Year>	integer	Year in four digits numerical form: 2000, 2001, 2002, etc.	required

2.3 <{SECTOR}_race>

Element	Child elements	Description	Required
<Jury>	<Number (only TD)> <Lastname> <Firstname> <Nation> <Email> <Phonenbr>	Details about the jury member	required

Attributes of <Jury> :

Element	Attribute	Attribute values
<Jury>	Function	TECHNICALDELEGATE CHIEFOFTIMING (optional)

2.3.1 <Jury>

Element	Data	Description	Required
<Number>	string	TD's ID number (only required for AL, SB, FS, MA)	required
<Lastname>	string	Last name jury member	required
<Firstname>	string	First name jury member	required
<Nation>	string	Nation (FIS abbreviation) of jury member	required
<Email>	string	Email address jury member	optional
<Phonenbr>	string	Telephone number of jury member	optional

2.4 <{SECTOR}_timingreport>

Element	Child elements	Description	Required
<Timekeeper>	<Company> <Lastname> <Firstname> <Nation> <Email> <Phonenbr>	Information about the timekeeper	required
<Devices>	<Timer> <Timer_start> <Startdevice> <Startdevice2> <Finishcells> <Photofinish> <Transponder> <Heatstartqates> <Videostart> <Videofinish> <Software>	Information about the timing and timing support devices and result software	required
<Connections>	<Mode> <Voice>	Information about the connection	required
<Timing>	<Times> <CertifyFIS>	Information about the timing	required

Attributes of <Timing> :

Element	Attribute	Attribute values
<Timing>	Runs (optional)	Number of runs used (only for XML loading purpose)

2.4.1 <Timekeeper>

Element	Data	Description	Required
<Company>	string	Name of the timing company	optional
<Lastname>	string	Last name timekeeper	required
<Firstname>	string	First name timekeeper	required
<Nation>	string	Nation (FIS abbreviation) of timekeeper	required
<Email>	string	Email address timekeeper	required
<Phonenbr>	string	Telephone number of timekeeper	required

2.4.2 <Devices>

Element	Child elements	Description	Required
<Timer>	<Brand> <Model> <Serial> <Homologation> <Notused>	Information about the timing device	required
<Timer>	<Brand> <Model> <Serial> <Homologation> <Notused>	Information about the timing device	required
<Timer_start>	<Brand> <Model> <Serial> <Homologation>	Information about the timing device at start (if used)	optional
<Startdevice Startdevice2>	<Brand> <Model> <Serial> <Homologation>	Information about the start device, CC, NK for mass start competitions not used In case of two courses are used (Startdevice = course blue, Startdevice2 = course red)	required
<Startclock>	<Brand> <Model> <Serial> <Homologation>	Information about start clock	required
<Finishcells>	<Brand> <Model> <Serial> <Homologation>	Information about the finish cells In case of two courses are used (A/B = course blue, A2/B2 = course red)	required
<Photofinish>	<Brand> <Model> <Serial> <(Homologation)>	Information about the photo finish camera	optional
<Transponder>	<Brand> <Model>	Information about transponder chip	optional
<Transponder_decoder>	<Brand> <Model>	Information about transponder decoder	optional
<Heatstartgates>	<Brand> <Model>	Information about heat start gates	optional
<Videostart Videofinish>	<Brand> <Model> <Resolution> <Frequency>	Information about video cameras used at start and/or finish	optional
<Software>	<Brand> <Version>	Information about the timing software	required

Attributes of the elements above:

Element	Attribute	Attribute values
<Timer>	System	A B
<Timer>	used	yes no
<Timer_start>	System	A B
<Startdevice Startdevice2>	Type	10 = Start gate 15 = Start door 16 = Noise detector 17 = Electronic start gun 20 = Photo cell
<Finishcells>	System	A B A2 B2
<Photofinish>	System	A B
<Transponder>	Type	100 = active 101 = passive
<Transponder_decoder>	Type	102 = active 103 = passive
<Heatstartgates>	Type	110 = with wand 111 = with photo cell

2.4.3 <Timer>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the timer	required
<Model>	string	Model of the timer	required
<Serial>	string	Serial number of the timer	required
<Homologation>	string	Homologation number of the timer	required
<Notused>	string	Reason why timing system A/B was not used	optional

2.4.4 <Startdevice>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the start device	required
<Model>	string	Model of the start device	required
<Serial>	string	Serial number of the start device	required
<Homologation>	string	Homologation number of the start device	required

2.4.5 <Startclock>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the start clock	required
<Model>	string	Model of the start clock	required
<Serial>	string	Serial number of the start clock	required
<Homologation>	string	Homologation number of the start clock	required

2.4.6 <Finishcells>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the finish cells	required
<Model>	string	Model of the finish cells	required
<Serial>	string	Serial number of the finish cells	required
<Homologation>	string	Homologation number of the finish cells	required

2.4.7 <Photofinish>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the photo finish camera	required
<Model>	string	Model of the photo finish camera	required
<Serial>	string	Serial number of the photo finish camera	required
<Homologation>	string	Homologation number of the photo finish camera	optional

2.4.8 <Transponder>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the transponder system	required
<Model>	string	Model of the transponder system	required

2.4.9 <Heatstartgates>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the heat start gates	required
<Model>	string	Model of the heat start gates	required

2.4.10 <Videostart> , <Videofinish>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the video camera	required
<Model>	string	Model of the video camera	required
<Resolution>	string	Resolution of the video camera 480p 576p 720p (HD) 1080p (Full HD) 2160p (4K) 4320p (8K)	required
<Frequency>	string	Frequency (fps) of the video camera 24 = 24fps 25 = 25fps 30 = 30fps 50 = 50fps 60 = 60fps 100 = 100fps 100+ = > 100fps	required

2.4.11 <Software>

Element	Data	Description	Required
<Brand>	string	Brand/manufacture of the software	required
<Version>	string	Version number of the software	required

2.4.12 <Connections>

Element	Data	Description	Required
<Mode>	string	Information about the connections of the used systems Cable Radio LAN WLAN Mobile USB Other	required
<Voice>	string	Information about the voice connections Cable Radio LAN WLAN Mobile USB Other	required

Attributes of <Mode> :

Element	Attribute	Attribute values
<Mode>	System	A B

2.4.13 <Timing>

Element	Data	Child elements	Description	Required
<Synchronisation>		<Sync> <Handsync> <Synccheck>	Information about the synchronisation	required
<Times>		<Bibfirst> <Biblast> <BestA> <Allresults> <Comment>	Information about the times	required
<Delayedstartdoor>	string		Information about usage of delayed start doors (only for Parallel events with delayed starts) yes no	required
<CertifyFIS>	string		Confirmation that the timing and calculations of this event adhered to the FIS rules yes no	required

Attributes of <Times> :

Element	Attribute	Attribute values
<Times>	Run	1 2 3 4 (GS Slalom only)

2.4.14 <Synchronisation>

Element	Data	Description	Required
<Sync>	time	Synchronisation time of the electronic timing system	required
<Handsync>	time	Synchronisation time of the hand timing system	required
<Synccheck>	time	Synchronisation check of the timing system AStart and BStart only if a start timer was used	required

Attributes of <Synccheck> :

Element	Attribute	Attribute values
<Synccheck>	System	A B AStart BStart

2.4.15 <Times>

Element	Data	Child elements	Description	Required
<Bibfirst>		<Start> <Finish> <Net>	Information about start and finish times of first Bib	required
<Biblast>		<Start> <Finish> <Net>	Information about start and finish times of last Bib	required
<BestA>	time, speed for Speed Skiing	<Bib>	Information about the best net time	required
<Allresults>		<MissedA>	Information if all results measured with system A	required
<Comment>	string		Comment to times	optional

Attributes of the elements above:

Element	Attribute	Attribute values
<Bibfirst>	no	Bib number
<Biblast>	no	Bib number
<Allresults>	System	yes no

2.4.16 <Bibfirst>

Element	Data	Description	Required
<Start>	time	Start time as Time of the day of the first competitor of system A, B, Hand	required
<Finish>	time	Finish time as Time of the day of the first competitor of system A, B, Hand	required
<Net>	time, speed for Speed Skiing	Net time or speed (Speed Skiing) of the first competitor (if applicable)	required

Attributes of the elements above:

Element	Attribute	Attribute values
<Start>	System	A, B, Hand
<Finish>	System	A, B, Hand

2.4.17 <Biblast>

Element	Data	Description	Required
<Start>	time	Start time as Time of the day of the last competitor of system A, B, Hand	required
<Finish>	time	Finish time as Time of the day of the last competitor of system A, B, Hand	required
<Net>	time, speed for Speed Skiing	Net time or speed (Speed Skiing) of the last competitor (if applicable)	required

Attributes of the elements above:

Element	Attribute	Attribute values
<Start>	System	A, B, Hand
<Finish>	System	A, B, Hand

2.4.18 <BestA>

Element	Data	Description	Required
<Bib>	string	Bib of the best competitor in system A	required
<Time>	time, speed for Speed Skiing	Net time or speed (Speed Skiing) of the best competitor in system A (if applicable)	required

2.4.19 <Allresults>

Element	Data	Child elements	Description	Required
<MissedA>	string	<Bib> <Reason> <Timefrom>	Information about the reasons of missed times of competitors in system A	required

2.4.20 <MissedA>

Element	Data	Description	Required
<Bib>	string	Bib of the competitor	required
<Reason>	string	Reason for failure and missed times	required
<Timefrom>	string	From which backup system came the time	required

3. Example of timing report XML

```
<?xml version="1.0" encoding="UTF-8"?>
<Fisresults>
  <OSversion>Windows-11</OSversion>
  <XMLversion>1.17</XMLversion>
  <Raceheader Sector="{SECTOR}" Gender="W">
    <Season>2027</Season>
    <Codex>0000</Codex>
    <NAT_code>USA12</NAT_code>
    <Discipline>DH</Discipline>
    <Category>WC</Category>
    <Type>TR</Type>
    <Racedate>
      <Day>19</Day>
      <Month>1</Month>
      <Year>2012</Year>
    </Racedate>
    <Eventname>Testevent</Eventname>
    <Place>Oberhofen</Place>
    <Nation>SUI</Nation>
  </Raceheader>
  <{SECTOR}_race>
    <Jury Function="TECHNICALDELEGATE">
      <Number>TD123</Number>
      <Lastname>Ferrari</Lastname>
      <Firstname>Salvatore</Firstname>
      <Nation>ITA</Nation>
      <Email>ferrari@td.com</Email>
      <Phonenbr>+391122334455</Phonenbr>
    </Jury>
    <Jury Function="CHIEFOFTIMING">
      <Lastname>Mueller</Lastname>
      <Firstname>Hans</Firstname>
      <Nation>GER</Nation>
      <Email>mueller@gmx.de</Email>
      <Phonenbr>+4912374567455</Phonenbr>
    </Jury>
  </{SECTOR}_race>
  <{SECTOR}_timingreport>
    <Timekeeper>
      <Company>FIS Timing</Company>
      <Lastname>Tim</Lastname>
      <Firstname>Keeper</Firstname>
      <Nation>SUI</Nation>
      <Email>tim@keeper.com</Email>
      <Phonenbr>+411234567890</Phonenbr>
    </Timekeeper>
  </{SECTOR}_timingreport>
</Fisresults>
```

```

<Devices>
  <Timer System="A" used="no">
    <Brand>ALGE</Brand>
    <Model>S4</Model>
    <Serial>AL12345678</Serial>
    <Homologation>ALG.005T.10</Homologation>
    <Notused>Timer A out of order</Notused>
  </Timer>
  <Timer System="B" used="yes">
    <Brand>MICROGATE</Brand>
    <Model>RACETIME2</Model>
    <Serial>12345678</Serial>
    <Homologation>MGA.002T.11</Homologation>
  </Timer>
  <Startdevice Type="10">
    <Brand>Longines</Brand>
    <Model>B65</Model>
    <Serial>L01234567</Serial>
    <Homologation>LON.S57.03</Homologation>
  </Startdevice>
  <Startclock>
    <Brand>ALGE</Brand>
    <Model>SC15</Model>
    <Serial>AL3422</Serial>
    <Homologation>ALG.SC15.01</Homologation>
  </Startclock>
  <Finishcells System="A">
    <Brand>OMEGA</Brand>
    <Model>Transtime</Model>
    <Serial>987654</Serial>
    <Homologation>OME.L67.03</Homologation>
  </Finishcells>
  <Finishcells System="B">
    <Brand>OMEGA</Brand>
    <Model>Transtime</Model>
    <Serial>987655</Serial>
    <Homologation>OME.L67.03</Homologation>
  </Finishcells>
  <Photofinish System="A">
    <Brand>LYNX</Brand>
    <Model>EtherLynx Vision (5L500)</Model>
    <Serial>987656</Serial>
    <Homologation>LYN.P268.24</Homologation>
  </Photofinish>
  <Photofinish System="B">
    <Brand>LYNX</Brand>
    <Model>EtherLynx Vision (5L500)</Model>
    <Serial>987657</Serial>
    <Homologation>LYN.P268.24</Homologation>
  </Photofinish>

```

```

<Transponder Type="100">
  <Brand>AMD</Brand>
  <Model>TransPRO</Model>
</Transponder>
<Videofinish>
  <Brand>Sony</Brand>
  <Model>SX200</Model>
  <Resolution>1080p</Resolution>
  <Frequency>100</Frequency>
</Videofinish>
<Software>
  <Brand>ST_Alpine</Brand>
  <Version>2.1.12</Version>
</Software>
</Devices>
<Connections>
  <Mode System="A">Cable</Mode>
  <Mode System="B">Cable</Mode>
  <Voice>Cable</Voice>
</Connections>
<Timing Runs="2">
  <Synchronisation>
    <Sync>10:10:34</Sync>
    <Handsync>10:10:23</Handsync>
    <Synccheck System="A">10:11:34.9874</Synccheck>
    <Synccheck System="B">10:11:34.9875</Synccheck>
    <Synccheck System="AStart">10:11:34.9876</Synccheck>
    <Synccheck System="BStart">10:11:34.9875</Synccheck>
  </Synchronisation>
  <Times Run="1">
    <Bibfirst no="1">
      <Start System="A">11:00:00.0023</Start>
      <Start System="B">11:00:00.4323</Start>
      <Start System="Hand">11:00:00.432</Start>
      <Finish System="A">11:01:00.0023</Finish>
      <Finish System="B">11:01:00.8767</Finish>
      <Finish System="Hand">11:01:00.876</Finish>
      <Net>1:00.00</Net>
    </Bibfirst>
    <Biblast no="112">
      <Start System="A">11:30:00.0022</Start>
      <Start System="B">11:30:00.0025</Start>
      <Start System="Hand">11:30:00.002</Start>
      <Finish System="A">11:32:00.4324</Finish>
      <Finish System="B">11:32:00.1232</Finish>
      <Finish System="Hand">11:32:00.123</Finish>
      <Net>2:00.00</Net>
    </Biblast>
  </Times Run="1">
  <BestA>
    <Bib>45</Bib>
  </BestA>
</Timing Runs="2">

```

```

    <Time>2:01.89</Time>
  </BestA>
  <Allresults SystemA="no">
    <MissedA>
      <Bib>10</Bib>
      <Reason>Batteries</Reason>
      <Timefrom>System B</Timefrom>
    </MissedA>
    <MissedA>
      <Bib>12</Bib>
      <Reason>Batteries</Reason>
      <Timefrom>System B</Timefrom>
    </MissedA>
    <MissedA>
      <Bib>13</Bib>
      <Reason>Batteries</Reason>
      <Timefrom>System B</Timefrom>
    </MissedA>
    <MissedA>
      <Bib>14</Bib>
      <Reason>Batteries</Reason>
      <Timefrom>System B</Timefrom>
    </MissedA>
  </Allresults>
  <Comment>low batteries in photo cell A</Comment>
</Times>
<Times Run="2">
  <Bibfirst no="20">
    <Start System="A">12:13:00.2344</Start>
    <Start System="B">12:13:00.2345</Start>
    <Start System="Hand">12:13:00.23</Start>
    <Finish System="A">12:14:00.4567</Finish>
    <Finish System="B">12:14:00.4566</Finish>
    <Finish System="Hand">12:14:00.45</Finish>
    <Net>1:00.01</Net>
  </Bibfirst>
  <Biblast no="83">
    <Start System="A">12:30:00.7890</Start>
    <Start System="B">12:30:00.6789</Start>
    <Start System="Hand">12:30:00.66</Start>
    <Finish System="A">12:32:00.5678</Finish>
    <Finish System="B">12:32:00.7654</Finish>
    <Finish System="Hand">12:32:00.75</Finish>
    <Net>2:00.01</Net>
  </Biblast>
  <BestA>
    <Bib>87</Bib>
    <Time>2:00.32</Time>
  </BestA>
  <Allresults SystemA="no">

```

```
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  <Bib>11</Bib>
  <Reason>Operator</Reason>
  <Timefrom>System B</Timefrom>
</MissedA>
</Allresults>
  <Comment>Operator missed to arm system A</Comment>
</Times>
  <Delayedstartdoor>no</Delayedstartdoor>
  <CertifyFIS>yes</CertifyFIS>
</Timing>
</{SECTOR}_timingreport>
</Fisresults>
```

4. Rules for expected data

The following tables show which data are expected or needed by discipline to pass the validation of the data.

4.1 Alpine

Data for	DH/GS/SG/AC	SL	KOS/KOG/CAR/K/IND	CE	TP/PAR/PGS	PARQ	PGSQ/PSLQ	PSL
with start device	X	X	X	X	X	X	X	X
with start device B				X	X	X	X	X
with start clock	X			X				
with delayed start door				X	X	X	X	X
with finish cells	X	X	X	X	X	X	X	X
with finish cell course B				X	X	X	X	X
with photo finish				X	X			X
with hand timing	X	X	X	X	X	X	X	X
with transponders				X	X			X
net times optional				X	X	X	X	X
best time optional				X	X	X	X	X
with 1 qualification run							X	
with 2 qualification run						X	X	
with finals				X	X			X
with 2 courses				X	X	X	X	X
run 3 possible		X						
	for Level	for Level	for Level	for Level	for Level	for Level	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Timer B optional				2,3,4	2,3,4	2,3,4	2,3,4	2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1	0,1	0,1	0,1	0,1
Need start clock	0,1,2			0,1,2				
Need start device	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4

Data for	DH/GS/SG/AC	SL	KOS/KOG/CAR/K/IND	CE	TP/PAR/PGS	PARQ	PGSQ/PSLQ	PSL
Need start device B				0,1	0,1			0,1
Need finish cells	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need finish cells B	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1	0,1	0,1	0,1	0,1
Need finish cells course B				0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need photo finish				0	0			0,1

4.2 Cross-Country

Data for	INT	MAS/SKT/TE/ML/MAR/OT	SPQ	SPF	PUR	TSP
With start device	X		X			
With start signal system		X		X		X
With heat start gate				X		
With start clock	X		X			
With finish cells	X	X	X	X	X	X
With photo finish	(X)	X	(X)	X	X	X
With hand timing	X	X	X	X	X	X
With transponders	X	X	X	X	X	X
With video start control					X	
Net times optional				X		X
Best times optional				X		X
with 1 qualification			X			
Only run 1	X	X	X	X	X	X
With finals				X		X
Results with 1/10th seconds	X	X			X	
	for Level	for Level	for Level	for Level	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need start clock	0,1		0,1			
Need start device/signal	0,1	0	0,1	0		0
Need heat start gate				0		
Need finish cells	0,1,2,3,4	0	0,1,2,3,4	0	0	0
Need finish cells B	0,1,2,3,4	0	0,1,2,3,4	0	0	0
Need photo finish	0	0	0	0	0	0
Need 2 photo finish		0		0	0	0
Need photo finish or video finish		1,2,3,4		1,2,3,4	1,2,3,4	1,2,3,4

4.3 Nordic Combined

Data for	GU/TE/TS/SP	MS
With start signal system		X
With finish cells	X	X
With photo finish	X	X
With hand timing	X	X
With transponders	X	X
With video start control	X	
Only run 1	X	X
Results with 1/10th seconds	X	X
	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4
Need video start control	0,1,2,3,4	0,1,2,3,4
Need finish cells	0	0
Need finish cells B	0	0
Need photo finish	0	0
Need photo or video finish	1,2,3,4	1,2,3,4
Need 2 photo finish	0	0

4.4 Freestyle Skiing

Data for	SXQF	SXF	MO	DM	SXT/XT
With start device	X	X	X	X	X
With start device B	X			X	
With delayed start door					X
With start clock	X				
With finish cells	X		X	X	
With finish cell course B				X	
With photo finish	X	X			X
With hand timing	X		X	X	
No hand timing		X			X
No hand timing run 2	X				
With transponders	X	X		X	X
Net times optional		X			X
Net times optional run 2	X				
Net times optional run 3			X		
Best times optional run 3			X		
No best times		X			X
No best times run 2	X				
With finals		X			X
With optional finals	X	X			X
With 1 final		X			X
With 1 qualification 1 final	X				
With 2 qualification 1 final			X		
With 2 courses				X	
No page 4 (timing part 1)				X	
	for Level	for Level	for Level	for Level	for Level
Need timing	1,2,3,4		1,2,3,4	1,2,3,4	
Timer B optional	3,4 (Q)			2,3,4	
Need hand timing	1,2,3,4		1,2,3,4	1,2,3,4	
Need start clock	1 (Q)				
Need start device	1,2	1,2	1,2	1,2,3,4	1
Need start device B	1,2		1,2	1,2,3,4	
Need finish cells	1,2,3,4		1,2,3,4	1,2,3,4	
Need finish cells B	1,2,3,4		1,2,3,4	1	
Need finish cells course B				1,2,3,4	
Need photo finish	1,2	1,2			1,2
Need photo finish or video finish	3,4	3,4			3,4
Need 2 photo finish or video finish	1,2	1,2			1,2

4.5 Snowboard

Data for	PGS	PGSQ/PSLQ	PSL	PRT	SBXQF	SBXF	BXT/XT	SL/GS
With start device	X	X	X	X	X	X	X	X
With start device B	X	X	X	X	X	X		
With start clock					X			X
With delayed start door	X		X	X			X	
With finish cells	X	X	X	X	X			X
With finish cell course B	X	X	X	X				
With photo finish	X		X	X	X	X	X	
With hand timing	X	X	X		X			X
No hand timing						X	X	
No hand timing run 3 (Final)					X			
With transponders	X		X	X	X	X	X	
Net times optional	X		X	X		X	X	
Net times optional run 3 (Final)					X			
Best times optional	X		X	X				
No best times						X	X	
No best times run 3 (Final)					X			
With 2 qualification		X						
With finals	X			X		X	X	
With optional finals					X	X	X	
With 2 qualification 1 final	X		X		X			
With 2 courses	X	X	X	X				
	for Level	for Level	for Level	for Level	for Level	for Level	for Level	for Level
Need timing	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4			1,2,3,4
Timer B optional	3,4	3,4	3,4	3,4	3,4 (Q)			3,4
Need hand timing	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4			1,2,3,4
Need start clock					1 (Q)			
Need start device	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2	1,2	1	1,2,3,4
Need start device B	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2			
Need finish cells	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4			1,2,3,4
Need finish cells B	1,2	1,2	1,2	1,2	1,2			1,2
Need finish cells course B	1,2,3,4		1,2,3,4	1,2,3,4				
Need photo finish	1		1	1	1,2	1,2	1,2	
Need photo finish or video finish					3,4	3,4	3,4	
Need 2 photo finish or video finish					1,2	1,2	1,2	

4.6 Grass Skiing

Data for	GS/SG/SC/K	SL	TE/PGS/PSL
With start device	X	X	X
With start device B			X
With start clock	X		
With finish cells	X	X	X
With finish cells course B			X
With photo finish			X
With hand timing	X	X	X
With transponders			X
Net times optional			X
No Best times			X
With 2 courses			X
Run 3 possible		X	
Run 4 possible		X	
	for Level	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Timer B optional	2,3,4	2,3,4	2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need start clock	0,1,2		
Need start device	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need start device B			0,1
Need finish cells	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need finish cells B	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need finish cells course B			0,1,2,3,4

4.7 Telemark

Data for	CL	GS/SP	PS/TSP
With start device	X	X	X
With start device course B			X
With start clock	X	X	
With finish cells	X	X	X
With finish cells course B			X
Only run 1	X		
Net times optional			X
No Best times			X
With finals			X
With optional finals			X
With 1 qualification 1 final			X
With 2 courses			X
	for Level	for Level	for Level
Need timing	0,1,2,3	0,1,2,3	0,1,2,3
Need start clock	0	0	
Need start device	0,1,2,3	0,1,2,3	0,1,2,3
Need finish cells	0,1,2,3	0,1,2,3	0,1,2,3
Need finish cells B	0,1,2,3	0,1,2,3	0,1

4.8 Speed Skiing

Data for	A
With start device	X
With start device B	X
With finish cells	X
With speed	X
With 1 qualification 2 finals	X
	for Level
Need timing	0
Need start device	0
Need start device B	0
Need finish cells	0
Need finish cells B	0

4.9 Masters

Data for	DH/SG	GS	SL	AC
With start device	X	X	X	X
With start clock	X	X		X
With finish cells	X	X	X	X
With hand timing	X	X	X	X
Run 1	X			
Run 2 optional	X	X		
	for Level	for Level	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need start clock	0,1,2	0,1,2		
Need start device	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need finish cells	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need finish cells B	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4

4.10 Para Alpine

Data for	DH/GS/SG/AC	SL	TP/PAR	PARQ
with start device	X	X	X	X
with start device B			X	X
with start clock	X			
with delayed start door			X	X
with finish cells	X	X	X	X
with finish cell course B			X	X
with photo finish			X	
with hand timing	X	X	X	X
with transponders			X	
net times optional			X	X
best time optional			X	X
with 1 qualification run				
with 2 qualification run				X
with finals			X	
with 2 courses			X	X
run 3 possible		X		
	for Level	for Level	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Timer B optional			2,3,4	2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4	0,1	0,1
Need start clock	0,1,2			
Need start device	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need start device B			0,1	
Need finish cells	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need finish cells B	0,1,2,3,4	0,1,2,3,4	0,1	0,1
Need finish cells course B			0,1,2,3,4	0,1,2,3,4
Need photo finish			0	

4.11 Para Snowboard

Data for	PSL	PSLQ	SBXQF	SBXF	BXT	GS
With start device	X	X	X	X	X	X
With start device B	X	X	X	X		
With start clock			X			X
With delayed start door	X				X	
With finish cells	X	X	X			X
With finish cell course B	X	X				
With photo finish	X		X	X	X	
With hand timing	X	X	X			X
No hand timing				X	X	
No hand timing run 3 (Final)			X			
With transponders	X		X	X	X	
Net times optional	X			X	X	
Net times optional run 3 (Final)			X			
Best times optional	X					
No best times				X	X	
No best times run 3 (Final)			X			
With 2 qualification		X				
With finals				X	X	
With optional finals			X	X	X	
With 2 qualification 1 final	X		X			
With 2 courses	X	X				
	for Level	for Level	for Level	for Level	for Level	for Level
Need timing	1,2,3,4	1,2,3,4	1,2,3,4			1,2,3,4
Timer B optional	3,4	3,4	3,4 (Q)			3,4
Need hand timing	1,2,3,4	1,2,3,4	1,2,3,4			1,2,3,4
Need start clock			1 (Q)			
Need start device	1,2,3,4	1,2,3,4	1,2	1,2	1	1,2,3,4
Need start device B	1,2,3,4	1,2,3,4	1,2			
Need finish cells	1,2,3,4	1,2,3,4	1,2,3,4			1,2,3,4
Need finish cells B	1,2	1,2	1,2			1,2
Need finish cells course B	1,2,3,4					
Need photo finish	1		1,2	1,2	1,2	
Need photo finish or video finish			3,4	3,4	3,4	
Need 2 photo finish or video finish			1,2	1,2	1,2	

4.12 Para Cross-Country

Data for	INT	MAS/TEO/TEM	SPQ	SPF	PUR
With start device	X		X		
With start signal system		X		X	
With heat start gate				X	
With start clock	X		X		
With finish cells	X	X	X	X	X
With photo finish	(X)	X	(X)	X	X
With hand timing	X	X	X	X	X
With transponders	X	X	X	X	X
With video start control					X
Net times optional				X	
Best times optional				X	
with 1 qualification			X		
Only run 1	X	X	X	X	X
With finals				X	
Results with 1/10th seconds	X	X			X
	for Level	for Level	for Level	for Level	for Level
Need timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need hand timing	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4	0,1,2,3,4
Need start clock	0,1		0,1		
Need start device/signal	0,1	0	0,1	0	
Need heat start gate				0	
Need finish cells	0,1,2,3,4	0	0,1,2,3,4	0	0
Need finish cells B	0,1,2,3,4	0	0,1,2,3,4	0	0
Need photo finish	0	0	0	0	0
Need 2 photo finish		0		0	0
Need photo finish or video finish		1,2,3,4		1,2,3,4	1,2,3,4

5. Document Control

Version 1.0, 18.10.2012

Section	Description
General	Initial version

Version 1.1, 19.03.2013

Section	Description
General	Added attribute 'used' and element 'Notused' for <Timer>

Version 1.2, 24.07.2014

Section	Description
General	Add new element <NAT_code>

Version 1.3, 07.10.2015

Section	Description
General	Update description text
	Timing Report now for Alpine, Freestyle, Snowboard, Telemark and Masters; update accordingly using {SECTOR} as placeholder for sector code of the sport

Version 1.4, 05.11.2015

Section	Description
General	Updated <Juryemail>, <Juryphonenbr>, <Email>, <Phonenbr> (page 7)
	<CertifyFIS>
	<Timer_start>, <Software>
	Jury (Chief of competition) only optional
	run 3 for Alpine Slalom

Version 1.5, 21.12.2015

Section	Description
General	AL CE now needs a timing report too

Version 1.6, 30.03.2016

Section	Description
General	Added Grass Skiing incl. run 4 for Slalom

Version 1.7, 16.06.2016

Section	Description
General	Update text XML file, added not supported sports Cross-Country, Nordic Combined, Speed Skiing (page 4)
	update text Software, add Support contact information (page 5)

Version 1.8, 29.09.2016

Section	Description
General	Add description of default timing report XML file for data transfer

Version 1.9, 03.11.2017

Section	Description
General	Add Cross-Country, Nordic Combined (CC) as supported FIS disciplines
	Add photo finish cameras
	removed Windows XP as supported OS
	updated email address for sending TR XML
	Change of child element names for TD and Jury
	Change Startgate to Startdevice, add attribute Type
	update email address for sending the XML files
	TD moved from Raceheader to Jury
	Jury child elements now Lastname, Firstname, Nation, Number
	Raceheader attribute Sex now Gender

Version 1.10, 08.01.2018

Section	Description
General	Add information about firewall settings for ports used with the application

Version 1.11, 20.11.2018

Section	Description
General	Discontinue support Timing Report Software for Linux, Mac OS 10.9 and earlier
	add Finishcells and Startdevice for two courses
	removed Powerontime
	add new section Synchronisation and removed Synchronisation from each run
	update General section
	Event name optional
	add special cases for discipline codes
	add Timing Report XML description version which the software supports
	add operating system version
	add Noise Detector and Electronic Start gun as start device
	Update rules for expected data

Version 1.12, 24.10.2019

Section	Description
General	Update section General, add XMLfile transmission
	removed Hand Net time
	add TOD hand time in all runs for start first, finish first, start last, finish last
	add device Start clock
	change Ladies to Women
	add Delayedstartdoor, Transponder, Heatstartgates, Videostart, Videofinish elements
	update values for Discipline
	add synchronisation confirmation for Timer A + B at start (if used)
	add Speed Skiing (SS)

Version 1.13, 01.10.2020

Section	Description
General	Add section Rules for expected data

Version 1.14, 04.11.2020

Section	Description
General	Add Transponder_decoder element
	update Discipline special cases

Version 1.15, 31.03.2021

Section	Description
General	update example jury
	update rules for expected data
	add attribute Runs in Timing

Version 1.16, 18.12.2024

Section	Description
General	update Rules for expected data for Telemark
	update devices photo finish homologation
	update timing report XML example

Version 1.17, 06.06.2026

Section	Description
General	Converted the manual to Markdown as the document base Corrected typos and quirks move Document Control section to end of document update supported operating systems to Windows 10, 11; remove FTP download link added Para disciplines updated support of Qualification and Finals
<Raceheader>	update codes for <Discipline> for Para discipline removed old codes for Cross-Country, Nordic Combined
Rules for expected data	add definitions for PAL, PSB, PCC compacted definition tables
Software	minimum version macOS 11+

10.09.2026

Section	Description
General	element reference tables regrouped into a child elements table and a separate attributes table value lists written at the end of the description a line above each attributes table naming what it belongs to