



opta
we live sport

F24: Feed appendices document

Supplementary information to F24

we live sport

Contents

Appendix 1 – event types	1
Appendix 2 – qualifier types	4
Appendix 3 – useful queries	16
Appendix 4 – assist and keypass interpretation	19
Appendix 5 – the <Event> tag	20
Appendix 6 – how events are deleted	21
Appendix 7 – how events are edited/modified	22
Appendix 8 – outcome definitions	23
Appendix 9 – associated qualifiers	25
Appendix 10 – period ID list	27
Appendix 11 – pitch co-ordinates and direction of play	27
Appendix 12 – goalmouth co-ordinates	28
Appendix 13 – pitch zones	29
Appendix 14 - playing positions	30

Appendix 1 – event types

Event types

The following table details the events types used in the F24 feed:

Event id	Name	Description
1	Pass	Any pass attempted from one player to another – free kicks, corners, throw ins, goal kicks and goal assists
2	Offside Pass	Attempted pass made to a player who is in an offside position
3	Take On	Attempted dribble past an opponent (excluding when qualifier 211 is present as this is ‘overrun’ and is not always a duel event)
4	Foul	This event is shown when a foul is committed resulting in a free kick
5	Out	Shown each time the ball goes out of play for a throw-in or goal kick
6	Corner Awarded	Ball goes out of play for a corner kick
7	Tackle	Tackle = dispossesses an opponent of the ball - Outcome 1 = win & retain possession or out of play, 0 = win tackle but not possession
8	Interception	When a player intercepts any pass event between opposition players and prevents the ball reaching its target. Cannot be a clearance.
9	Turnover	Unforced error / loss of possession - i.e. bad control of ball – NO LONGER USED (Replaced with Unsuccessful Touch + Overrun)
10	Save	Goalkeeper event; saving a shot on goal. Can also be an outfield player event with qualifier 94 for blocked shot
11	Claim	Goalkeeper event; catching a crossed ball
12	Clearance	Player under pressure hits the ball clear of the defensive zone or/and out of play
13	Miss	Any shot on goal which goes wide or over the goal
14	Post	Whenever the ball hits the frame of the goal
15	Attempt Saved	Shot saved - this event is for the player who made the shot. Qualifier 82 can be added for blocked shot.
16	Goal	All goals

Event id	Name	Description
17	Card	Bookings; will have red, yellow or 2nd yellow qualifier plus a reason
18	Player off	Player is substituted off
19	Player on	Player comes on as a substitute
20	Player retired	Player is forced to leave the pitch due to injury and the team have no substitutions left
21	Player returns	Player comes back on the pitch
22	Player becomes goalkeeper	When an outfield player has to replace the goalkeeper
23	Goalkeeper becomes player	If goalkeeper becomes an outfield player
24	Condition change	Change in playing conditions
25	Official change	Referee or linesman is replaced
27	Start delay	Used when there is a stoppage in play such as a player injury
28	End delay	Used when the stoppage ends and play resumes
30	End	End of a match period
32	Start	Start of a match period
34	Team set up	Team line up; qualifiers 30, 44, 59, 130, 131 will show player line up and formation
35	Player changed position	Player moved to a different position but the team formation remained the same
36	Player changed Jersey number	Player is forced to change jersey number, qualifier will show the new number
37	Collection End	Event 30 signals end of half. This signals end of the match and thus data collection.
38	Temp_Goal	Goal has occurred but it is pending additional detail qualifiers from Opta. Will change to event 16.
39	Temp_Attempt	Shot on goal has occurred but is pending additional detail qualifiers from Opta. Will change to event 15.
40	Formation change	Team alters its formation
41	Punch	Goalkeeper event; ball is punched clear
42	Good Skill	A player shows a good piece of skill on the ball – such as a step over or turn on the ball – NO LONGER USED
43	Deleted event	Event has been deleted – the event will remain as it was originally with the same ID but will be resent with the type altered to 43.
44	Aerial	Aerial duel – 50/50 when the ball is in the air – outcome will represent whether the duel was won or lost

Event id	Name	Description
45	Challenge	When a player fails to win the ball as an opponent successfully dribbles past them
47	Rescinded card	This can occur post match if the referee rescinds a card he has awarded
49	Ball recovery	Team wins the possession of the ball and successfully keeps possession for at least two passes or an attacking play
50	Dispossessed	Player is successfully tackled and loses possession of the ball
51	Error	Mistake by player losing the ball. Leads to a shot or goals as described with qualifier 169 or 170
52	Keeper pick-up	Goalkeeper event; picks up the ball
53	Cross not claimed	Goalkeeper event; cross not successfully caught
54	Smother	Goalkeeper event; comes out and covers the ball in the box winning possession
55	Offside provoked	Awarded to last defender when an offside decision is given against an attacker
56	Shield ball opp	Defender uses his body to shield the ball from an opponent as it rolls out of play
57	Foul throw-in	A throw-in not taken correctly resulting in the throw being awarded to the opposing team
58	Penalty faced	Goalkeeper event; penalty by opposition team
59	Keeper Sweeper	When keeper comes off his line and/or out of his box to clear the ball
60	Chance missed	Used when a player does not actually make a shot on goal but was in a good position to score and only just missed receiving a pass
61	Ball touch	Used when a player makes a bad touch on the ball and loses possession. Outcome 1 – ball simply hit the player unintentionally. Outcome 0 – Player unsuccessfully controlled the ball.
63	Temp_Save	An event indicating a save has occurred but without full details. Event 10 will follow shortly afterwards with full details.
64	Resume	Match resumes on a new date after being abandoned mid game.
65	Contentious referee decision	Any major talking point or error made by the referee – decision will be assigned to the relevant team

Appendix 2 – qualifier types

Qualifier types

These tables highlight the list of `qualifier_id` attributes that we include in this feed.

An appendix follows that details the list of `qualifier_id` attributes that you can reasonably expect to see against an associated `type_id`.

The following tables detail the qualifiers that you should expect to see in F24:

ID	Pass Events	Values	Description - ASSOCIATED TO EVENT TYPE 1
1	Long ball		Long pass over 35 yards
2	Cross		A ball played in from wide areas into the box
3	Head pass		Pass made with a players head
4	Through ball		Ball played through for player making an attacking run to create a chance on goal
5	Free kick taken		Any free kick; direct or indirect
6	Corner taken		All corners. Look for qualifier 6 but excluding qualifier 2 for short corners
7	Players caught offside	Player ID	Player who was in an offside position when pass was made.
8	Goal disallowed		Pass led to a goal disallowed for a foul or offside
106	Attacking Pass		A pass in the opposition's half of the pitch
107	Throw-in		Throw-in taken
140	Pass End X	0-100	The x pitch coordinate for the end point of a pass - See Appendix 5
141	Pass End Y	0-100	The y pitch coordinate for the end point of a pass - See Appendix 5
155	Chipped		Pass which was chipped into the air
156	Lay-off		Pass where player laid the ball into the path of a teammates run
157	Launch		Pass played from a player's own half up towards front players. Aimed to hit a zone rather than a specific player
168	Flick-on		Pass where a player has "flicked" the ball forward using their head

ID	Pass Events	Values	Description - ASSOCIATED TO EVENT TYPE 1
195	Pull Back		Player in opposition's penalty box reaches the by-line and passes (cuts) the ball backwards to a teammate
196	Switch of play		Any pass which crosses the centre zone of the pitch and in length is greater than 60 on the y axis of the pitch
210	Assist		The pass was an assist for a shot. The type of shot then dictates whether it was a goal assist or just key pass.
212	Length	Dynamic - yards of pitch	The estimated length the ball has travelled during the associated event.
213	Angle	0 to 6.28 (Radians)	The angle the ball travels at during an event relative to the direction of play. Shown in radians.
218	2nd assist		Pass was deemed a 2nd assist - created the opportunity for another player to assist a goal
219	Players on both posts		Assigned to event 6 indicating there were defensive players on both posts when a corner was taken
220	Player on near post		Assigned to event 6 indicating there was a defensive player on only the near post when a corner was taken
221	Player on far post		Assigned to event 6 indicating there was a defensive player on only the far post when corner was taken
222	No players on posts		Assigned to event 6 indicating there were no defensive players on either post when a corner was taken
223	In-swinger		Corner was crossed into the box swerving towards the goal
224	Out-swinger		Corner was crossed into the box swerving away from the goal
225	Straight		Corner was crossed into the box with a straight ball flight

ID	Body Part	Values	Description
15	Head		Any event where the player used their head such as a shot or a clearance
72	Left footed		Player shot with their left foot
20	Right footed		Player shot with right footed
21	Other body part		Shot was neither via a player's head or foot for example knee or chest

ID	Pattern of Play	Values	Description - ASSOCIATED TO EVENT TYPES 13, 14, 15, 16
22	Regular play		Shot during open play as opposed to from a set play
23	Fast break		Shot occurred following a fast break situation
24	Set piece		Shot occurred from a crossed free kick
25	From corner		Shot occurred from a corner
26	Free kick		Shot occurred directly from a free kick
96	Corner situation		Pass or shot event in corner situation. 25 is used when the goal is direct from corner, 96 relates to 2nd phase attack.
97	Direct free		26 will be used for shot directly from a free kick. 97 only used with Opta GoalData (game system 4) but not with full data.
112	Scramble		Goal where there was a scramble for possession of the ball and the defence had an opportunity to clear
160	Throw-in set piece		Shot came from a throw-in set piece
29	Assisted		Indicates that there was a pass (assist) from another player to set up the goal opportunity
154	Intentional assist		Shot from an intentional assist i.e. The assisting player intended the pass, no deflection etc
55	Related event ID	Event_id	This will appear for goals or shots, the related event_id will be that of the assist and thus show the assisting player ID
216	2nd related event ID	Event_id	If there was a 2nd assist, i.e a pass to create the opportunity for the player making the assist. MLS and German Bundesliga 1 & 2.

ID	Shot Descriptors	Values	Description - ASSOCIATED TO EVENT TYPES 13, 14, 15, 16
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ID	Shot Descriptors	Values	Description - ASSOCIATED TO EVENT TYPES 13, 14, 15, 16
9	Penalty		When attempt on goal was a penalty kick. ALSO used on Event type 4 to indicate a penalty was awarded
28	Own goal		Own goal . Note: Use the inverse coordinates of the goal location
113	Strong		Shot was subjectively classed as strong
114	Weak		Shot was subjectively classed as weak
115	Rising		Shot was rising in the air
116	Dipping		Shot was dipping towards the ground
117	Lob		Shot was an attempt by the attacker to play the ball over the goalkeeper and into the goal
120	Swerve Left		Shot which swerves to the left - from attackers perspective
121	Swerve Right		Shot which swerves to the right - from attackers perspective
122	Swerve Moving		Shot which swerves in several directions
133	Deflection		Shot deflected off another player
136	Keeper Touched		Goal where the goalkeeper got a touch on the ball as it went in
137	Keeper Saved		Shot going wide or over the goal but still collected/saved by the goalkeeper with event type 15
138	Hit Woodwork		Any shot which hits the post or crossbar
153	Not past goal line		Shot missed which does not pass the goal line
214	Big Chance		Shot was deemed by Opta analysts an excellent opportunity to score – clear cut chance eg one on one
215	Individual Play		Player created the chance to shoot by himself, not assisted. For example he dribbled to create space for himself and shot.

217	2nd assisted		Indicates that this shot had a significant pass to create the opportunity for the pass which led to a goal
228	Own shot blocked		Player blocks an attacking shot unintentionally from their teammate

ID	Shot Location Descriptors	Values	Description
16	Small box-centre		Zone of the pitch - See appendix 7
17	Box-centre		Zone of the pitch - See appendix 7
18	Out of box-centre		Zone of the pitch - See appendix 7
19	35+ centre		Zone of the pitch - See appendix 7
60	Small box-right		Zone of the pitch - See appendix 7
61	Small box-left		Zone of the pitch - See appendix 7
62	Box-deep right		Zone of the pitch - See appendix 7
63	Box-right		Zone of the pitch - See appendix 7
64	Box-left		Zone of the pitch - See appendix 7
65	Box-deep left		Zone of the pitch - See appendix 7
66	Out of box-deep right		Zone of the pitch - See appendix 7
67	Out of box-right		Zone of the pitch - See appendix 7
68	Out of box-left		Zone of the pitch - See appendix 7
69	Out of box-deep left		Zone of the pitch - See appendix 7
70	35+ right		Zone of the pitch - See appendix 7
71	35+ left		Zone of the pitch - See appendix 7
73	Left		Hit the left post or missed left
74	High		Hit crossbar or missed over
75	Right		Hit right post or missed right
76	Low left		Zone of the goalmouth - See appendix 6
ID	Shot Location Descriptors	Values	Description

77	High left		Zone of the goalmouth - See appendix 6
78	Low centre		Zone of the goalmouth - See appendix 6
79	High centre		Zone of the goalmouth - See appendix 6
80	Low right		Zone of the goalmouth - See appendix 6
81	High right		Zone of the goalmouth - See appendix 6
82	Blocked		Zone of the goalmouth - See appendix 6
83	Close left		Zone of the goalmouth - See appendix 6
84	Close right		Zone of the goalmouth - See appendix 6
85	Close high		Zone of the goalmouth - See appendix 6
86	Close left and high		Zone of the goalmouth - See appendix 6
87	Close right and high		Zone of the goalmouth - See appendix 6
100	Six yard blocked		Shot blocked on the 6 yard line
101	Saved off line		Shot saved on the goal line
102	Goal mouth y co-ordinate	0-100	Y Co-ordinate of where a shot crossed goal line - see Appendix 4
103	Goal mouth z co-ordinate	0-100	Z Co-ordinate for height at which a shot crossed the goal line - see Appendix 4
146	Blocked x co-ordinate	0-100	The x pitch coordinate for where a shot was blocked
147	Blocked y co-ordinate	0-100	The y pitch coordinate for where a shot was blocked

ID	Foul & Card Events	Values	Description - ASSOCIATED TO EVENT TYPE 4 except for cards
10	Hand		Handball
11	6-seconds violation		Goalkeeper held onto the ball longer than 6 seconds resulting in a free kick
12	Dangerous play		A foul due to dangerous play
13	Foul		All fouls
31	Yellow Card		Player shown a yellow card
32	Second yellow		Player receives a 2nd yellow card which automatically results in a red card
33	Red card		Player shown a straight red card
34	Referee abuse		Card shown to player because of abuse to the referee
35	Argument		Card shown to player because of an argument
36	Fight		Card shown to player because of their involvement in a fight
37	Time wasting		Card shown to player for time wasting
38	Excessive celebration		Card shown to player for excessively celebrating a goal
39	Crowd interaction		Card shown to player because of contact or communication with the crowd
40	Other reason		Card shown for unknown reason
95	Back pass		Free kick given for an illegal pass to the goalkeeper which was collected by his hands or picked up
132	Dive		Free kick or card event; player penalised for simulation
158	Persistent infringement		Card shown to player for persistent fouls
159	Foul and abusive language		Card shown for player using foul language
161	Encroachment		Card shown for player who moves within 10 yards of an opponent's free kick
162	Leaving field		Card shown for player leaving the field without permission
163	Entering field		Card shown for player entering the field during play without referee's permission
164	Spitting		Card shown for spitting
165	Professional foul		Card shown for a deliberate tactical foul
166	Handling on the line		Card shown to an outfield player for using their hand to keep the ball out of the goal

ID	Foul & Card Events	Values	Description - ASSOCIATED TO EVENT TYPE 4 except for cards
171	Rescinded card		Referee rescind a card post match
172	No impact on timing		Player booked on bench but who hasn't played any minutes in the match
184	Dissent		Cad shown when a player does not obey referee instructions
191	Off the ball foul		Foul committed by and on a player who is not in possession of the ball
192	Block by hand		Outfield player blocks a shot with their hand

ID	Goalkeeper Events	Values	Description - EVENT TYPES 10, 11, 12
190	From shot off target		Used with Event 10. Indicates a shot was saved by the goalkeeper but in fact the shot was going wide and not on target
88	High claim		Event 11 Claim - Goalkeeper claims possession of a crossed ball
89	1 on 1		Event 10 Save; when attacker was clear with no defenders between him and the goalkeeper
90	Deflected save		Event 10 Save; when goalkeeper saves a shot but does not catch the ball
91	Dive and deflect		Event 10 Save; when goalkeeper saves a shot while diving but does not catch the ball
92	Catch		Event 10 Save; when goalkeeper saves a shot and catches it
93	Dive and catch		Event 10 Save; when goalkeeper saves a shot while diving and catches it
123	Keeper Throw		Pass event - goalkeeper throws the ball out
124	Goal Kick		Pass event – goal kick
128	Punch		Clearance by goalkeeper where he punches the ball clear
139	Own Player		Shot saved by goalkeeper that was deflected by a defender
173	Parried safe		Goalkeeper save where shot is parried to safety
174	Parried danger		Goalkeeper save where shot is parried but only to another opponent
175	Fingertip		Goalkeeper save using his fingertips
176	Caught		Goalkeeper catches the ball
177	Collected		Goalkeeper save and collects possession of the ball

ID	Goalkeeper Events	Values	Description - EVENT TYPES 10, 11, 12
178	Standing		Goalkeeper save while standing
179	Diving		Goalkeeper save while diving
180	Stooping		Goalkeeper saves while stooping
181	Reaching		Goalkeeper save where goalkeeper reaches for the ball
182	Hands		Goalkeeper saves with his hands
183	Feet		Goalkeeper save using his feet
186	Scored		Goalkeeper event - shots faced and not saved resulting in goal
187	Saved		Goalkeeper event - shots faced and saved
188	Missed		Goalkeeper event - shot faced which went wide or over. Did not require a save.
198	GK hoof		Goalkeeper drops the ball on the ground and kicks it long towards a position rather than a specific player
199	Gk kick from hands		Goalkeeper kicks the ball forward straight out of his hands

ID	Defensive Events	Values	Description
14	Last line		When a player makes a defensive action and they are the last person between the opponent and the goal
94	Def block		Defender blocks an opposition shot. Shown with event 10.
167	Out of play		Tackle or clearance event sent the ball out of play
169	Leading to attempt		A player error, event 51, which leads to an opponent shot on goal
170	Leading to goal		A player error, event 51, which lead to an opponent scoring a goal
185	Blocked cross		Clearance; cross is blocked

ID	Line Up / Subs / Formation	Values	Description - ASSOCIATED WITH EVENT TYPES 32, 34, 35, 36, 40
30	Involved	Player ID's in line up	This will show all players in the starting line up and available as a substitute
41	Injury		Substitution, event 18, because of injury
42	Tactical		Substitution, event 18 for tactical reasons
44	Player position	<i>Dynamic</i>	Goalkeeper, Defender, Midfielder, Forward or Substitute. These are the default / natural positions associated with each player and not necessarily the position they played in the match; see qualifier 131 for this.
59	Jersey number	Shirt number of player(s)	This will be shown for substitutions, line ups, line up changes
130	Team formation	Formation ID	See appendix 8
131	Team player formation	1 to 11	Player position within a formation - 'See appendix 8
145	Formation slot	1 to 11	Formation position of a player coming on - see appendix 8
194	Captain	Player ID	ID of the player who is the team captain
197	Team kit	Kit ID	Kit of the team

ID	Referee	Values	Description
50	Official position	1, 2, 3, 4	Referee, Linesman#1, Linesman#2, Forth official
51	Official ID	Official ID	Unique ID for the official
200	Referee stop		Referee stops play
201	Referee delay		Delay in play instructed by referee
208	Referee Injury		Referee injured

ID	Attendance	Values	Description
49	Attendance figure	Dynamic	Number of people in the crowd

ID	Stoppages	Values	Description - EVENT TYPE 27
53	Injured player id	ID of player injured	ID of the player who is injured and causing a delay in the game
202	Weather problem		Bad weather stops or interrupts play
203	Crowd trouble		Trouble within the crowd stops or delays play
204	Fire		Fire with the stadium stops or delays play
205	Object thrown on pitch		Object throw from the crowd lands on the pitch and delays play
206	Spectator on pitch		Spectator comes onto the pitch and forces a delay in play
207	Awaiting officials decision		Given to an event/delay where the referee still has to make a decision
208	Referee injury		Referee sustained injury causing stoppage in play
226	Suspended		Game is has not finished but is suspended
227	Resume		Game has resumed after being suspended mid-way through on a previous date

ID	General	Values	Description
54	End cause	1,2,3,4,5,6,7,99,100	Golden goal, weather, crowd, insufficient players, floodlight failure, frozen pitch, waterlogged pitch, other, unknown
56	Zone	Back, left, centre, right	Area on the pitch - see appendix 7
57	End type		End of the match
127	Direction of play	Right to Left Left to Right	Event type 32 - Actual direction of play in relation to TV camera. X/Y coordinates however are ALWAYS all normalized to Left to Right .
144	Deleted event type	Event ID	An event which should be removed. Value will show the ID of this event
189	Player not visible		Broadcast footage showing replay and not live footage – this event is what Opta analysts believe occurred.
209	Game end		The game is finished
211	Overrun		TAKE ON (3) – where a player takes on an opponent but the ball runs away from them out of play or to an opponent.
229	Post-match complete		Opta post match quality control has been completed on this match

Appendix 3 – useful queries

Below is a table that can be used as a guide to calculate some of the more common statistic types from the F24 data:

English	type_id	outcome	qualifier_id	Extra info	EXCLUDING EVENTS WITH THESE QUALIFIERS
passes total	1	-	-	Include short corners where qualifier 6 is present but not qualifier 2	2, 5, 6, 107, 123,124
Passes successful	1	1	-		2, 5, 6, 107, 123,124
passes unsuccessful	1	0	-		2, 5, 6, 107, 123,124
Crosses Total (open play)	1	-	2		5, 6
Successful Crosses Total (open)	1	1	2		5, 6
Unsuccessful Crosses Total (excl corners & Free kicks)	1	0	2		5, 6
assists total *	16	1	29, 55	Value of 55 = event_id of the assisting pass	
key passes total *	13, 14, 15	-	29, 55	Value of 55 = event_id of the key pass	
offensive passes total	1	-		If (x < end_x)	2, 5, 6, 107, 123,124
offensive passes won	1	1		If (x < end_x)	2, 5, 6, 107, 123,124
offensive passes lost	1	0		If (x < end_x)	2, 5, 6, 107, 123,124
defensive/backward passes	1	-		If (x > end_x)	2, 5, 6, 107, 123,124
sideway passes total	1	-		If (x = end_x)	2, 5, 6, 107, 123,124
long passes total	1	-	1		2, 5, 6, 107, 123,124
long passes won	1	1	1		2, 5, 6, 107, 123,124
long passes lost	1	0	1		2, 5, 6, 107, 123,124
aerial total	44	-			
aerial won	44	1			
aerial lost	44	0			
ground duels total	3,4,7,45,54	-			
ground duels won	3, 4,7,54	1			
ground duels lost	3, 4,7,45,50	0			

English	type_id	outcome	qualifier_id	Extra info	EXCLUDING EVENTS WITH THESE QUALIFIERS
Free kicks taken total	1	-	5		
Fouls total	4	-			
Fouls won	4	1			
Fouls conceded	4	0			
handball conceded	4	0	10		
corners total	1	-	6	Crossed corners include qualifier 2, short corner without qualifier 2	
corners into box - successful	1	1	6	If (83 < end_x < 100) If (21 < end_y < 78.9)	
corners into box - unsuccessful	1	0	6	If (83 < end_x < 100) If (21 < end_y < 78.9)	
interceptions	8	-			
tackles won	7	1 or 0		Outcome 1 – tackle won and possession won or ball went out of play. Outcome 0 – only tackle won no possession won	
Tackle lost - Challenge	45	0			
saves total	10	1			
Save (block by outfielder)	10	1	94		
Claim (gk catches cross)	11	1			
clearance won	12	1			
clearance lost	12	0			
headed clearance won	12	1	15		
headed clearance lost	12	0	15		
Total shots	13,14,15,16	-			
shots on target	15,16	-			82 (blocked shots)
shots off target	13,14	-			
Goals	16	1			
Goals from open play	16	1	22		
Goals from set plays	16	1	24		
Goals from penalties	16	1	9		
Own Goals	16	0	28	Team_id will be the team conceding the own goal	

English	type_id	outcome	qualifier_id	Extra info	EXCLUDING EVENTS WITH THESE QUALIFIERS
headed shots on target	15, 16	-	15		82 (<i>blocked shots</i>)
headed shots total	13, 14, 15, 16, 24	-	15		
headed shots off target	13, 14	-	15		
shots blocked by outfielder	15	-	82		
Total touches	See below**	-			
Successful Take on (dribble)	3	1			
Unsuccessful Take on (dribble)	3	0		Qualifier 211 indicates an "overrun" which is not always a duel event. Optional to include these.	
Fouls won	4	1			
Fouls conceded	4	0			
Penalty conceded	4	0	9		
Yellow Card	17	-	31		
2nd Yellow Cards	17	-	32		
Red Cards	17	-	33		

**Touches

To calculate all touches, aggregate all events with the following event type ids - *irrespective of qualifiers or outcomes or position:*

2, 3, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 41, 42, 50, 52, 54 and 61.

Plus all event type id 1 - *except those flagged with qualifier 123.*

Appendix 4 – assist and keypass interpretation

When `qualifier="55"` is present, then look for its corresponding `value=""`; this will show you the value of the `event_id=""` to look at to find information. It is basically telling you that the shot on goal was assisted (in this case a ‘keypass’) by a pass and it is telling you where to look to find the pass details.

For example:

```
<Event id="783279345" event_id="170" type_id="1" period_id="1" min="20"
sec="33" player_id="19645" team_id="52" outcome="1" x="98.0" y="65.9"
keypass="1" timestamp="2011-08-13T15:21:16.403" last_modified="2011-08-
13T17:21:17">
    <Q id="1360104517" qualifier_id="140" value="95.7" />
    <Q id="716687577" qualifier_id="154" />
    <Q id="1024698286" qualifier_id="141" value="69.8" />
    <Q id="548528358" qualifier_id="213" value="2.3" />
    <Q id="1464195139" qualifier_id="212" value="3.6" />
    <Q id="811964232" qualifier_id="56" value="Center" />
    <Q id="629946245" qualifier_id="210" />
</Event>
<Event id="1079282470" event_id="171" type_id="15" period_id="1"
min="20" sec="35" player_id="2019" team_id="52" outcome="1" x="95.7"
y="69.8" timestamp="2011-08-13T15:21:17.559" last_modified="2011-08-
13T17:21:18">
    <Q id="1372749641" qualifier_id="76" />
    <Q id="1476860249" qualifier_id="20" />
    <Q id="607536004" qualifier_id="102" value="53.5" />
    <Q id="852431923" qualifier_id="65" />
    <Q id="951864007" qualifier_id="154" />
    <Q id="1904271995" qualifier_id="56" value="Center" />
    <Q id="995057860" qualifier_id="103" value="4.2" />
    <Q id="1206524667" qualifier_id="146" value="99.7" />
    <Q id="1896231395" qualifier_id="22" />
    <Q id="119954813" qualifier_id="147" value="53.8" />
    <Q id="432940257" qualifier_id="29" />
    <Q id="2000327362" qualifier_id="55" value="170" />
</Event>
```

- So you can see that the value attribute with `qualifier_id="55"` is telling you to look at `event_id="170"` from the preceding event.
- By looking at `event_id="170"` you can see this was a pass (`type_id="1"`) and `qualifier_id="55"` tells you that it assisted the shot on goal that was saved (`type_id="15"`).
- Note that `keypass="1"` indicates a pass that led directly to a shot on goal (but not a goal) and `assist="1"` denotes a pass that led directly to a shot that was a goal.

Appendix 5 – the <Event> tag

Some of the attributes within the <Event> tag can cause confusion when it comes to interpreting their meanings and uses.

An example:

```
<Event id="2044318208" event_id="153" type_id="5" period_id="1" min="19" sec="31" player_id="49396" team_id="368" outcome="1" x="-2.0" y="53.3" timestamp="2012-06-23T20:04:45.40" last_modified="2012-06-23T20:04:45">
```

Definitions:

- **id="2044318208"** This is the absolute unique integer that we assign to each individual match event and it can be used to database the event and search at a later date.
- **event_id="153"** This is the reference to the order of the match events *within this match only* and the count runs simultaneously for each team.
For example (*NB in a real F24b match file, the two event_id="1" attributes are actually the team line-ups, so treat the below example as merely theory for illustrative purposes*):
 - Team A's first match event is a successful pass from player 1 to player 2, so this is **event_id="1"**; the second event is another successful pass from player 2 to player 3, so this is **event_id="2"**; the third event is an unsuccessful pass from player 3 to player 4 as it was intercepted by the opposite team, so the **event_id** count stops at **"2"** for Team A (until they get the ball back in possession, at which point their count will start again at **"3"**). Now that Team B have the ball, let's say there is a successful pass from their player 1 to their player 2, so Team B's **event_id** count begins at **"1"**, then there's another successful pass from their player 2 to player 3, so this is **event_id="2"** ... this alternate ascending count continues through the match for both teams as their number of match events increase.
- **timestamp="2012-06-23T20:04:45.40"** This is the timestamp that relates to the date and time that the event occurred *within the match*.
- **last_modified="2012-06-23T20:04:45"** This relates to the time that the event was *last modified* by our analysts, for example an event could be edited, deleted or a new one inserted.

***Important note:** whilst at first glance **event_id** looks as though it can be used to order each team's match events chronologically, there are sometimes cases that after our analysts have reviewed each match, that the **timestamp** of the event can be tweaked. In which case this can knock the **event_id**'s out of order (eg instead of **event_id="1"**, then **event_id="2"** and **event_id="3"**, it could change to **event_id="1"**, then **event_id="3"** and **event_id="2"**).

So please be aware that you should *always order events by the following attributes* (in this order):

- **team_id**; then
- **period_id**; then
- **min**; then
- **sec**; and then
- **timestamp**.

Appendix 6 – how events are deleted

An example of a deleted event will look something like this in the feed:

```
<Event id="328486810" event_id="26" type_id="43" period_id="1" min="4" sec="8" player_id="2399" team_id="110" outcome="1" x="0.0" y="0.0" timestamp="2010-12-04T15:04:17.278" last_modified="2010-12-04T15:04:34">
    <Q id="19756363" qualifier_id="56" value="Back" />
    <Q id="371368182" qualifier_id="144" value="50" />
</Event>
```

Where `type_id="43"` describes this event as one that has been deleted from the game file.

`qualifier_id="144"` is used to inform you about the type of match action that was deleted, in this case `value="50"` describes the deleted event as one that was a ‘dispossession’ event.

If you database each of the F24 match files that we send as the game progresses, when a deletion occurs, you will be able to search `id="328486810"` from the previous F24 files you have received during the game.

You will then be able to locate the specific event from a previously delivered match file, which would have looked something like this:

```
<Event id="328486810" event_id="26" type_id="50" period_id="1" min="3" sec="37" player_id="2399" team_id="110" outcome="1" x="65.3" y="2.7" timestamp="2010-12-04T15:03:47.195" last_modified="2010-12-04T15:03:47">
    <Q id="313977382" qualifier_id="56" value="Right" />
</Event>
```

*This can only be achieved if you database each F24 match feed as it is delivered live. If not and you allow each F24 match feed to be overwritten with every new delivery, then the only evidence that you will see that there was a deleted event is by the inclusion of the `type_id="43"` attribute.

Notes:

- Once we delete an event, the associated event's data will be removed from the feed and so this will only be visible in the feeds that were produced before the event was deleted.
- The value of the `event_id=""` attribute remains associated with its deleted event and the ascending count continues to increase in just the same way as if it were any other `type_id`.
 - So for example, `event_id="1"`, `event_id="2"` and `event_id="3"` which could relate to pass, pass and pass might then become; pass, deleted event and pass.

Appendix 7 – how events are edited/modified

We can edit events either live in-play or during our post-match data verification checks; these can be things such as slight player position changes in formations, or the official time of a goal adjusted by a couple of seconds etc.

To associate an event as being edited, we make use of the `last_modified` attribute eg:

```
last_modified="2010-12-04T15:03:47"
```

By using this attribute, it allows you to avoid the situation whereby you'd be faced with having to parse every row of the feed each time a new file is delivered, in an attempt to make sure nothing had been edited.

Instead, by looking for the `last_modified` attribute's appearance only, this will allow you to parse just the new events that are delivered each time, safe in the knowledge that until this attribute is flagged up on your parser, that all previous information can be deemed as correct.

Q id

Whilst the id associated with the event does not change (eg `Event id="316446219"`) in the occurrence of an edited event, the qualifiers – if modified – will be associated with new id value in the `id` attribute ie `Q id="212475322"`

Appendix 8 – outcome definitions

The below table highlights how to interpret the outcome="0" and outcome="1" attributes for their corresponding type_id events:

Event ID	Name	Outcome 0	Outcome 1
1	Pass	Unsuccessful pass ie pass did not find team mate	Successful pass
2	Offside Pass		Always set to "1"
3	Take On	Unsuccessful – player lost possession or was tackled	Successful take on
4	Foul	Player that was fouled	Player who committed the foul
5	Out	The team that put the ball out	The team that therefore gained possession
6	Corner Awarded	The team that conceded the corner	The team that won the corner
7	Tackle	Unsuccessful attempted tackle/challenge from this team to the team on the ball ie other team retains possession after the challenge	Successful tackle ie challenging player wins possession of the ball from the other team
8	Interception		Always set to "1"
9	Turnover		n/a
10	Save		Always set to "1"
11	Claim	Keeper drops the ball after an attempted catch from a cross. The keeper may then pick up the ball again and retain possession, but this would be a separate event	Keeper catches the cross in one attempt ie no drop
12	Clearance	Player clears ball from defence but possession switches to other team (not the same as player clearing ball out of play which is outcome="1")	Player clears ball from defence either to another team mate (ie possession retained) or straight out of play
13	Miss		Always set to "1"
14	Post		Always set to "1"
15	Attempt Saved		Always set to "1"
16	Goal		Always set to "1"
17	Card		Always set to "1"
18	Player off		Always set to "1"
19	Player on		Always set to "1"
20	Player retired		Always set to "1"
21	Player returns		Always set to "1"
22	Player becomes goalkeeper		Always set to "1"

Event ID	Name	Outcome 0	Outcome 1
23	Goalkeeper becomes player		Always set to "1"
24	Condition change		Always set to "1"
25	Official change		Always set to "1"
27	Start delay		Always set to "1"
28	End delay		Always set to "1"
30	End		Always set to "1"
32	Start		Always set to "1"
34	Team set up		Always set to "1"
35	Player changed position		Always set to "1"
36	Player changed Jersey number		Always set to "1"
37	Collection End		Always set to "1"
38	Temp_Goal		Always set to "1"
39	Temp_Attempt		Always set to "1"
40	Formation change		Always set to "1"
41	Punch		Always set to "1"
42	Good Skill		Always set to "1"
43	Deleted event		Always set to "1"
44	Aerial	Player lost aerial duel	Player won the aerial duel
45	Challenge	Always set to "0" ie a challenge by definition is unsuccessful and the player does not win the ball (by winning the ball this would be a tackle ie type_id="7")	
47	Rescinded card		Always set to "1"
49	Ball recovery		Always set to "1"
50	Dispossessed		Always set to "1"
52	Keeper pick-up		Always set to "1"
53	Cross not claimed		Always set to "1"
54	Smother		Always set to "1"
55	Offside provoked		Always set to "1"
51	Error		Always set to "1"
56	Shield ball oop		Always set to "1"
57	Foul throw in		Always set to "1"
58	Penalty faced		Always set to "1"
59	Keeper Sweeper	Goalkeeper comes off the line and clears ball but possession switches to other team (not the same as player clearing ball out of play which is outcome="1")	Goalkeeper comes off the line and either clears ball to another team mate (ie possession retained) or straight out of play
60	Chance missed		Always set to "0"
61	Ball touch	Player unsuccessfully controlled the ball ie lost possession	Ball simply hit player unintentionally
63	Temp_Save		Always set to "1"
64	Resume		Always set to "1"
65	CRD		Always set to "1"

Appendix 9 – associated qualifiers

This table shows which qualifiers have appeared with the different event types throughout the production of F24. Whilst this list should not be taken as definitive, it does show the list of qualifiers that could reasonably be expected to appear with associated events. It serves as guidance but it is subject to change as more feeds are produced.

type_id	qualifier_id
1	1, 2, 4, 5, 6, 15, 22, 23, 24, 25, 26, 29, 31, 55, 56, 96, 97, 106, 107, 123, 124, 138, 140, 141, 154, 155, 156, 157, 160, 168, 195, 196, 198, 199, 210, 212, 213, 214, 218, 223, 224, 225
2	1, 2, 3, 4, 5, 6, 7, 8, 55, 56, 107, 123, 124, 140, 141
3	56, 211
4	9, 10, 11, 12, 13, 34, 40, 56, 95, 132, 184
5	56
6	56, 73, 219, 220, 221, 222
7	14, 56, 167
8	13, 14, 15, 31, 32, 56
9	n/a
10	1, 2, 9, 14, 15, 17, 21, 25, 29, 55, 56, 82, 88, 90, 91, 92, 93, 94, 101, 102, 103, 137, 139, 173, 175, 176, 177, 178, 179, 180, 181, 182, 183, 190
11	1, 2, 56, 88
12	1, 2, 14, 15, 56, 91, 128, 167, 185
13	1, 2, 9, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 55, 56, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 96, 97, 100, 102, 103, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 121, 133, 137, 146, 147, 153, 154, 160, 188, 214, 215
14	5, 9, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 55, 56, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 81, 96, 97, 102, 103, 108, 109, 111, 113, 114, 116, 117, 118, 119, 120, 121, 133, 146, 147, 154, 160, 214, 215
15	1, 2, 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 55, 56, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 96, 97, 100, 101, 102, 103, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 133, 138, 139, 146, 147, 154, 160, 192, 214, 215
16	2, 9, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 40, 55, 56, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 83, 84, 85, 86, 87, 96, 97, 102, 103, 108, 109, 110, 111, 113, 114, 117, 118, 119, 120, 121, 133, 136, 138, 146, 147
17	10, 11, 12, 13, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 56, 95, 132, 158, 159, 161, 162, 163, 164, 165, 166, 171, 172, 184, 191
18	41, 42, 44, 55, 59, 83, 227
19	41, 42, 44, 55, 59, 145, 227
20	n/a
21	145
22	44
23	44
24	45, 46, 47, 48, 49

type_id	qualifier_id
25	50, 51
27	41, 53, 200, 201, 202, 203, 204, 205, 206, 207, 208
28	n/a
30	54, 57, 209, 226, 227
32	127
34	30, 44, 59, 130, 131, 194, 197, 227
35	44
36	59
37	229
38	9, 16, 17, 18, 19, 22, 26, 56, 60, 61, 62, 63, 64, 65, 66, 69, 70, 71
39	9, 16, 17, 18, 19, 20, 22, 26, 56, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71
40	30, 44, 59, 130, 131, 227
41	56
42	56
43	n/a
44	9, 13, 55, 56
45	31, 56
47	13, 31, 32, 33, 34
49	14, 56
50	56
51	169, 170
52	n/a
53	n/a
54	n/a
55	n/a
56	56
57	56
58	9, 56, 73, 75, 138, 178, 179, 186, 187, 188
59	56
60	55, 56, 154
61	56, 138, 228
63	56, 173, 178, 182
64	n/a
65	None available yet - new stat in 2012/13

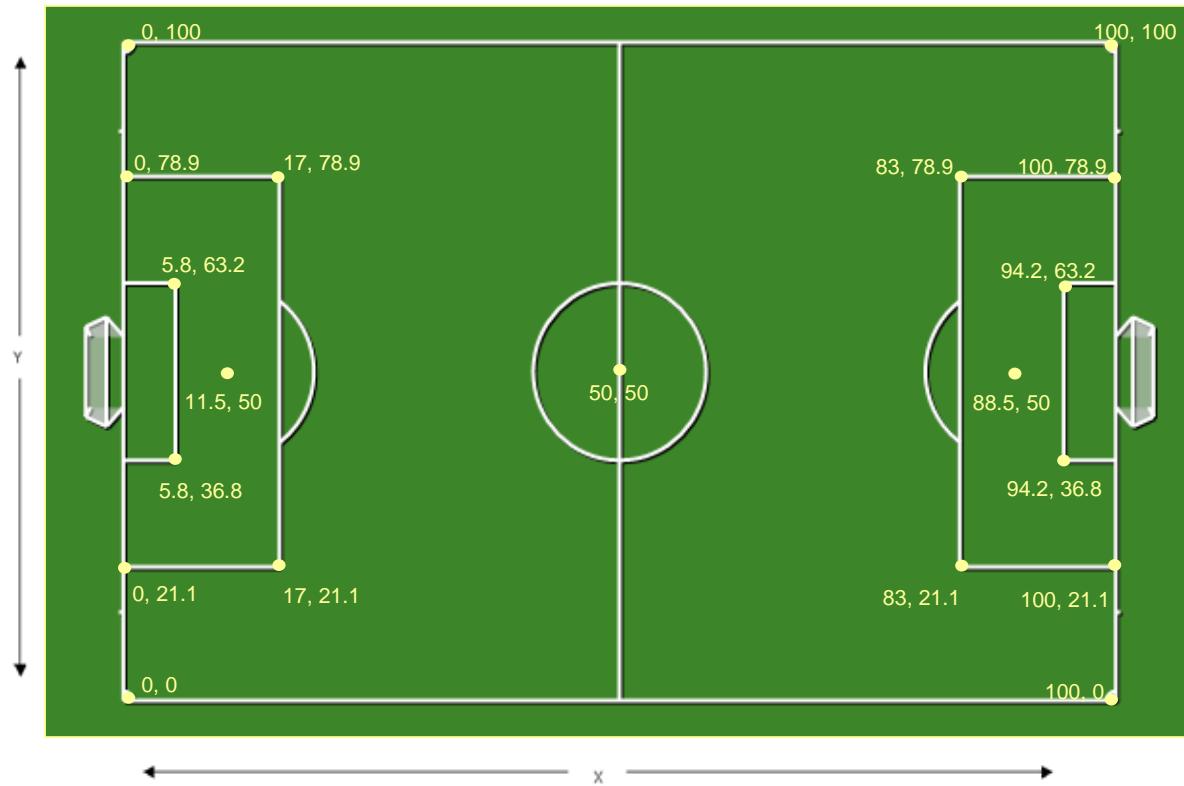
Appendix 10 – period ID list

Below are the period ID values that appear with the period="" attribute in the <Event> tag:

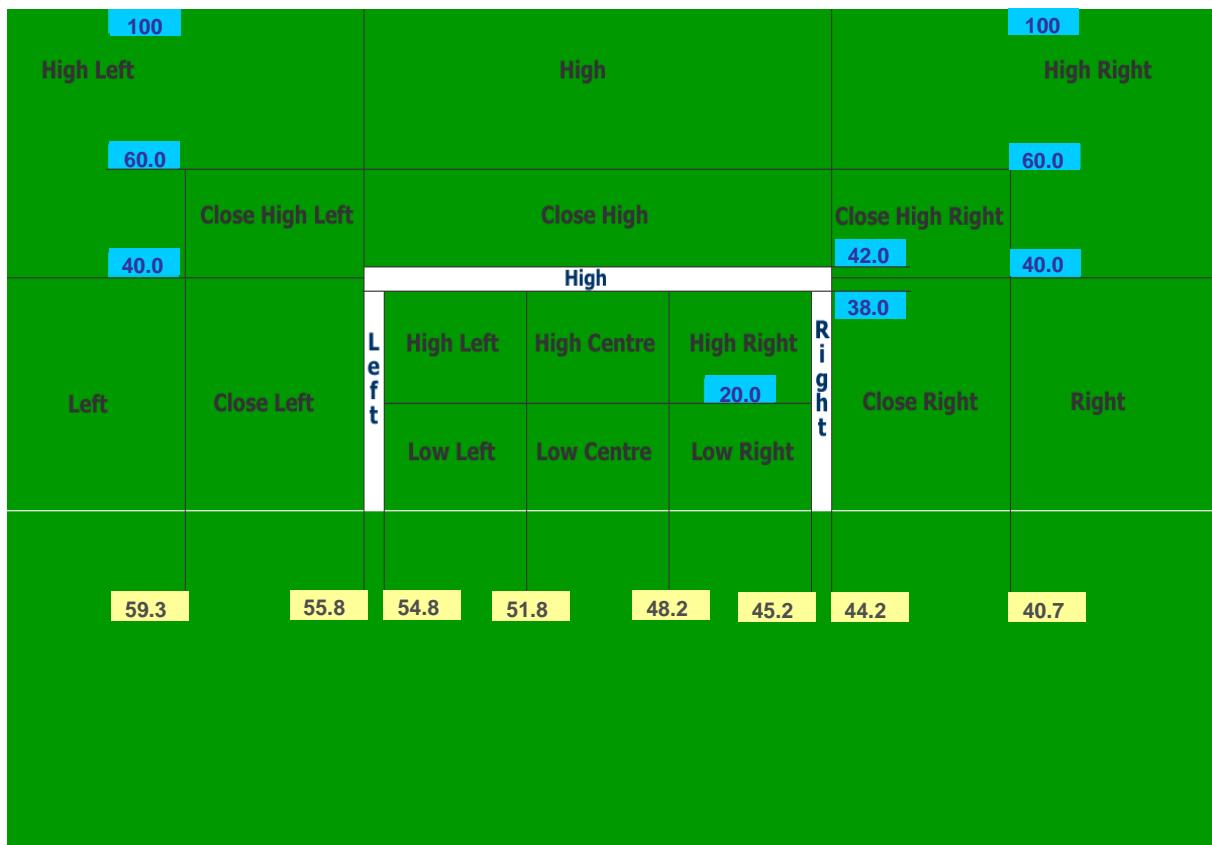
Period	Period_id
Pre game	15
Pre match	16
Post game	14
First half	1
First half ends	10
Second half	2
Second half ends	11
First period of extra time	3
First period of extra time ends	12
Second period of extra time	4
Second period of extra time ends	13
Penalty shoot out	5

Appendix 11 – pitch co-ordinates and direction of play

This is based on the direction of attack always being from left to right on the x-axis, regardless of the team or period of the game, the defending goal line is always where x=0 and the attacking where x=100. All measurements for events given in the feed should therefore be taken in relation to percentages.



Appendix 12 – goalmouth co-ordinates



EVENT - Goal, Attempt Saved:

Qualifier	end_y	end_z
Low Left	(51.8 <= end_y <= 54.8)	(0 <= end_z <= 20)
High Left	(51.8 <= end_y <= 54.8)	(20 <= end_z <= 38)
Low Centre	(48.2 <= end_y <= 51.8)	(0 <= end_z <= 20)
High Centre	(48.2 <= end_y <= 51.8)	(20 <= end_z <= 38)
Low Right	(45.2 <= end_y <= 48.2)	(0 <= end_z <= 20)
High Right	(45.2 <= end_y <= 48.2)	(20 <= end_z <= 38)

EVENT - Post:

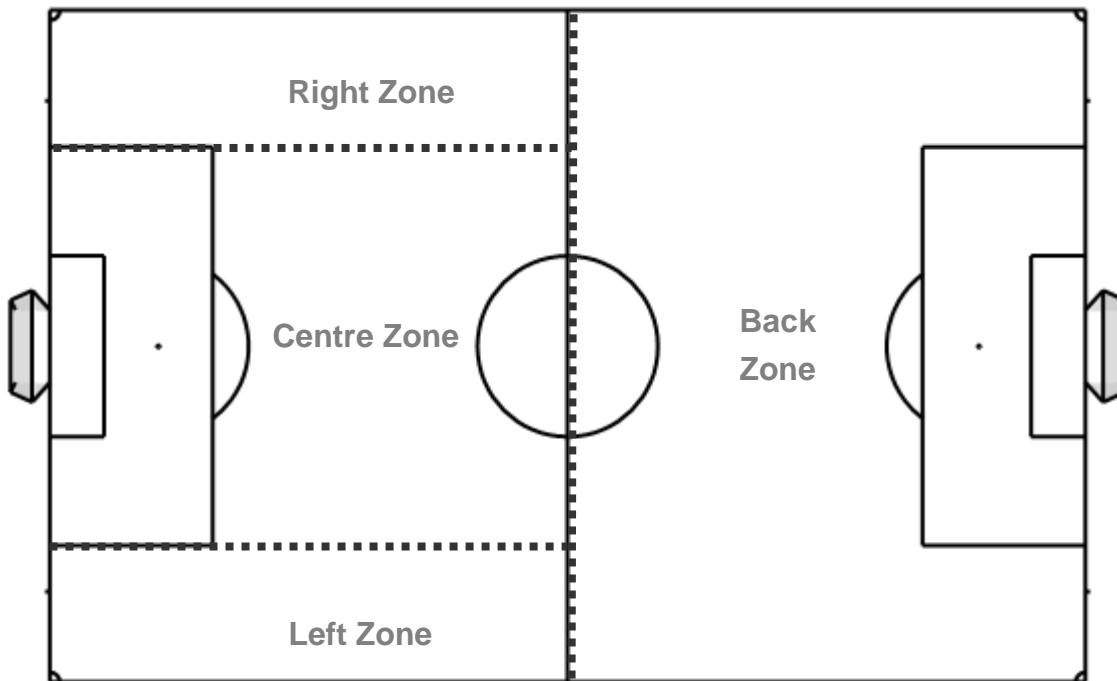
Qualifier	end_y	end_z
Left	(54.8 <= end_y <= 55.8)	(0 <= end_z <= 38)
High	(44.2 <= end_y <= 55.8)	(38 <= end_z <= 42)
Right	(44.2 <= end_y <= 45.2)	(0 <= end_z <= 38)

EVENT - Miss:

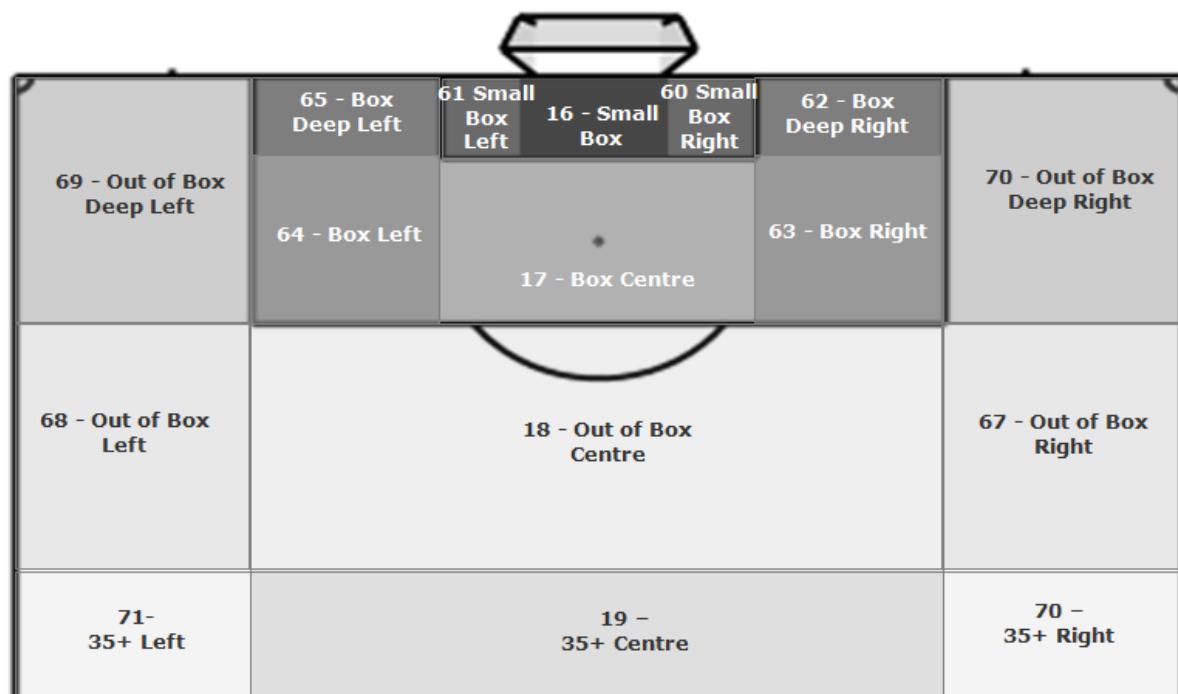
Qualifier	end_y	end_z
Close Left	(55.8 <= end_y <= 59.3)	(0 <= end_z <= 40)
Close High Left	(55.8 <= end_y <= 59.3)	(40 <= end_z <= 60)
Close Right	(40.7 <= end_y <= 44.2)	(0 <= end_z <= 40)
Close High Right	(40.7 <= end_y <= 44.2)	(40 <= end_z <= 60)
Close High	(44.2 <= end_y <= 55.8)	(42 <= end_z <= 60)
Left	(59.3 <= end_y <= 100)	(0 <= end_z <= 40)
Right	(0 <= end_y <= 40.7)	(0 <= end_z <= 40)
HighLeft	(55.8 <= end_y <= 100)	(60 <= end_z <= 100)
HighRight	(0 <= end_y <= 44.2)	(60 <= end_z <= 100)
High	(44.2 <= end_y <= 55.8)	(60 <= end_z <= 100)

Appendix 13 – pitch zones

When Qualifier 56 is shown with an event it will also display a value which can be right, left, centre or back. The diagram below highlights what these zones are on the pitch.



Qualifiers 16, 17, 18, 19 and 60 - 71 refer to areas of the pitch. The below diagram illustrates where these zones are.



Appendix 14 - playing positions

When Event 34 is shown it will include Qualifier 30, 130 and 131.

- 130 will indicate the formation the team will be playing in
- 30 will list the players
- 131 will list the playing positions

The order that the players are listed in qualifier 30 will be the same order as the positions listed on qualifier 131. For example:

```
<Q id="1998281501" qualifier_id="130" value="8" />

<Q id="193244804" qualifier_id="30" value="59936, 37748, 42427, 8758,
17127, 51507, 20467, 21091, 12297, 41792, 43274, 8597, 57214, 81880, 37096,
13227, 56861, 15675" />

<Q id="280405493" qualifier_id="131" value="1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
11, 0, 0, 0, 0, 0, 0, 0" />
```

With regards to the qualifier id 130 (ie formation), this can be interpreted as the team playing in a 4231 formation which is depicted below from formation number 8.

For line ups using qualifier id's 130 and 131 in conjunction, you can see for example that position 1 will be player 59936 and position 7 will be 20467. Where position = 0, this relates to a substitute for which we do not current record the exact playing position.

The diagrams overleaf show all of the possible formation numbers and the layout of players in this formation – *note that team formation #1 is not used*.

Player Layout

The players are laid out in right to left, defense to forwards. Therefore if a team has been assigned a 442 formation; the player tagged 2 will be right back, 3 right centre back, 4 left centre back, 5 left back, 6 right midfield, 7 right centre midfield, 8 left centre midfield, 9 left midfield, 10 right centre forward, 11 left centre forward.

Team Formation 2 – 442:

	1	
2	5	6
7	4	8
	10	9
		3
		11

Team Formation 3 – 41212 (Diamond):

	1	
2	5	6
	4	
7		11
	8	
	10	9
		3

Team Formation 4 – 433:

	1	
2	5	6
7	4	8
10	9	11
		3

Team Formation 5 – 451:

	1	
2	5	6
7	4	8
	10	11
	9	

Team Formation 6 – 4411:

	1			
2	5	6	3	
7	4	8	11	
		10		
			9	

Team Formation 7 – 4141:

	1			
2	5	6	3	
		4		
7	8	10	11	
		9		

Team Formation 8 – 4231:

	1			
2	5	6	3	
		8	4	
	7	10	11	
		9		

Team Formation 9 – 4321:

	1			
2	5	6	3	
	8	4	7	
	10	11		
		9		

Team Formation 10 – 532:

	1			
2	6	5	4	3
	7	8	11	
	10	9		

Team Formation 11 – 541:

		1						
2		6			5		4	
		7		8		10		11
					9			

Team Formation 12 – 352:

		1						
		6			5		4	
2		7			8		3	
				11				
			10		9			

Team Formation 13 – 343:

		1						
		6			5		4	
2		7			8		3	
		10			9		11	

Team Formation 14 – 31312

		1						
		6			5		7	
		4						
		2			8		3	
		10						
		9			11			

Team Formation 15 – 4222:

		1								
2		5			6		3			
		4			7					
		8			11					
		10			9					

Team Formation 16 – 3511:

			1			
		6	5		4	
2		7		8		3
			11			
			10			
			9			

Team Formation 17 – 3421:

			1			
		6	5		4	
2		7		8		3
			10	9		
			11			

Team Formation 18 – 3412:

			1			
		6	5		4	
2		7		8		3
			9			
			10	11		