

USEBIO Specification Version 1.1

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1. Introduction

USEBIO XML is an acronym representing the ***Universal Standard for Exchange of Bridge Data Over XML***. It describes a data format which is used for the recording of results of bridge events by a scoring system. This can then be transmitted to other systems for the display of results and other purposes.

USEBIO Version 1.0 has been in use by the EBU and participating clubs since April 2010, for “Pay to Play” (P2P) and National Grading System (NGS) purposes. It has also been used in other countries.

USEBIO 1.1 adds some additional features and clarifies ambiguities in the earlier version. The document is a complete specification of USEBIO 1.1 and is designed to be understandable by someone unfamiliar with the USEBIO 1.0 standard. The document replaces an earlier version (December 2012). This is simply because the earlier version only described changes between the two versions and was not self-standing.

USEBIO 1.0 also specified XML formats for other potential bridge uses. These were: bridge club membership data, hand records, ladder events and knock out events, movements, auctions and play of hands. Although the recording of hand records in USEBIO has been used by some systems, these formats have not caught on, possibly because of the existence of more widely used existing formats. The USEBIO 1.1 specification is not concerned with these uses, but has not removed them from the formal USEBIO specification. Anyone wishing to use USEBIO for these purposes should refer to the version 1.0 specification.

Readers who wish to know how to upgrade a system that produces USEBIO 1.0 files should read section 5.

2. Overall structure of a USEBIO file

An XML file consists of a series of elements, which may be nested inside one another, each element being bounded by an opening and closing tag. Note that the USEBIO convention is that all element tag names are in capitals. The outermost element of a USEBIO file is the USEBIO tag.

This tag has an attribute, Version as shown below.

The usual structure of a USEBIO file is:

```
<USEBIO Version="1.1">
  <CLUB>
    club elements
  </CLUB>
  <EVENT EVENT_TYPE="aaaaaa">
    event simple elements
    <PARTICIPANTS>
      participant elements
    </PARTICIPANTS>
    board and match elements
  </EVENT>
</USEBIO>
```

Events with multiple sections and/or sessions may have a more complex structure. This is described in section 4.

2.1 CLUB element

This provides details of the club that organised this event.

The following child elements are defined within the CLUB element:

Element name	Element description	Required?	Allowed values
CLUB_NAME	The name of the club	Yes	Text
CLUB_ID_NUMBER	The ID number for the club	Yes	Text or number

2.2 EVENT element

The event element is the main element in a USEBIO file. It contains all the result information for this event. It normally consists of various elements describing the event as a whole, a PARTICIPANTS element, followed by BOARD and possibly MATCH elements.

2.2.1 EVENT attributes

Event attributes are written within the opening EVENT tag. For example:

```
<EVENT EVENT_TYPE="SWISS_TEAMS">
```

They are defined in the table below.

Attribute name	Attribute description	Required?	Allowed values
EVENT_TYPE	The type of event, and for pairs events the type of scoring.	Yes	MP_PAIRS BUTLER_PAIRS CROSS_IMP AGGREGATE SWISS_PAIRS SWISS_PAIRS_CROSS_IMPS SWISS_PAIRS_BUTLER_IMPS SWISS_TEAMS TEAMS_OF_FOUR INDIVIDUAL (Note: USEBIO 1.0 defined also KO and LADDER)
RATEABLE	Whether this event should be used for rating/grading.	Deprecated	The decision on which events are to be graded is not a responsibility of the scoring system, nor of an event organiser. <i>(This field is currently ignored by the EBU's NGS.)</i>

Note1:

The values SWISS_PAIRS_CROSS_IMPS and SWISS_PAIRS_BUTLER_IMPS are new to USEBIO 1.1. The event type SWISS_PAIRS remains and implies that match-points were used to score each board and converted to Victory Points for each match.

Note 2:

Although the RATEABLE attribute is deprecated at the event level, the PLAYER attribute of RATEABLE is still available, to allow a player to declare his/her wish to be excluded from grading for this event. (The rules for when this is acceptable are outside the scope of this specification.)

2.2.2 EVENT simple child elements

Element name	Element description	Required?	Allowed values, comments
PROGRAM_NAME	The name of the software program that produced this XML file	Yes	Text
PROGRAM_VERSION	The version of the software program that produced this XML file	Yes	Text or number
EVENT_IDENTIFIER	A numeric identifier for the session. For example this which might be used for a session when it is supplied as part of a Simultaneous Pairs event.	No	Text
EVENT_DESCRIPTION	Text describing the event	No, but preferred	Text

DATE	The event date	Yes	usually in DD/MM/YYYY format, but may be given by specifying DATE_DAY, DATE_MONTH, DATE_YEAR sub elements.
WINNER_TYPE	Single or dual-winner	No	1 or 2 , assumed 1 if omitted
BOARDS_PLAYED	The number of boards played by each pair, or the maximum number of boards played by a pair if this varies between pairs.	Yes	Number New in USEBIO 1.1
SCORING_METHOD	Whether the results of teams matches are victory points or IMPS	Yes, for Team events	VPS or IMPS
TEAM_PAIRING_AVAILABLE	To say that the pairs making up a team are identified, and that pair-wise IMPS have been calculated. See note1 below this table	Yes, for Team events	Y or N, assumed N if omitted. New in USEBIO 1.1
PAIRWISE_SCORING_METHOD	The method used for a Teams event which includes pair-wise scoring	No	CROSS_IMPS or BUTLER_IMPS CROSS_IMPS is preferred and will be assumed if this is omitted. New in USEBIO 1.1
PAIRS	The total number of pairs	No	This can be derived from the count of participants.
EW_PAIRS	The number of EW pairs	No, but helpful if provided.	When a session has dual winners, some pairs will have played NS only and some EW. This can be derived from the <DIRECTION> tag for each pair.
NS_PAIRS	The number of NS pairs	No	
SESSION_COUNT	The number of sessions played in this event.	No	Usually omitted if only one session. This element is optional even if the multi-session format described in section 4.2 is used.
SECTION_COUNT	The number of sections playing in this event	No	Usually omitted if only one section. This element is optional even if the multi-section format described in section 4.1 is used.
MPS_AWARDED_FLAG	Whether Master Points were awarded for this event.	No	Y or N, assumed to be N if omitted Applicable to EBU affiliated events, and other organisations with similar schemes.
MASTER_POINT_SCALE	The scale used to compute Master Points	Yes, if awarded	“Club” or other values defined by the awarding organisation. (Club scale will be assumed if this is omitted.)

MASTER_POINT_TYPE	The colour of master points awarded	Yes, if the colour is not specified for each pair/team in the Participants element	BLACK GREEN RED BLUE SILVER GOLD PLATINUM COLORLESS
P2P_CHARGE_RATE	How this event file should be treated by EBU Pay to Play	Yes, for files submitted to EBU.	Number, between 0 and 99. This is a field specific to EBU and could be generalised in a future version of USEBIO.
CONTACT	Details of a contact person for queries about the scoring. (Note that this is an element with sub elements.)	No	Textual sub elements are: FULL_NAME (required) TELEPHONE (optional) FAX (optional) EMAIL (optional)
Other tags	These are permitted but are not frequently used.	No	Possible elements include: PLAYERS (the number of) VENUE TOWN COUNTRY COUNTRY BOARDS_PER_ROUND

Note 1:

TEAM_PAIRING_AVAILABLE. This should be set to Y only if the line-up (which pairs sat where) has been confirmed as accurate for the event. This may be because:

- a) the line-up for each round is based on the round by round input from BridgeMates or a similar electronic device at each table, or
- b) the line-up correctly assumes that the first named pair of each team sat NS throughout (and the second pair EW), or
- c) the line-up has been entered/confirmed by the TD for each round.

A scoring system may only support some of these options.

If none of these is the case then TEAM_PAIRING_AVAILABLE should be set to N. In this case it is not necessary to identify pairs within the TEAM element as described in section 2.4.2.

2.3 PARTICIPANTS element

The PARTICIPANTS element contains details about players who took part in the event.

2.3.1 PARTICIPANTS attribute

It can have a single attribute named EVENT_TYPE. This is an optional attribute and if included it must have the same value as the corresponding attribute of the EVENT element.

2.3.2 PARTICIPANTS child elements

This depends on the type of event. For Pairs events, the PARTICIPANTS element will simply contain a list of PAIR elements, for teams events it will simply contain a list of TEAM elements and for individual events it will simply contain a list of PLAYER elements. The contents of the elements TEAM, PAIR and PLAYER will also depend on the event type.

2.4 TEAM element

2.4.1 TEAM attributes

Attribute name	Attribute description	Required?	Allowed values
EVENT_TYPE	As in the EVENT element	No	If included its value must be the same as in the EVENT element.
TEAM_ID	The unique identifier for the team, used to reference the team in the rest of the file.	Yes	Text or number

2.4.2 TEAM child elements

The child elements of TEAM are of two kinds. The first kind of child elements are the overall score and results for that team; these are described in section 2.7 below. The second kind of child elements of a team are either a list of PLAYER elements, one for each player in the team or a list of PAIR elements, one for each pair that played together as part of the team. This depends on whether Team pairing is available.

If the scoring system has been told, or can deduce which pairs of players were sitting which way on each of the boards in the event, in other words if the line-up is known for every round, it can output information relating to each pair. In this case the TEAM_PAIRING_AVAILABLE child element of the EVENT element should be set to Y and each team's element should consist of the pairs in that team.

Each pair shall be identified with a unique pair-id and the two players in the pair will be described within that pair element. For multiple Teams of Four and Swiss Teams, there will normally be two pairs in a team, but occasionally teams consist of five players, and one or more of the team play with different partners in different rounds. Even if there are only four player they may switch partners for some rounds. To allow for this, any number of pairs may be identified within a team provided that each pair has a unique id. This will also allow further types of Teams events with known line-ups to be reported without changing this part of USEBIO.

Of course circumstances with pairs changing within a team may not be able to be reported to the scoring system in which case TEAM_PAIRING_AVAILABLE will have be set to N, and the TEAM element will contain a list of PLAYER elements with no PAIR elements.

An example of a complete team element when team pairing is available is given below. The team had five players, one of whom only played 8 boards.

```
<TEAM TEAM_ID="1" EVENT_TYPE="TEAMS OF FOUR">
```

```

<ADJUSTMENT>0</ADJUSTMENT>
<HANDICAP>0</HANDICAP>
<CARRY_FORWARD>0</CARRY_FORWARD>
<TOTAL_SCORE>87</TOTAL_SCORE>
<PLACE>4=</PLACE>
<WINS_OR_DRAWS>4</WINS_OR_DRAWS>
<MASTER_POINTS_AWARDED>12</MASTER_POINTS_AWARDED>
<PAIR>
  <PAIR_NUMBER>1A</PAIR_NUMBER>
  <DIRECTION>NS</DIRECTION>
  <BOARDS_PLAYED>32</BOARDS_PLAYED>
  <PAIR_IMPS>28.5</PAIR_IMPS>
  <PLAYER_RATEABLE="N">
    <PLAYER_NAME>John Doe</PLAYER_NAME>
    <NATIONAL_ID_NUMBER>107975</NATIONAL_ID_NUMBER>
  </PLAYER>
  <PLAYER>
    <PLAYER_NAME>Bill Smith</PLAYER_NAME>
    <NATIONAL_ID_NUMBER></NATIONAL_ID_NUMBER>
  </PLAYER>
</PAIR>
<PAIR>
  <PAIR_NUMBER>1B</PAIR_NUMBER>
  <DIRECTION>EW</DIRECTION>
  <BOARDS_PLAYED>24</BOARDS_PLAYED>
  <PAIR_IMPS>8.5</PAIR_IMPS>
  <PLAYER>
    <PLAYER_NAME>Peter Piper</PLAYER_NAME>
    <NATIONAL_ID_NUMBER>654321</NATIONAL_ID_NUMBER>
  </PLAYER>
  <PLAYER>
    <PLAYER_NAME>Bobby Fisher</PLAYER_NAME>
    <NATIONAL_ID_NUMBER>607975</NATIONAL_ID_NUMBER>
  </PLAYER>
</PAIR>
<PAIR>
  <PAIR_NUMBER>1C</PAIR_NUMBER>
  <DIRECTION>EW</DIRECTION>
  <BOARDS_PLAYED>8</BOARDS_PLAYED>
  <PAIR_IMPS>8.5</PAIR_IMPS>
  <PLAYER>
    <PLAYER_NAME>Peter Piper</PLAYER_NAME>
    <NATIONAL_ID_NUMBER>654321</NATIONAL_ID_NUMBER>
  </PLAYER>
  <PLAYER>
    <PLAYER_NAME>Mary Smith</PLAYER_NAME>
    <NATIONAL_ID_NUMBER>607988</NATIONAL_ID_NUMBER>
  </PLAYER>
</PAIR>
</TEAM>

```

In this example the pair ids are the team id plus a unique suffix. This is for illustration only. Any system for assign pair ids is acceptable provided that the id is unique across the whole event and that the same pair keeps the same id in all parts of a single USEBIO file.

Note also that any player who plays in more than one pair within the team will have their information replicated in the file.

Although this specification describes how to document the exact pairings when teams either have more than four players or when players swap

partners, it is not expected that all scoring systems will be able to do this, and may always assume that there were four players in a team and that they sat in the same orientation throughout a session. However, note 1 of section 2.2.2 still applies to the TEAM_PAIRING_AVAILABLE element.

2.5 PAIR element

2.5.1 PAIR attributes

Attribute name	Attribute description	Required?	Allowed values
EVENT_TYPE	As in the EVENT element	No	If included its value must be the same as in the EVENT element.

2.5.2 PAIR child elements

Element name	Element description	Required?	Allowed values, comments
PAIR_NUMBER	The unique pair number or other id used to reference this pair in the rest of the results file.	Yes	Text or number. In a file with multiple SESSION elements the same pair must have the same id throughout. If the same sequence has been used for NS and EW pair numbers (e.g. 1-12 NS and 1-12 EW) then NS or EW should be appended to the pair id to make a unique reference. Relying on the direction element is not OK.
DIRECTION	The direction played by this pair during the event.	Only if the pair sat in one direction throughout the event	NS or EW. Must be included in two winner events.
BOARDS_PLAYED	The number of boards played by this pair.	Yes	Number. This includes any boards not played but given an assigned score, but excludes any sit-out boards. New in USEBIO 1.1
PAIR_IMPS	The pair-wise cross-IMPs or Butler-IMPs scored by this pair	Only for Teams events where team pairing available	Number. The child element PAIRWISE_SCORING_METHOD of the EVENT element defines how these values are calculated. New in USEBIO 1.1
Elements for the overall score and results for this pair	Described in the section "Overall score and results elements" below.	Yes, for Pairs events	In Teams events this data is a direct child of the TEAM element, and not within the PAIR element
PLAYER	One for each of the players in the pair.	Yes	A compound element, as described below.

2.6 PLAYER element

2.6.1 PLAYER attributes

Attribute name	Attribute description	Required?	Allowed values
RATEABLE	Whether the results of this player in this event are to be used in a grading (rating) system.	No	Y or N If omitted, Y is assumed.

2.6.2 PLAYER child elements

Element name	Element description	Required?	Allowed values, comments
PLAYER_NAME	The full name of the player.	Yes	Text
NATIONAL_ID_NUMBER	The player's national ID number e.g. EBU no, ABF no, ACBL no, SBU no etc.	No	Number or text
CLUB_ID_NUMBER	The player's membership number at the club whose event it is.	No	Number or text.
Elements for the overall score and results for this player.	Described in the section "Overall score and results elements" below.	Only for Individual events	

2.7 Overall score and results elements

Depending on the type of event these elements are the direct children of the TEAM, PAIR or PLAYER elements.

Element name	Element description	Required?	Allowed values, comments
PLACE	The final position for this pair/team in the event.	Yes	If there are ties, the "=" sign must be used. For example, 3= would be used for the two pairs/teams tied at 3rd.
TOTAL_SCORE	The total score for this pair or team (after applying any handicap or adjustment). This will be in MPs, IMPs, or VPs according to the scoring system of the event.	Optional for MP scoring, required otherwise.	When reporting cross-IMP scores, the score for a pair for each board must be the <u>average</u> of the IMP scores against every other time the board was played, <u>not</u> the sum of these scores. The TOTAL_SCORE for a pair will be the sum of the cross-IMP scores for each board. Similar rules apply to Butler-IMPS.
ADJUSTMENT	Indicates a penalty for an infraction of some kind at an event level.	No	Number
HANDICAP	The handicap applied to the score for this pair.	No	Number

CARRY_FORWARD	In a multi-session event this contains the score for the pair/team carried forward from a previous session	No	Number
PERCENTAGE	The total percentage for this pair/team (after applying handicap & adjustment).	Yes, only for MP scoring	Number, between 0 and 100.
MASTER_POINTS_AWARDED	This indicates the number of Master Points awarded to this pair or team.	No	When this is used directly below PAIR or TEAM element, the MASTER_POINT_TYPE child element of the EVENT element must be specified. This is described in more detail below - in the "Master points awarded" section.
MASTER_POINTS	This is used when multiple types of Master Points have been awarded in the event.	No	This is a complex element that is made up of two child elements - MASTER_POINTS_AWARDED and MASTER_POINT_TYPE. This is explained in more detail below - in the "Master points awarded" section.
WINS_OR_DRAWS	This is used in match based events to indicate the total number of matches won or drawn by this pair/team.	No	Number

2.8 Master points awarded

When master points have been awarded in an event, you can represent this in two ways in the USEBIO XML. The first would be to use the MASTER_POINTS_AWARDED element directly within a PAIR or TEAM, as shown in the example below. This sample shows how you must use the MASTER_POINT_TYPE element (within EVENT) if you use this option.

```

<USEBIO Version="1.1">
  <CLUB> ... </CLUB>
  <EVENT EVENT_TYPE="MP_PAIRS">
    <MASTER_POINT_TYPE>BLACK</MASTER_POINT_TYPE>
    ...
    <PARTICIPANTS EVENT_TYPE="MP_PAIRS">
      <PAIR>
        <MASTER_POINTS_AWARDED>100</MASTER_POINTS_AWARDED>
        ...
      </PAIR>
    </PARTICIPANTS>
  </EVENT>
</USEBIO>

```

The previous option is fine as long as there was just a single type of master point awarded during the event. This is not always the case, as for some events there will be multiple types of master point awarded e.g. black and green. In this scenario, the MASTER_POINTS element must be used within a PAIR or TEAM element instead. An example of this is shown below. Note that this time, the XML does not contain the MASTER_POINT_TYPE element within EVENT.

```
<USEBIO Version="1.1">
  <CLUB> ... </CLUB>
  <EVENT EVENT_TYPE="MP_PAIRS">
    ...
    <PARTICIPANTS EVENT_TYPE="MP_PAIRS">
      <PAIR>
        <MASTER_POINTS>
          <MASTER_POINTS_AWARDED>200</MASTER_POINTS_AWARDED>
          <MASTER_POINT_TYPE>BLACK</MASTER_POINT_TYPE>
        </MASTER_POINTS>
        <MASTER_POINTS>
          <MASTER_POINTS_AWARDED>100</MASTER_POINTS_AWARDED>
          <MASTER_POINT_TYPE>GREEN</MASTER_POINT_TYPE>
        </MASTER_POINTS>
        ...
      </PAIR>
    </PARTICIPANTS>
  </EVENT>
</USEBIO>
```

3. Match and Board results

It is valid to produce a USEBIO file without the details of results at Board and Match level. Indeed some scoring systems often do this. However, this detail is of interest for displaying to the players and may be necessary for the correct functioning of a rating or grading system. If results are included they must follow one of the three options below.

- Simple results, output board by board. This may be used for all Pairs events including Swiss Pairs, though since it does not describe the match results between pairs, the second format is preferred for Swiss Pairs.
- Results for matches and boards suitable for Swiss Pairs events.
- Results for matches and boards for all Teams events.

In each case the elements for the results simply follow the PARTICIPANTS element as direct children elements of the EVENT element.

3.1 Simple results

The standard structure consists of a set of board definitions, one for each board in the session. Each board has a unique board number and a set of traveller lines, one for each time the board was played. Each traveller line has the information that might be on a paper traveller and the NS and EW points awarded according to the scoring method for the event.

Here is an example of a board element.

```
<BOARD EVENT_TYPE="MP_PAIRS">
  <BOARD_NUMBER>1</BOARD_NUMBER>
  <TRAVELLER_LINE>
    <NS_PAIR_NUMBER>1</NS_PAIR_NUMBER>
    <EW_PAIR_NUMBER>2</EW_PAIR_NUMBER>
    <CONTRACT>2H</CONTRACT>
    <PLAYED_BY>S</PLAYED_BY>
    <LEAD>DA</LEAD>
    <TRICKS>6</TRICKS>
    <SCORE>-100</SCORE>
    <NS_MATCH_POINTS>77</NS_MATCH_POINTS>
    <EW_MATCH_POINTS>33</EW_MATCH_POINTS>
  </TRAVELLER_LINE>
  <TRAVELLER_LINE>
    ...
  </TRAVELLER_LINE>
  ...
</BOARD>
```

3.1.1 BOARD attributes

Attribute name	Attribute description	Required?	Allowed values
EVENT_TYPE	As in the EVENT element	No	If included its value must be the same

			as in the EVENT element.
--	--	--	--------------------------

3.1.2 BOARD child elements

Element name	Element description	Required?	Allowed values / comment
BOARD_NUMBER	This is the unique identifier for the board in this session.	Yes	Number For multi session events, the board number may not be unique. See the section on multi session events.
TRAVELLER_LINE	This contain details about a specific traveller line. This will be repeated for each line on the traveller.	Yes	This is a complex element and is described in more detail below.

3.1.3 TRAVELLER_LINE child elements

Element name	Element description	Required?	Allowed values / comment
NS_PAIR_NUMBER, EW_PAIR_NUMBER	The ID numbers of the pairs that sat in the NS and EW positions for this traveller line.	Yes	A Pair id. Each value corresponds to a unique pair in the PARTICIPANTS element.
CONTRACT PLAYED_BY LEAD TRICKS	These provide information about how the hand was played on this traveller line i.e. what the contract bid was, which player made the contract, what the lead card was and how many tricks were made.	No, but useful to systems that display results.	Text. It is usual to abbreviate values to initial letters.
SCORE	This is the score for the NS pair on this traveller line.	Yes	Usually the actual score, but maybe allocated percentages entered by the director, such as A6060 or A5500
PERCENTAGE	The match points percentage for NS	Deprecated	
NS_MATCH_POINTS, EW_MATCH_POINTS	Match points scored by the NS and EW pair on this traveller line.	Yes, if the event scoring was match points	Number (not percentage)
NS_BUTLER_POINTS, EW_BUTLER_POINTS	Butler points scored by the NS and EW pair on this traveller line.	Yes, if the event scoring was Butler IMPs	Number
NS_CROSS_IMP_POINTS, EW_CROSS_IMP_POINTS	Cross IMPS scored by the NS and EW pair on this traveller line.	Yes, if the event scoring was Cross IMPs	Number When reporting cross-IMP scores, the score for a pair for each board must be the <u>average</u> of the IMP scores against every other time the board was played, <u>not</u> the sum of these scores. The TOTAL_SCORE for a pair will be the sum of the cross-IMP scores for each board.

NS_AGGREGATE_POINTS, EW_ AGGREGATE_POINTS	Aggregate points scored by the NS and EW pair on this traveller line.	Yes, if the event scoring was Aggregate points	Number
---	---	--	--------

3.2 Match and board results for Swiss Pairs events

Although the above format is acceptable for all Pairs events, a format which allows the results of each match to be included is preferred for Swiss Pairs events.

Now there is a list of MATCH elements, one for each match played in the event. These may be listed in any order. It is not necessary to list all the matches in round 1 before the matches in round 2, for example.

3.2.1 Swiss Pairs MATCH child elements

Element name	Element description	Required?	Allowed values / comment
ROUND_NUMBER	The round during which this match was played.	No, but useful	Number.
START_BOARD_NUMBER	The lowest numbered board played in this match.	No	
END_BOARD_NUMBER	The highest numbered board played in this match.	No	
NS_PAIR_NUMBER, EW_PAIR_NUMBER	The ID numbers of the pairs that sat in the NS and EW positions in this match.	Yes	A Pair id. Each value corresponds to a unique pair in the PARTICIPANTS element.
NS_VICTORY_POINTS, EW_VICTORY_POINTS	The total victory points awarded to the NS and EW pairs for this match.	Yes	This is the overall result of this match.
BOARD	This contains details of specific boards played in this match. This will occur once for each board played.	Yes	The structure and format of boards (and traveller lines) is almost identical to the format described in the "Simple results" section above. Further details are provided below.

In each MATCH there is one BOARD element for each of the boards played in that match between the two pairs. In distinction to the simple results case, there will be just one TRAVELLER_LINE element per BOARD element in the MATCH, representing the time the board was played between the two pairs in the match. Of course there will be other occurrences of a BOARD element with the same BOARD_NUMBER in other matches.

The formats of the BOARD and TRAVELLER_LINE elements are as described for the simple results case. The only exceptions are the NS_PAIR_NUMBER and EW_PAIR_NUMBER elements within TRAVELLER_LINE, which are **not** included in the traveller lines in a Swiss Pairs event, as these are now specified for the match, not for individual traveller lines.

3.3 Match and board results for Teams events

As in the format for Swiss Pairs there is a list of MATCH elements, but now one for each match between two teams. These are direct child elements of the EVENT element.

(Note that this is change from USEBIO 1.0, where Team match elements were children of the TEAMS elements, and so were inside the PARTICIPANTS element. This has changed some of the content of a Teams MATCH element.)

Here is an example of a Teams MATCH element for the case when team pairing was not available.

```
<MATCH>
  <ROUND_NUMBER>2</ROUND_NUMBER>
  <TEAM>11</TEAM>
  <OPPOSING_TEAM>2</OPPOSING_TEAM>
  <START_BOARD_NUMBER>6</START_BOARD_NUMBER >
  <END_BOARD_NUMBER>10</END_BOARD_NUMBER>
  <TEAM_SCORE>19</TEAM_SCORE>
  <OPPOSING_TEAM_SCORE>1</OPPOSING_TEAM_SCORE>
  <BOARD EVENT_TYPE="SWISS_TEAMS">
    <BOARD_NUMBER>6</BOARD_NUMBER>
    <IMPS>10</IMPS>
    <TRAVELLER_LINE>
      <DIRECTION>NS</DIRECTION>
      <CONTRACT>4H</CONTRACT>
      <PLAYED_BY>S</PLAYED_BY>
      <LEAD>H7</LEAD>
      <TRICKS>10</TRICKS>
      <SCORE>420</SCORE>
    </TRAVELLER_LINE>
    <TRAVELLER_LINE>
      <DIRECTION>EW</DIRECTION>
      <CONTRACT>4H</CONTRACT>
      <PLAYED_BY>S</PLAYED_BY>
      <LEAD>AD</LEAD>
      <TRICKS>9</TRICKS>
      <SCORE>-50</SCORE>
    </TRAVELLER_LINE>
  </BOARD>
  <BOARD> ... board data for each board in the match ...
</BOARD>
  ...
</MATCH>
```

When team pairing is available, it is possible to say which pair of each team played in each occurrence of a TRAVELLER_LINE and to compute each pair's overall cross-IMP score for that board. In this case there are additional elements included for each board as shown in bold in the example below.

```
<MATCH>
  <ROUND_NUMBER>2</ROUND_NUMBER>
  <TEAM>11</TEAM>
  <OPPOSING_TEAM>2</OPPOSING_TEAM>
  <START_BOARD_NUMBER>6</START_BOARD_NUMBER >
  <END_BOARD_NUMBER>10</END_BOARD_NUMBER>
  <TEAM_SCORE>19</TEAM_SCORE>
```

```

<OPPOSING_TEAM_SCORE>1</OPPOSING_TEAM_SCORE>
<BOARD EVENT_TYPE="SWISS_TEAMS">
  <BOARD_NUMBER>6</BOARD_NUMBER>
  <IMPS>10</IMPS>
  <TRAVELLER_LINE>
    <DIRECTION>NS</DIRECTION>
    <NS_PAIR_NUMBER>11A</NS_PAIR_NUMBER>
    <EW_PAIR_NUMBER>2B</EW_PAIR_NUMBER>
    <CONTRACT>4H</CONTRACT>
    <PLAYED_BY>S</PLAYED_BY>
    <LEAD>H7</LEAD>
    <TRICKS>10</TRICKS>
    <SCORE>420</SCORE>
    <NS_CROSS_IMPS_POINTS>6.33</NS_CROSS_IMPS_POINTS>
    <EW_CROSS_IMPS_POINTS>-6.33</EW_CROSS_IMPS_POINTS>
  </TRAVELLER_LINE>
  <TRAVELLER_LINE>
    <DIRECTION>EW</DIRECTION>
    <NS_PAIR_NUMBER>2A</NS_PAIR_NUMBER>
    <EW_PAIR_NUMBER>11B</EW_PAIR_NUMBER>
    <CONTRACT>4H</CONTRACT>
    <PLAYED_BY>S</PLAYED_BY>
    <LEAD>AD</LEAD>
    <TRICKS>9</TRICKS>
    <SCORE>-50</SCORE>
    <NS_CROSS_IMPS_POINTS>-3</NS_CROSS_IMPS_POINTS>
    <EW_CROSS_IMPS_POINTS>3</EW_CROSS_IMPS_POINTS>
  </TRAVELLER_LINE>
</BOARD>
  <BOARD> ... board data for each board in the match ...
</BOARD>
  ...
</MATCH>

```

3.3.1 Teams MATCH child elements

Element name	Element description	Required?	Allowed values / comment
ROUND_NUMBER	The round during which this match was played.	No, but useful	Number. Note that in Swiss Teams short triples, you have to allow for a team playing two matches with the same round number.
START_BOARD_NUMBER	The lowest numbered board played in this match.	No	Number
END_BOARD_NUMBER	The highest numbered board played in this match.	No	Number
TEAM	The team from whose viewpoint the match is reported	Yes	A Team id which corresponds to a unique team in the PARTICIPANTS element.
OPPOSING_TEAM	The team ID for the opposing pair in this match.	Yes	A Team id which corresponds to a unique team in the PARTICIPANTS element.
SCORE	The score awarded to the primary team for this match.	Yes	This will be in either IMPs or VPs according to the SCORING_METHOD specified for the event.

OPPOSING_TEAM_SCORE	The score awarded to the opposing team for this match.	Yes	This will be in either IMPs or VPs according to the SCORING_METHOD specified for the event.
BOARD	This contains details of specific boards played in this match. This will occur once for each board played.	Yes	The structure and format of boards (and traveller lines) is similar to the format described in the "Simple results" section above. Further details are provided below.

3.3.2 Teams BOARD child elements

Element name	Element description	Required?	Allowed values / comment
BOARD_NUMBER	This is the unique identifier for the board in this session.	Yes	Number For multi session events, the board number may not be unique. See the section on multi session events.
IMPS	The IMPs score on this board from the view point of this team, obtained by comparing the results of the two times it was played.	Yes	Number. Implicitly the opposing team has the opposite score. (In future Teams events with more players will be supported, but an IMPs score per board will still be computed.)
TRAVELLER_LINE	This contain details about a specific traveller line. This will occur twice, once for each time the board was played in this match.	Yes	For details see below. (In future Teams events with more players will be supported. This will simply require additional TRAVELLER_LINES in the match.

3.3.3 Teams TRAVELLER_LINE child elements

Element name	Element description	Required?	Allowed values / comment
DIRECTION	The direction that this team sat for this board	Yes	NS or EW In the BOARD element of a Swiss Teams of Teams of Four match there will be one TRAVELLER_LINE with DIRECTION NS and one with DIRECTION EW.
NS_PAIR_NUMBER, EW_PAIR_NUMBER	The ID numbers of the pairs that sat in the NS and EW positions for this traveller line.	Yes, only if team pairing is available.	A Pair id. Each value corresponds to a unique pair in the PARTICIPANTS element.
CONTRACT PLAYED_BY LEAD TRICKS	These provide information about how the hand was played on this traveller line i.e. what the contract bid was, which player made the contract, what the lead card was and how many tricks were made.	No, but useful to systems that display results.	Text. It is usual to abbreviate values to initial letters.
SCORE	This is the score for the NS pair on this traveller line.	Yes	Number

NS_CROSS_IMP_POINTS, EW_CROSS_IMP_POINTS Or NS_BUTLER_POINTS, EW_BUTLER_POINTS	This is the pair-wise cross IMPs (or Butler IMPs) score on this board for the pairs on this traveller line. The NS and EW values will be equal and opposite in sign.	If team pairing is available.	Number. The scoring method used here is defined in the element PAIRWISE_SCORING_METHOD
--	--	-------------------------------	---

3.4 Individual events

In an individual event, players play with several partners during the event, and no significance is given to these pairs. Therefore no pair ids are recorded and there are consequential changes to the reporting of results in TRAVELLER_LINE elements. The elements NS_PAIR_NUMBER and EW_PAIR_NUMBER are replaced by four elements for the four players playing that board at that time.

Individual TRAVELLER ELEMENTS are

Element name	Element description	Required?	Allowed values / comment
N_PLAYER_NUMBER, S_PLAYER_NUMBER, E_PLAYER_NUMBER, W_PLAYER_NUMBER	The ID numbers of the players that sat in the N, S, E and W positions for this traveller line.	Yes	A Player id. Each value corresponds to a unique player in the PARTICIPANTS element.
Other elements	As in the section on "Simple results".		

4. Multi-section and multi-session events

4.1 Multi-section events

Some events are divided into sections with no mixing within a session of the pairs in different sections. The different sections will play the same set of boards, though sometimes a small number of boards will be played only in one section. Board numbers identify a unique board across all sections. Scoring is normally done “across the field”, that is without regard to the section in which a pair (or team) was playing. (An exception is In-Section scoring in Swiss Pairs where the match-pointing is sometimes set to 'within a section' to avoid distortions in large events. The recording that this exceptional scoring method has been used is not supported in USEBIO.)

It is valid to report a multi-section event in USEBIO without reference to the sections. However, USEBIO allows the sections to be reported explicitly, by using a number SECTION elements directly within the EVENT element. Note that in this case, it is helpful to set the SECTION_COUNT child element of the EVENT element, though USEBIO 1.1 does not require this.

Each SECTION has child PARTICIPANTS and BOARD (and MATCH, if relevant) elements which contain the players and results which were in that section. The example below illustrates the overall structure for an event with two sections.

```
<USEBIO Version="1.0">
  <CLUB>...</CLUB>
  <EVENT EVENT_TYPE="MP_PAIRS">
    <SECTION SECTION_ID="A">
      <PARTICIPANTS EVENT_TYPE="MP_PAIRS">
        ...
      </PARTICIPANTS>
      <BOARD EVENT_TYPE="MP_PAIRS">
        ...
      </BOARD>
    </SECTION>
    <SECTION SECTION_ID="B">
      <PARTICIPANTS EVENT_TYPE="MP_PAIRS">
        ...
      </PARTICIPANTS>
      <BOARD EVENT_TYPE="MP_PAIRS">
        ...
      </BOARD>
    </SECTION>
  </EVENT>
</USEBIO>
```

Note that ids (pair, team, or board) must be unique across the whole event. It is not acceptable for the same pair-id to differ to different pairs in different sections.

It is valid, though unusual, to report an event with one section using the multi-section format with a single SECTION element.

4.1.1 SECTION attributes

Attribute name	Attribute description	Required?	Allowed values
SECTION_ID	A unique identifier for the section.	Yes	Text

4.2 Multi-session events

USEBIO also supports multiple session events. An event which is broken into sessions only to provide the players with meal and rest breaks need not be recorded as a multi-session event, it can simply be treated as if it were a single, long session. However if different boards with the same number are being played in the later session it is necessary for USEBIO to report these as different sessions. USEBIO supports this by using multiple SESSION elements directly below the EVENT element. Note that in this case, it is helpful to set the SECTION_COUNT child element of the EVENT element, though USEBIO 1.1 does not require this.

For simplicity, a multi-session event with a single section will be described, though sessions with multiple sections can be reported in a similar way.

Each SESSION has child PARTICIPANTS and BOARD (and MATCH, if relevant) elements which contain the players and results which were in that session. Pairs (and Teams) must have the same unique id across all sessions, but board numbers need only be unique within a session. To uniquely identify a board in the whole event, it would be necessary to quote its board number and session id.

In addition there may be a further PARTICIPANTS element outside all the SESSIONS and a direct child of the EVENT element. The purpose of this will be described shortly. The overall structure of a Pairs event with two sessions is shown below.

```
<USEBIO Version="1.0">
  <CLUB>...</CLUB>
  <EVENT EVENT_TYPE="MP_PAIRS">
    ... EVENT simple child elements
    <PARTICIPANTS EVENT_TYPE="MP_PAIRS"> <!--optional-->
      ...
    </PARTICIPANTS>
    <SESSION SESSION_ID="SAT">
      <PARTICIPANTS EVENT_TYPE="MP_PAIRS">
        ...
      </PARTICIPANTS>
      <BOARD EVENT_TYPE="MP_PAIRS">
        ...
      </BOARD>
    </SESSION>
    <SESSION SESSION_ID="SUN">
      <PARTICIPANTS EVENT_TYPE="MP_PAIRS">
        ...
      </PARTICIPANTS>
      <BOARD EVENT_TYPE="MP_PAIRS">
```

```
    ...  
    </BOARD>  
    ...  
  </SESSION>  
</EVENT>  
</USEBIO>
```

Each of the participants elements will contain “overall score and results” elements as described in section 2.7. What scores and results are these? There are two ways of recording a pair’s results, depending on whether only the overall results are recorded or whether a pair’s totals within each session are also recorded. In the first case, the overall results will be repeated whenever the pair is mentioned within a PARTICIPANTS element. In the second case there should be an initial PARTICIPANTS element, which records the overall result, as well as one PARTICIPANTS element specific to each section and session, in which the totals specific to that session will be put. Either approach is an acceptable USEBIO style. However the second approach is preferable as it contains extra information and is consistent with the approach described in the following section.

Note that in the second case, USEBIO 1.1 does not define the policy for if and when carry forward values should be used in the results for each session, though if they are used they must be recorded in the relevant CARRY_FORWARD elements.

Depending on the procedure for awarding Master Points, these may appear in any of the sessions or only in the top-level PARTICIPANTS element.

An alternative approach is to describe each session as if it were a separate event with its own USEBIO file.

4.3 USEBIO files representing parts of an event

Although it is usual for a USEBIO file to represent an entire event, sometimes it is useful to produce a file for a partly completed event, particularly for an event that takes place over an extended period of time. This allows the partial results to be displayed, or the early results used to update a rating system as soon as possible. To achieve this, each part of the event which is to be reported separately (usually one, but possibly more than one, session) should be treated as an event in itself.

In addition the overall results should be output as an additional event, with a file containing the CLUB element, the EVENT element and its simple child elements and a PARTICIPANTS element with the final results, but with no BOARD or MATCH elements. Depending on the procedure for awarding Master Points, these may be awarded for the individual sessions or only in the final results file.

Note that as above USEBIO 1.1 does not define the policy for if and when carry forward values should be used in the individual session files, though if they are used they must be recorded in the relevant CARRY_FORWARD elements.

In USEBIO 1.1 there is no method for linking these separate files to indicate that they all belong to the same physical event. Doubtless the event DESCRIPTION will be used to indicate this.

(For EBU affiliated events which do this, there is a policy of setting the element P2P_CHARGE_CODE for the individual sessions and for the overall results so that the overall event is correctly charged for and graded.)

5. Changes from USEBIO 1.0

There will be a number of readers who have scoring systems which produce XML files which are based on USEBIO 1.0. This section describes the differences in USEBIO 1.1 from USEBIO 1.0. They fall into three categories

- Clarifications
- Additional features
- Changes in format

5.1 Clarification of the USEBIO specification

In many places the USEBIO 1.0 was insufficiently prescriptive and the following clarifications are made in USEBIO 1.1

- 1) When reporting an event that is a dual winner session, i.e. where there are separate winners for NS and EW, then the <WINNER_TYPE> element must be present and set to 2 and for every <PAIR> the DIRECTION element must be present and be set to NS or EW appropriately.
- 2) When reporting cross-IMP scores, the score for a pair for each board must be the average of the IMP scores against every other time the board was played, not the sum of these scores. The TOTAL_SCORE for a pair will be the sum of the cross-IMP scores for each board. Similar rules apply to Butler-IMPS.
- 3) In the participants section, each pair must be an actual pair of players. There must not be a null pair added to make an even number of pairs, or for any other reason.
- 4) Wherever numeric values or text values from a set of options are expected, it is not valid to have a blank value.
- 5) Pair numbers are used within USEBIO to identify each pair of players and they occur both in the PARTICIPANTS element and within the MATCH and/or BOARD elements. Each pair number must uniquely identify a pair of players throughout the event, and appear exactly the same in all elements. Although called PAIR_NUMBER, the use of numeric values is not essential and values such as "3NS" or "18blue" may be used, provided these values appear in all places where the pair id occurs.
- 6) Currently some implementations, when reporting dual-winner events, use the same id for the NS and EW pairs, relying on the DIRECTION element to distinguish the pairs. This is explicitly forbidden in USEBIO version 1.1.
- 7) USEBIO 1.1 clarifies which elements are optional and under what circumstances.

5.2 Additional information in version 1.1

- 1) To assist with sorting out misunderstandings, each USEBIO file must contain the name and version of the scoring software that generated the

XML file. This uses the elements PROGRAM_NAME and PROGRAM_VERSION (see the section on EVENT child elements.)

- 2) To simplify some processing by grading systems, the number of boards in the event (that is the maximum number of boards played by a pair, not the total of the number of boards in use), and the number of boards actually played by each pair (i.e. excluding sit-outs, but including boards allocated a score by the director) must be reported. This uses a BOARDS_PLAYED element both within the PAIR element and directly within the EVENT element.
- 3) If a Swiss Pairs event is scored using IMPs rather than match points, the method of scoring must be made explicit. This is done by using new event types. A scoring system need not provide this option as only a few clubs or event organisers will wish this to be included.
- 4) For Teams events (Swiss Teams and multiple Teams of Four) it is sometimes possible to identify the players in each pair making up a team, and to know which pairs played which boards in which direction. (See the note at the end of section 2.2.2 for the circumstances when this happens.)

When this is the case, the data can be used to calculate and record the cross-IMP scores of each pair. *(Note that if a scoring system calculates Butler-IMP scores for the pairs in a Teams event rather than cross-IMP scores, then these may be used instead, but cross-IMPs are preferred.)* These cross-IMP values for a pair are output in the PAIR_IMPS element for each PAIR, and the TEAM element identifies the pairs within a team.

Section 2.4.2 of this specification allows for complex arrangements where teams have more than four players, or players who change their partners during the session. However, it is expected that many scoring systems will support only the simple situation where a team of four is made up of two pairs who remain the same throughout the session.

There are two new child elements within the EVENT element to describe what the scoring system has done. They are TEAM_PAIRING_AVAILABLE and PAIRWISE_SCORING_METHOD.

5.3 Changes in version 1.1 to existing elements

- 1) The structure of Match and Board data for Teams events has been changed to be more consistent with that for Pairs events. It is described in the section "Match and board results for Teams events". The inclusion of this level of data within a USEBIO file continues to be optional.

6. Future plans

A future version of USEBIO is being discussed. It will be backwards compatible with version 1.1, so any file compliant with USEBIO 1.1 will remain compliant with the new version. It is likely to include extra optional tags within the PARTICIPANTS element which will define such things as prize winners or qualifiers in qualification stages of a large event.

It is also likely to extend supported Team events to those which are Teams of Eight or Twelve.

7. References

- 1) Usage of USEBIO XML in communications with the EBU, Chris Stableford issue 1.1, 18 May 2009 (<http://www.usebio.org/documentation/usebio-1.0.pdf>)

This is the USEBIO 1.0 specification.

- 2) USEBIO specification version 1.1 December 2012

This is the original document which described the changes between USEBIO 1.0 and 1.1. It contains a formal specification of USEBIO 1.1 using "relax NG" code.

- 3) Pianola USEBIO XML guide

This is a guide to USEBIO 1.0 files and how the Pianola bridge system uses them. The format has been used as a template for this document.

- 4) USEBIO website: (<http://usebio.org>)

This gives an overall guide to USEBIO and how EBU uses the files.