

# StatsBomb API Events Structure and Data Specification v8.0.0

[StatsBomb API - last updated 13 April 2023]

This document describes the API used to request events for a match to which the user has licensed access. Credentials need to be supplied as described in the general API notes.

## ***Summary of Changes for API v8.0.0***

1. Added following fields to shot event map:
  - a. shot\_execution\_xg
  - b. shot\_execution\_xg\_uplift
  - c. gk\_positioning\_xg\_suppression
  - d. gk\_shot\_stopping\_xg\_suppression
2. Renamed statsbomb\_xg2 to gk\_save\_difficulty\_xg
3. Added following fields to pass event map:
  - a. pass\_cluster\_id
  - b. pass\_cluster\_label
  - c. pass\_cluster\_probability
  - d. pass\_success\_probability

## **Table of Contents**

Summary of Changes for API v8.0.0	1
Accessing the API	1
Data Format	2

Response	3
Event Type Objects	10
Appendix	1
Appendix 1: Tactical Positions Guide:	25
Appendix 2: Locations	26
Pitch Coordinates - Coordinates specified as (x, y).	26
Goal Coordinates - Coordinates specified as (x, y, z)	26
Appendix 3: Shot Freeze Frame Objects	26
Appendix 4: Tactics Lineups Objects	26
Appendix 5: Cutback	29
Appendix 6: Cross	29
Appendix 7: Pressure	30
Appendix 8: Competition Stages	32
Appendix 9: Data Version Change Log	33
Appendix 10: Shot Fidelity Version Change Log	36
Appendix 11: OBV values	36
Appendix 12: Cluster labels	37

## Accessing the API

The updated API can be accessed by making a request to <https://data.statsbombservices.com/api/v8/events/?> . The question mark should be replaced by the desired match ID.

Previous versions of the API can be accessed by making a request to <https://data.statsbombservices.com/api/v1/events/?>. Please see our data website for the documentation of previous API versions.

An R package has been written for users to conveniently access the API and clean the data. The R package is available at <https://github.com/statsbomb/StatsBombR>.

### **Data Format**

The API data is read in JSON format, where each observation is one, unique event, with all variable values corresponding to that event and that event type included. Unlike the CSV format, JSON format allows for nested data frames, and thus, observations will never be replicated.

## Response

The response will be in JSON format. The response is an array containing event information for both teams. Some elements have either child elements (normally a name/id pair), or child arrays (these are detailed in the appendices).

Column	Type	Child (/s)	Child (/s) Type	Description	Values	Value Description
id	uuid			The unique identifier for each event	e.g. "0052d1b5-e2b0-4629-bb ea-c18c884ab103"	
index	integer			Sequence notation for the ordering of events within each match.	e.g. 1-# of events	
period	integer			The part of the match the timestamp relates to (1 = first half, 2 = second half).	1	1st Half
					2	2nd Half
					3	3rd Period
					4	4th Period
					5	Penalty Shootout
timestamp	timestamp			Time in the match the event takes place, recorded to the millisecond.	e.g., 00:00:06.293	
minute	integer			The minutes on the clock at the time of this event. Resets to 45 at half-time, 90 at the start of extra time etc.	e.g., 40	
second	integer			The second part of the timestamp	e.g., 15	
type	object	id / name	integer / text	Id / name of the event type.	42 / "Ball Receipt"	The receipt or intended receipt of a pass.
					2 / "Ball Recovery"	An attempt to recover a loose ball
					3 / "Dispossessed"	Player loses ball to an opponent as a result of being

						tackled by a defender without attempting a dribble
					4 / "Duel"	A duel is an 50-50 contest between two players of opposing sides in the match.
					5 / "Camera On*"	Signals the stop of the camera to capture gameplay for a replay/video cut.
					6 / "Block"	Blocking the ball by standing in its path.
					8 / "Offside"	Offside infringement. Cases resulting from a shot or clearance (non-pass). For passes resulting in an offside check pass outcomes section.
					9 / "Clearance"	Action by a defending player to clear the danger without an intention to deliver it to a teammate.
					10 / "Interception"	Preventing an opponent's pass from reaching their teammates by moving to the passing lane/reacting to intercept it.
					14 / "Dribble"	An attempt by a player to beat an opponent
					16 / "Shot"	An attempt to score a goal, made with any (legal) part of the body.
					17 / "Pressure"	Applying pressure to an opposing player who's receiving, carrying or releasing the ball.
					18 / "Half Start*"	Signals referee whistle to start a match period.
					19 / "Substitution"	
					20 / "Own Goal Against"	An own goal scored against the team.

					21 / "Foul Won"	A foul won is defined as where a player wins a free-kick or penalty for their team after being fouled by an opposing player.
					22 / "Foul Committed"	Any infringement that is penalised as foul play by a referee. Offside are not tagged as a foul committed.
					23 / "Goal Keeper"	Actions that can be done by the goalkeeper.
					24 / "Bad Behaviour"	When a player receives a card due to an infringement outside of play.
					25 / "Own Goal For"	An own goal scored for the team.
					26 / "Player On"	A player returns to the pitch after a Player Off event.
					27 / "Player Off"	A player goes/ is carried out of the pitch without a substitution.
					28 / "Shield"	Player shields ball going out of bounds to prevent opponent from keeping it in play.
					30 / "Pass"	Ball is passed between teammates.
					33 / "50/50"	2 players challenging to recover a loose ball.
					34 / "Half End*"	Signals the referee whistle to finish a match part.
					35 / "Starting XI"	Indicates the players in the starting 11, their position and the team's formation.
					36 / "Tactical Shift"	Indicates a tactical shift made by the team, shows the

						players' new positions and the team's new formation.
					37 / "Error"	When a player is judged to make an on-the-ball mistake that leads to a shot on goal.
					38 / "Miscontrol"	Player loses ball due to bad touch
					39 / "Dribbled Past"	Player is dribbled past by an opponent.
					40 / "Injury Stoppage"	A stop in play due to an injury.
					41 / "Referee Ball-Drop"	Referee drops the ball to continue the game after an injury stoppage.
					43 / "Carry"	A player controls the ball at their feet while moving or standing still.
possession	integer			Indicates the current unique possession in the game. A single possession denotes a period of play in which the ball is in play and a single team is in control of the ball.	e.g., 1 - # of unique possessions	New possession are triggered after a team demonstrate they've established control of the ball. A new possession can begin even if the same team has possession of the ball for example, a blocked pass goes out for a throw in for the same team, this would be a new possession for the same attacking team.
possession_team	object	id	integer	The ID of the team that started this possession in control of the ball. Note that this will appear even on opposition events like tackles attempted during the possession.	e.g., 1 / "Arsenal"	
play_pattern	object	id / name	integer / text	Id /name of the play pattern relevant to this event.	1 / Regular Play	The event was not part of any of the following play_patterns

					2 / "From Corner"	The event was part of the passage of play following a corner.
					3 / "From Free Kick"	The event was part of the passage of play following a free-kick.
					4 / "From Throw In"	The event was part of the passage of play following a throw-in.
					5 / "Other"	
					6 / "From Counter"	<p>The event was part of a counter attack: The possession started with an open play turnover outside the counter-attacking team's final third.</p> <p>The possession was at least 75% direct towards goal (as measured by our possession chain metrics)</p> <p>The counterattack travelled at least 18 yards towards goal. This definition is not part of collection and is derived from the logic above.</p>
					7 / "From Goal Kick"	The event was part of the passage of play following a goal kick.
					8 / "From Keeper"	The event was part of the passage of play following a keeper distribution.
					9 / "From Kick Off"	The event was part of the passage of play following the kick off.
team	object	id / name	integer	Id / Name of the team this event relates to. Team object will only display if the	e.g., 1 / "Arsenal"	



				event is tied to a specific team.		
player	object	id / name	integer / text	Id / Name of the player this event relates to (player object will only display if the event is tied to a specific player).	e.g., 5079 / "Zlatan Ibrahimovic"	
position	object	id / name	integer / text	Id / Name of the position the player was in at the time of this event..	e.g., 1 / "Goal Keeper"	See Appendix 1 below for more information.
location	array [x,y]			Array containing two integer values. These are the x and y coordinates of the event (this only displays if the event has pitch coordinates).	e.g., the center of the field is (60,40)	See Appendix 2 below for more information.
duration	decimal			If relevant, the length in seconds the event lasted.	Time in seconds.	
under_pressure	boolean			The action was performed while being pressured by an opponent.	TRUE	See Appendix 7 for more information on pressure.
off_camera	boolean			The event occurred while the camera was off.	FALSE, TRUE	Thus, data accuracy is not guaranteed and information is logically inferred by collectors.
out	boolean			Added if the outcome of the event is the ball going out of bounds.	TRUE	
related_events	array[uuid,uuid,...]			A comma separated list of the Ids of related events. For example, a shot might be related to the Goalkeeper event, and a Block Event. The corresponding events will have the Id of the shot in their related_events column.	e.g., "2b7d06c7-9bcb-4bbf-a6e5-08e54e1303ac" or ("2b7d06c7-9bcb-4bbf-a6e5-08e54e1303ac", "03b001b6-bf44-4691-ae47-e279f5a9b38c")	
tactics	object	formation	text	For events of type (Starting XI or Tactical Shift), the "tactics" object is added.	e.g., 343	e.g., three defenders four midfielders and three strikers.

				The formation item describes the formation being used.		
		lineup	array	For events of type (Starting XI or Tactical Shift), the "tactics" object is added. The lineup item describes the players and their positions.	See Appendix 4 Below for more information.	
obv_for_after	decimal			The likelihood (probability) of scoring within a possession chain after the event.	e.g. 0.02	See Appendix 11 for more information on OBV.
obv_for_before	decimal			The likelihood (probability) of scoring within a possession chain before the event.	e.g. 0.02	See Appendix 11 for more information on OBV.
obv_for_net	decimal			The net change in likelihood (probability) of scoring within a possession chain as a result of the event.	e.g. 0.02	See Appendix 11 for more information on OBV.
obv_against_after	decimal			The likelihood (probability) of conceding in the next possession chain after the event.	e.g. 0.02	See Appendix 11 for more information on OBV.
obv_against_before	decimal			The likelihood (probability) of conceding in the next possession chain before the event.	e.g. 0.02	See Appendix 11 for more information on OBV.
obv_against_net	decimal			The net change in likelihood (probability) of conceding in the next possession chain as a result of the event.	e.g. 0.02	See Appendix 11 for more information on OBV.
obv_total_net	decimal			The net change in expected goal difference (change in likelihood of scoring - change in likelihood of conceding) over the next 2	e.g. 0.02	See Appendix 11 for more information on OBV.

				possession chains as a result of the event.		
--	--	--	--	---	--	--

### Event Type Objects

When an event is of a type with additional details, they are included nested inside an object named after that event type. For example, an event of type Shot will have a nested data frame with additional variables describing that event type. Below is a list of the nested data frames sorted in alphabetical order and the variables that they contain.

Event Type (Nested Data Frame)	Column	Type	Child (/s)	Child (/s) Type	Description	Values (/s)	Value (/s) Description
50-50	outcome	object	id / name	integer / text	ID/ Name of the outcome of the 50-50 challenge.	108 / "Won"	The player wins the 50/50 contest and regain possession
						109 / "Lost"	The player loses the 50/50 contest
						147 / "Success To Team"	The player wins the 50/50 contest and knocks the ball to their team's possession
						148 / "Success To Opposition"	The player wins the 50/50 contest but knocks the ball to a opponent's possession
	counterpress	Boolean			Pressing actions within 5 seconds of an open play turnover.	TRUE	
Bad Behaviour	card	object	id / name	integer / text	Id / Name for the attribute option specifying the Card.	7 / "Yellow Card"	
						6 / "Second Yellow"	
						5 / "Red Card"	
Ball Receipt	outcome	object	id / name	integer / text	Id / Name for the attribute option specifying the outcome of the ball receipt.	9 / "Incomplete"	

Ball Recovery	offensive	boolean			Added if the recovery was offensive	TRUE	Recovered ball lost by a teammate off bad touch or dribble
	recovery_failure	boolean			Added if the recovery was a failure.	TRUE	Ball is lost while attempting to recover a loose ball
Block	deflection	boolean			Added if the block was a deflection.	TRUE	Block that did not reverse or strongly redirect the ball's trajectory
	offensive	boolean			Added if the block was offensive.	TRUE	
	save_block	boolean			Added if the block saved a shot.	TRUE	A block of a shot that was definitely going to be on target by an outfield player
	counterpress	Boolean			Pressing actions within 5 seconds of an open play turnover.	TRUE	
Carry	end_location	Array [x, y]			Array containing two integer values. These are the x and y coordinates at which the carry ends.	e.g., (100,45)	See Appendix 2 for more information on location coordinates.
Clearance	aerial_won	boolean			Added if a clearance event was an aerial.	TRUE	Clearance that was also an aerial duel won
	body_part	object	id / name	integer / text	ID / Name of the body part used to shoot.	37 / "Head"	Clearance attempted with head
						38 / "Left Foot"	Clearance attempted with the left foot
						70 / "Other"	Other body parts (i.e knee, chest, etc)
						40 / "Right Foot"	Clearance attempted with right foot
Dribble	Overrun	boolean			Added when a dribble goes past the original defender into the possession of another player	TRUE	
	Nutmeg	boolean			Added when the dribble went through an opposing players legs.		

	outcome	object	id / name	integer / text	Id / Name for the attribute option specifying the outcome of the dribble.	8 / "Complete"	Dribble attempt was successful
						9 / "Incomplete"	Player was unable to complete the act of attempting a dribble
	No Touch	boolean			If the player attempted to do the dribble by passing the ball past the opponent instead of receiving it.	TRUE	
Dribbled Past	counterpress	Boolean			Pressing actions within 5 seconds of an open play turnover.	TRUE	
Duel	counterpress	Boolean			Pressing actions within 5 seconds of an open play turnover.	TRUE	
	type	object	id / name	integer / text	Id / Name for the attribute value of the type of duel	10 / "Aerial Lost"	Challenging for an aerial duel and not winning the ball
						11 / "Tackle"	Dispossessing opposing team player
	outcome	object	id / name	integer / text	Id / Name for the attribute option specifying the outcome of the duel.	4 / "Won"	A tackle that ended up in possession of the tackler
						13 / "Lost In Play"	A tackle that knocked the ball to an opponent
						14 / "Lost Out"	A tackle that knocked the ball out of bounds in favor of opposition
						15 / "Success"	
						16 / "Success In Play"	A tackle that knocked the ball to a teammate
						17 / "Success Out"	A tackle that knocked the ball out of bounds in favor of tackler's team
Foul Committed	counterpress	Boolean			Pressing actions within 5 seconds of an open play turnover.	TRUE	
	offensive	boolean			Added if the foul was committed while in possession of the ball.	TRUE	

	type	object	id / name	integer / text	ID / Name for the attribute value of the foul committed.	19 / "6 Seconds"	Foul called due to 6 second infringement
						20 / "Backpass Pick"	Foul called due to back-pass pick up infringement
						21 / "Dangerous Play"	Foul called due to dangerous play
						22 / "Dive"	Foul committed due to simulation
						23 / "Foul Out"	Foul called due to foul out infringement
						24 / "Handball"	Foul called due to handball infringement
	advantage	boolean			Added if play continued (referee called advantage)	TRUE	Foul committed but play was waved on
	penalty	boolean			Added if a penalty was awarded.	TRUE	A foul committed that resulted in a penalty shot
	card	object	id / name	integer / text	Id / Name for the attribute option specifying the card.	7 / "Yellow Card"	
						6 / "Second Yellow"	
						5 / "Red Card"	
Foul Won	defensive	boolean			Added if the foul was won when out of possession.	TRUE	Winning a foul when out of possession
	advantage	boolean			Added if play continued (referee called advantage)	TRUE	Winning a foul that was not called due to advantage played
	penalty	boolean			Added if a penalty was awarded.	TRUE	Winning a penalty
Goalkeeper	position	object	id / name	integer / text	Id / Name for the attribute option of goalkeeper's positioning before a shot.	42 / "Moving"	Keeper was moving when the shot was taken
						43 / "Prone"	Keeper was on the ground when the shot was taken
						44 / "Set"	Keeper was stationary when the shot was taken
	technique	object	id / name	integer / text	Id/ Name for the attribute option specifying the goalkeeper technique used.	45 / "Diving"	Keeper left his feet in order to make the save
						46 / "Standing"	Keeper made the save from a standing position
	body_part	object	id / name	integer / text	Id / Name for the attribute option specifying the body	35 / "Both Hands"	Save with both hands

					part used during this goalkeeper action.	36 / "Chest"	Save with chest
						37 / "Head"	Save with head
	type	object	id / name	integer / text	Id / Name for the attribute option specifying the type of goalkeeper event. (Every shot will have a related goalkeeper event. If a goal is not conceded or a save is not made, the goalkeeper type will be "Shot Faced").	38 / "Left Foot"	Save was made with left foot
						39 / "Left Hand"	Save with left hand
						40 / "Right Foot"	Save was made with right foot
						41 / "Right Hand"	Save with right hand
						25 / "Collected"	Keeper coming out to collect a ball
						26 / "Goal Conceded"	Goalkeeper concedes a goal
						27 / "Keeper Sweeper"	When keeper comes off his line and/or out of his box to clear the ball
						28 / "Penalty Conceded"	Goalkeeper concedes a goal from a penalty kick
						29 / "Penalty Saved"	Save from a penalty kick
						30 / "Punch"	Keeper punch away (similar to clear)
						31 / "Save"	Keeper save from a non-shot
						32 / "Shot Faced"	A shot faced that did not lead to a save or goal conceded
						33 / "Shot Saved"	Keeper save from opposing team shot
						34 / "Smother"	Equivalent to a tackle for an outfield player, keeper coming out to dispossess a player
						113 / "Shot Saved Off T"	Keeper save from opposing team shot that was going off target
						114 / "Shot Saved To Post"	A shot saved by the goalkeeper that hits the post
						110 / "Saved To Post"	A save by the goalkeeper that hits the post
						109 / "Penalty Saved To Post"	A penalty saved by the goalkeeper that hits the post

	outcome	object	id / name	integer / text		47 / "Claim"	Keeper sweeper action where keeper collects the ball
						48 / "Clear"	Keeper sweeper action where keeper clears the ball
						49 / "Collected Twice"	Keeper collected the ball in multiple tries after fumbling first collect
						50 / "Fail"	Unsuccessful action
						51 / "In Play"	Goalkeeper save where the shot is parried back into play
						52 / "In Play Danger"	Goalkeeper save where shot is parried to opposing team player
						53 / "In Play Safe"	Goalkeeper save where shot is parried to teammate
						55 / "No Touch"	Goal conceded without keeper touching the ball
						56 / "Saved Twice"	Keeper made the save in multiple tries after fumbling the first save
						15 / "Success"	Successful action for collect, parried to teammate in smother
						58 / "Touched In"	Goal conceded despite keeper touching the ball
						59 / "Touched Out"	Keeper touched the ball out of bounds
						4 / "Won"	Retained possession
						16 / "Success In Play"	A smother that knocked the ball to a teammate
						17 / "Success Out"	A smother that knocked the ball out of bounds in favor of tackler's team
						13 / "Lost In Play"	A smother that knocked the ball to an opponent
						14 / "Lost Out"	A smother that knocked the ball out of bounds in favor of opposition



						117 / "Punched Out"	The keeper punches the ball out of boundaries
Half End	Early Video End	Boolean			Added if the match video wasn't complete and it ended before the period final whistle	TRUE	
	Match Suspended	Boolean			Referee decides to end or postpone the match	TRUE	
Half Start	Late Video Start	Boolean			Added if the match video wasn't complete and started after Kick Off	TRUE	
Injury Stoppage	in_chain	boolean			Added if the ball was in the injured player's team's possession before the stoppage began.	TRUE	
Interception	outcome	object	id / name	integer / text	Id / Name for the attribute option specifying the outcome of the interception	1 / "Lost"	
						13 / "Lost In Play"	An interception that knocked the ball to an opponent
						14 / "Lost Out"	An interception that knocked the ball out of bounds in favor of opposition
						15 / "Success"	
						16 / "Success In Play"	An interception that knocked the ball to a teammate
						17 / "Success Out"	An interception that knocked the ball out of bounds in favor of tackler's team
						4 / "Won"	An interception that ended up in possession of the tackler
Miscontrol	aerial_won	boolean			Added if a miscontrol event was an aerial.	TRUE	
Pass	recipient	object	id / name	integer / text	Id / Name specifying the player id of the recipient of the pass, or for whom an incomplete pass was intended.	e.g., 2934 / "Érik Lamela"	

	length	decimal			The length of the pass in yards.	e.g., 16.03	The length in yards of the pass, from its origin to its destination.
	angle	decimal			The angle of the pass in radians, with 0 pointing straight ahead, positive values between 0 and $\pi$ indicating an angle clockwise, and negative values between 0 and $-\pi$ representing an angle anti-clockwise.	e.g., -2.49	The angle in radians of the pass, calculated clockwise from 0 representing straight ahead, to $\pi$ meaning straight backwards.
	aerial_won	boolean			Added if a pass event was an aerial.	TRUE	
	height	object	id / name	integer / text	Id / Name specifying the height of the pass.	1 / "Ground Pass"	Ball doesn't come off the ground.
						2 / "Low Pass"	Ball comes off the ground but is under shoulder level at peak height.
						3 / "High Pass"	Ball goes above shoulder level at peak height.
	end_location	array [x,y]			Array containing two integer values. These are the x and y coordinates at which the pass ended.	e.g., (100,45)	See Appendix 2 for more information on location coordinates.
	assisted_shot_id	uuid			Reference to the shot this pass assisted.	e.g., "2b7d06c7-9bcb-4bbf-a6e5-08e54e1303ac"	
	backheel	boolean			Added if the pass was made by using a backheel.	TRUE	
	deflected	boolean			Added if the pass was deflected	TRUE	Pass was deflected, can occur on complete and incomplete passes.
	miscommunication	boolean			Added if the pass was a miscommunication.	TRUE	Pass was accurate but receiving player misread the pass OR the run from the receiving player was correct and passer played in his previous position
	cross	boolean			Added if the pass was a cross.	TRUE	Whether or not the pass was a cross. The calculation used to

							mark crosses is detailed in Appendix 6.
	cut-back	boolean			Added if the pass was a cut-back (ball passed low backwards, within the opposition's penalty box)	TRUE	For more information on how cut-back's are depicted see Appendix 5
	switch	boolean			Added if the pass was a switch (ball transitioned at least 50% of the pitch vertically).	TRUE	Whether or not the passer switched the ball to the other side of the pitch. A switch is any pass that travels more than 40 yards of the width of the pitch.
	shot_assist	boolean			Added if the pass was an assist to a shot (that did not score a goal).	TRUE	
	goal_assist	boolean			Added if the pass was an assist to a goal.	TRUE	
	body_part	object	id / name	integer / text	Id / Name of the body part used to make this pass.	68 / "Drop Kick"	Pass is a keeper drop kick
						37 / "Head"	Pass with head
						69 / "Keeper Arm"	Pass thrown from keepers hands
						38 / "Left Foot"	Pass with left foot
						70 / "Other"	Other body part (chest,back, etc.)
						40 / "Right Foot"	Pass with right foot
						106 / "No Touch"	A player deliberately let the pass go past him instead of receiving it to deliver it to a teammate behind him. (Also known as a "dummy").
	type	object	id / name	integer / text	Id / Name for the attribute option specifying the type of pass.	61 / "Corner"	A pass from a corner kick
						62 / "Free Kick"	A pass from a free kick
						63 / "Goal Kick"	A pass from a goal kick
						64 / "Interception"	One touch pass off an interception
						65 / "Kick Off"	A pass from a kick off at the beginning of a match or after scoring

						66 / "Recovery"	One touch pass off a loose ball recovery
						67 / "Throw-in"	A pass from a throw-in
	outcome	object	id / name	integer / text	ID / Name of the outcome of the pass.	9 / "Incomplete"	Ball does not reach a teammate and is still in play
						74 / "Injury Clearance"	Ball is played out of bounds to stop play for an injury
						75 / "Out"	Ball goes out of bounds
						76 / "Pass Offside"	Ball reaches teammate but pass is judged offside
						77 / "Unknown"	Outcome is unknown (i.e. foul was called while in mid-flight)
	Technique	object	id / name	integer / text	ID / Name of the technique of the pass.	104 / "Inswinging"	For inswinging high/low corner kicks.
						105 / "Outswinging"	For outswinging high/low corner kicks.
						107 / "Straight"	For neither inswinging nor outswinging corner kicks.
						108 / "Through Ball"	Pass cuts last line of defence
	pass_cluster_id	integer			A numerical identifier that indicates which of the 60 distinct clusters a pass is most associated with.	e.g., 20	
	pass_cluster_label	string			A text description of the cluster most strongly associated with the pass.		See Appendix 12 for more information on cluster labels
	pass_cluster_probability	float			The probability that the pass belongs to the cluster described in the pass_cluster_label and pass_cluster_id.	e.g., 0.30	
	pass_success_probability	float			The estimated likelihood of an attempted pass being completed successfully based	e.g., 0.20	

					on the location of the pitch and context the pass is attempted under, and location of the target location of the pass.		
Player Off	Permanent	Boolean			Added if the player left the game permanently. For scenarios where no subs are left but the player cannot return to pitch due to injury	TRUE	
Pressure	counterpress	Boolean			Pressing actions within 5 seconds of an open play turnover.	TRUE	
Shot	key_pass_id	uuid				e.g., "2985a109-390e-49fa-8d92-9b1b4e6ea2fb"	
	end_location	array [x,y] or [x,y,z]				e.g., (120, 50) or (120, 32.5, 1.2)	For more information on the location specifications, see Appendix 2.
	aerial_won	boolean			Added if the shot was an aerial won	TRUE	An aerial duel was contested for the shot
	follows_dribble	boolean			Added if the shot followed a dribble	TRUE	Whether or not this shot comes after a successful dribble by the shooter.
	first_time	boolean			Added if the shot was first touch.	TRUE	Player's first touch
	freeze_frame	array	(see Appendix 3 for more documentation)		Each shot includes an object called freeze_frame which is an array containing information about relevant players at the time of the shot. Each freeze_frame object is a data frame with a row for each player including their location, team, id, name and position id and name.	Data from the JSON format will have a data frame nested within each shot event.	See Appendix 3 for more information on freeze frame objects.

	open_goal	boolean			Added if the shot was taken with an open goal.	TRUE	
	one_on_one	boolean			Added if the shot was a one-on-one between shot-taker and opposition goalkeeper.	TRUE	
	statsbomb_xg	float			The StatsBomb expected goals value calculated for the shot. The likelihood of scoring from the shot situation (including factors such as the location of goalkeeper and blockers), not considering shot execution characteristics. It is a direct measure of how dangerous a shot situation is.	e.g., 0.15	
	gk_save_difficulty_xg	float			The likelihood of a goalkeeper conceding a goal. Only applies to shots that were on target and not blocked. This model takes into account the shot placement and velocity, as well as the goalkeeper position. This replaces the older statsbomb_xg2 metric.	e.g., 0.15	
	shot_execution_xg	float			The likelihood of scoring following the execution of the shot. This incorporates shot placement and velocity data along with the other statsbomb_xg features.	e.g., 0.15	
	shot_execution_xg_uplift	float			A measure of how much the shot execution characteristics (placement and velocity) improved the goal scoring chances from the chance_quality. Measured as the difference between	e.g., 0.15	

					shot_execution_xg and statsbomb_xg. Can be negative if a shot is misplaced, is very weak, or is shot straight at the keeper in cases where this causes a decrease in goal-scoring likelihood.		
	gk_positioning_xg_suppression	float			The estimated goal-scoring threat prevented from goalkeeper positioning relative to the average goalkeeper positioning.	e.g., 0.15	
	gk_shot_stopping_xg_suppression	float			It's the number of goals prevented above expectation by goalkeepers. It's a measure of how much to reward or penalise the goalkeeper based on the outcome and how hard the shot was to stop (likelihood of goal).	e.g., 0.15	
	deflected	boolean			Added if the shot was deflected	TRUE	Shot was redirected by another player's touch.
	technique	object	id / name	integer / text	ID / Name of the technique used for the shot.	89 / "Backheel"	A shot that was taken with the heel
						90 / "Diving Header"	Shot attempted with header while player diving in front of him to reach the ball
						91 / "Half Volley"	Contact was made off the ground and after a bounce
						92 / "Lob"	A shot that had a high arc trajectory in order to pass over the opposition player
						93 / "Normal"	A shot that does not fall into any other technique
						94 / "Overhead Kick"	Player's back was to goal when taking the shot

						95 / "Volley"	The ball never touched the ground prior to the shot
	shot_shot_assist	boolean			Added if the shot was an assist to a shot (that did not score a goal).	TRUE	
	shot_goal_assist	boolean			Added if the shot was an assist to a goal.	TRUE	
	body_part	object	id / name	integer / text	ID / Name of the body part used to shoot.	37 / "Head"	Shot attempted with head
						38 / "Left Foot"	Shot attempted with the left foot
						70 / "Other"	Other body parts (i.e knee, chest, etc)
						40 / "Right Foot"	Shot attempted with right foot
	type	object	id / name	integer / text	Id / Name for the attribute option specifying the type of shot.	61 / "Corner"	Shot direct from a corner kick
						62 / "Free Kick"	Shot is from a direct free kick
						87 / "Open Play"	Shot is not directly from a set-piece
						88 / "Penalty"	Shot is a penalty kick
						65 / "Kick Off"	Shot directly from kick off
	outcome	object	id / name	integer / text	Id / Name for the attribute option specifying the outcome of the shot.	96 / "Blocked"	A shot that was stopped from continuing by a defender
						97 / "Goal"	A shot that was deemed to cross the goal-line by officials
						98 / "Off T"	A shot that's initial trajectory ended outside the posts
						99 / "Post"	A shot that hit one of the three posts
						100 / "Saved"	A shot that was saved by the opposing team's keeper
						101 / "Wayward"	An unthreatening shot that was way off target or did not have enough power to reach the goal line (or a miskick where the player didn't make contact with the ball)



						115 / "Saved Off T"	A shot that was saved by the goalkeeper but was not on target.
						116 / "Saved To Post"	If the keeper saves the shot and it bounces off the goal frame
Substitution	replacement	object	id / name	integer / text	For a substitution, the id / name of the player coming on the pitch. The player details (main event) describe the player coming off.	e.g., 3049 / "Aaron Ramsey"	
	outcome	object	id / name	integer / text	Id / Name for the attribute option specifying the type of substitution.	102 / "Injury"	
						103 / "Tactical"	

## Appendix

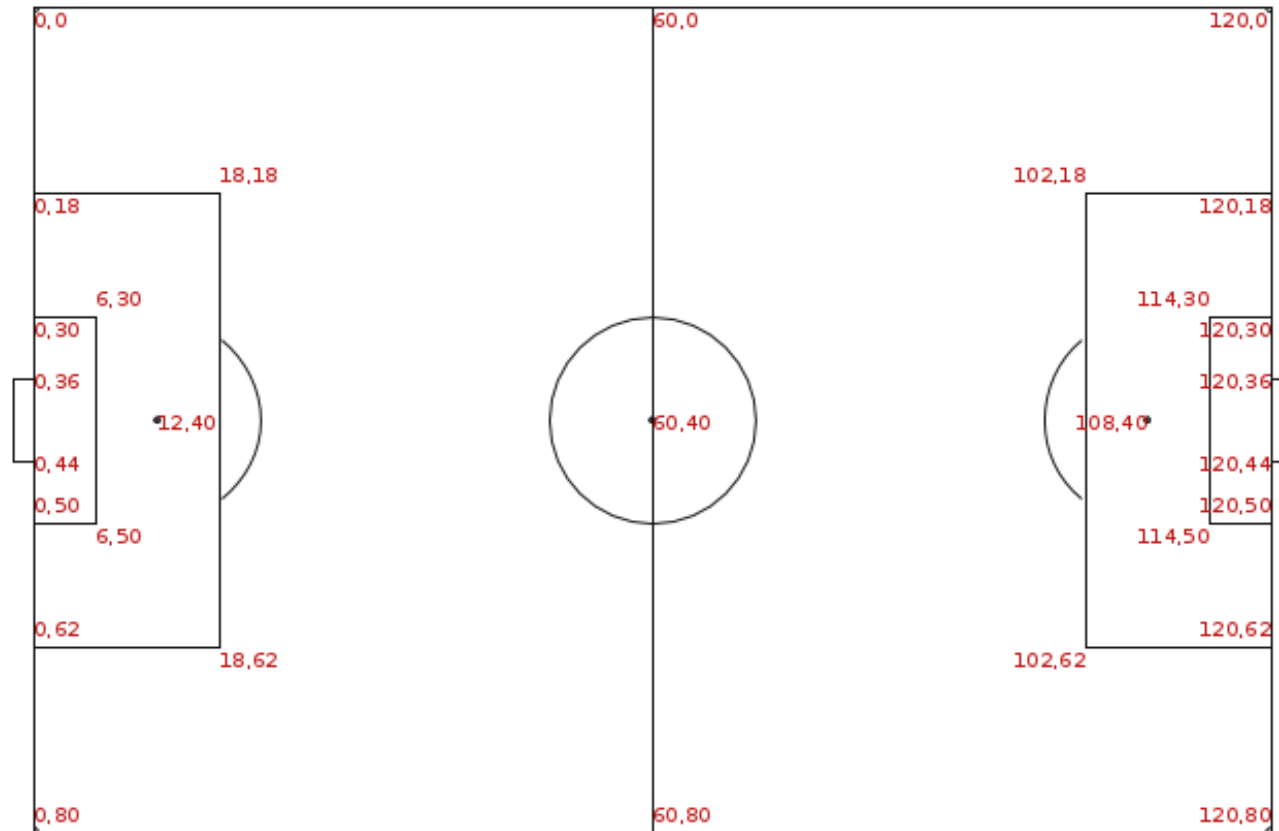
### Appendix 1: Tactical Positions Guide:



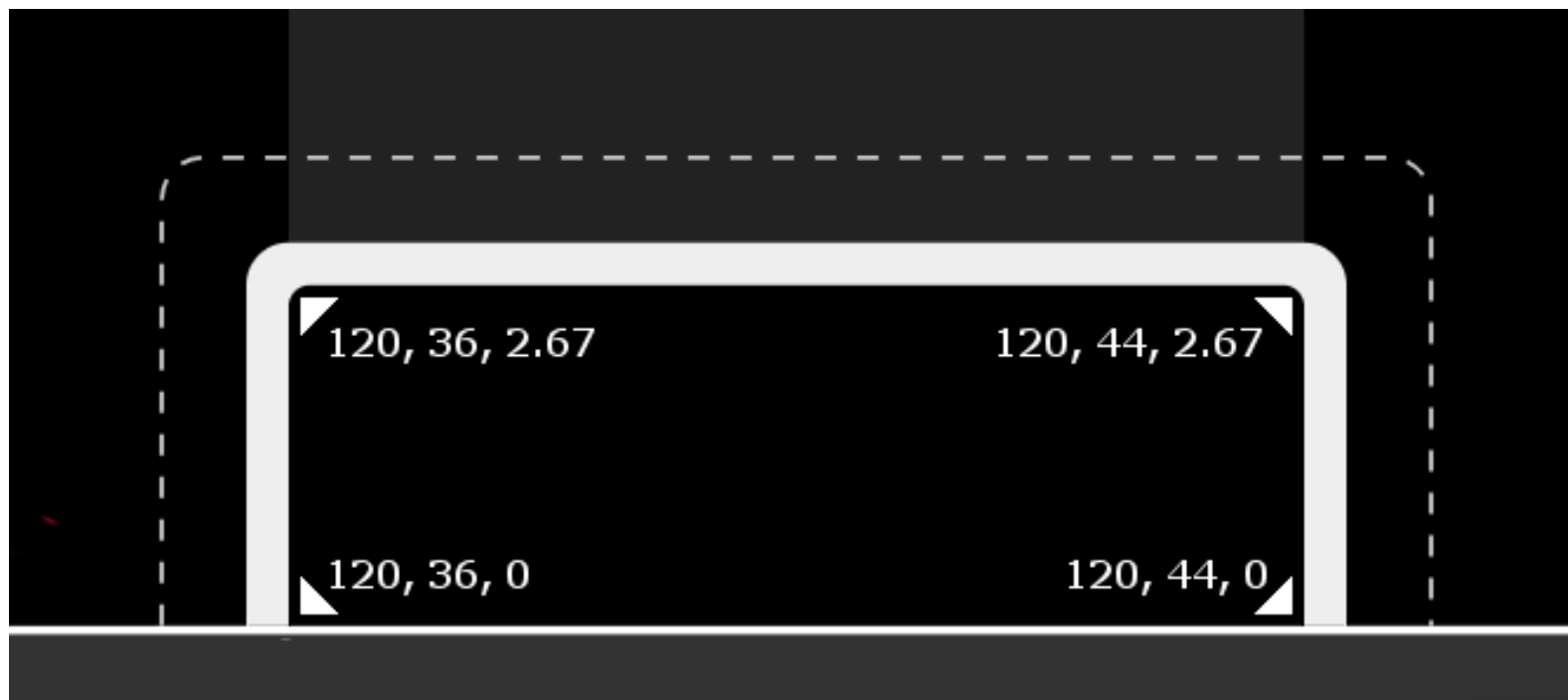
Position Number	Position Abbreviation	Position Name
1	GK	Goalkeeper
2	RB	Right Back
3	RCB	Right Center Back
4	CB	Center Back
5	LCB	Left Center Back
6	LB	Left Back
7	RWB	Right Wing Back
8	LWB	Left Wing Back
9	RDM	Right Defensive Midfield
10	CDM	Center Defensive Midfield
11	LDM	Left Defensive Midfield
12	RM	Right Midfield
13	RCM	Right Center Midfield
14	CM	Center Midfield
15	LCM	Left Center Midfield
16	LM	Left Midfield
17	RW	Right Wing
18	RAM	Right Attacking Midfield
19	CAM	Center Attacking Midfield
20	LAM	Left Attacking Midfield
21	LW	Left Wing
22	RCF	Right Center Forward
23	ST	Striker
24	LCF	Left Center Forward
25	SS	Secondary Striker

## Appendix 2: Locations

*Pitch Coordinates - Coordinates specified as (x, y).*



*Goal Coordinates - Coordinates specified as (x, y, z)*



### ***Appendix 3: Shot Freeze Frame Objects***

Each shot includes an object called freeze\_frame which is an array containing information about relevant players at the time of the shot. Each freezeframe object is structured as follows:

Column	Type	Child	Child Type
location	array [x,y]		
player	object	id /name	integer / text
position	object	id / name	integer / text
teammate	boolean		

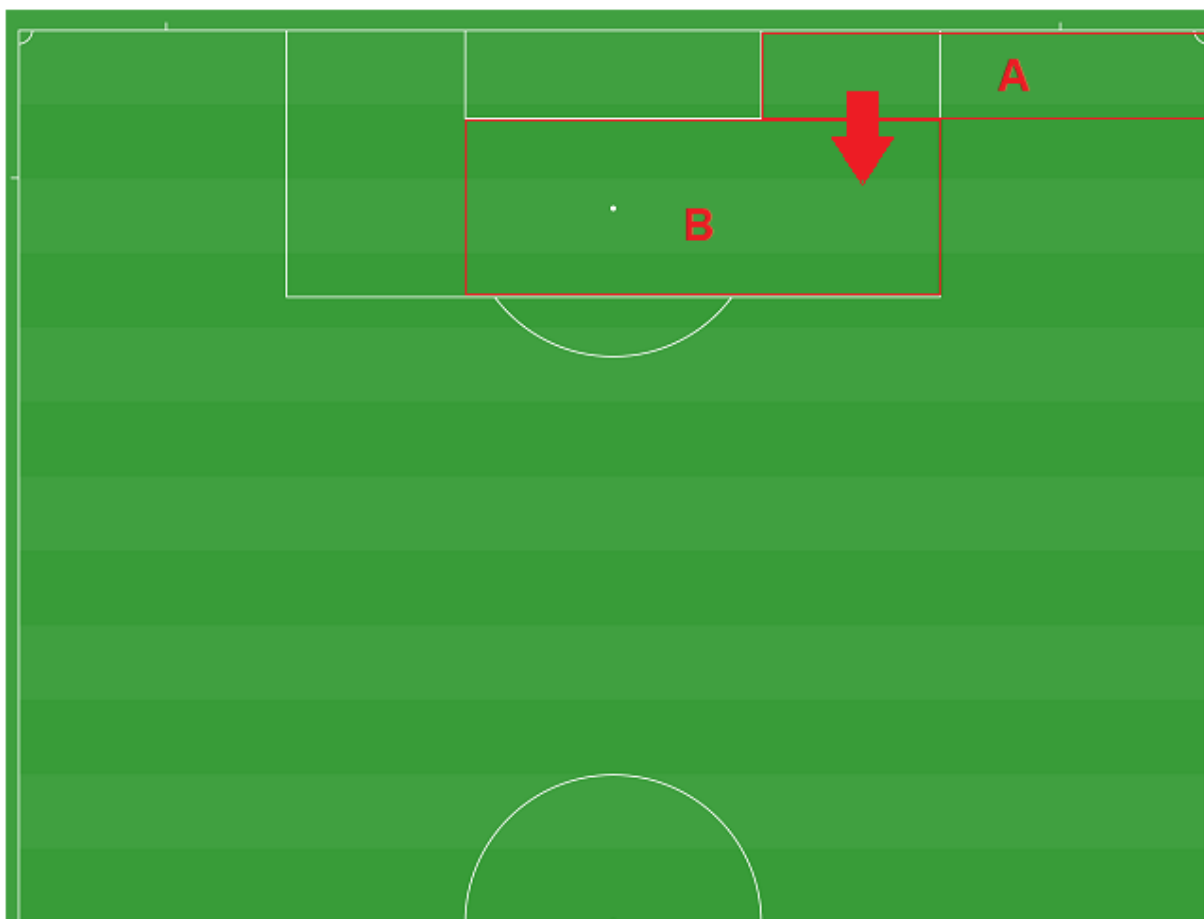
## ***Appendix 4: Tactics Lineups Objects***

At the beginning of each match, an event is recorded for the tactics and lineups for each team. Each tactics lineups object is structured as follows:

Column	Type	Child	Child Type
jersey_number	integer		
player	object	id / name	integer / text
position	object	id / name	integer / text

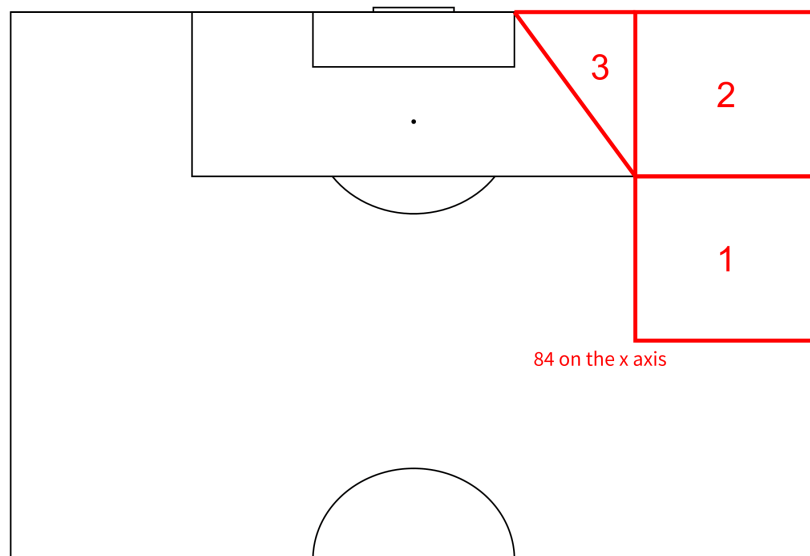
### ***Appendix 5: Cutback***

Cutbacks are low or ground passes that originate in zone A (on either side of the pitch) and end in zone B.

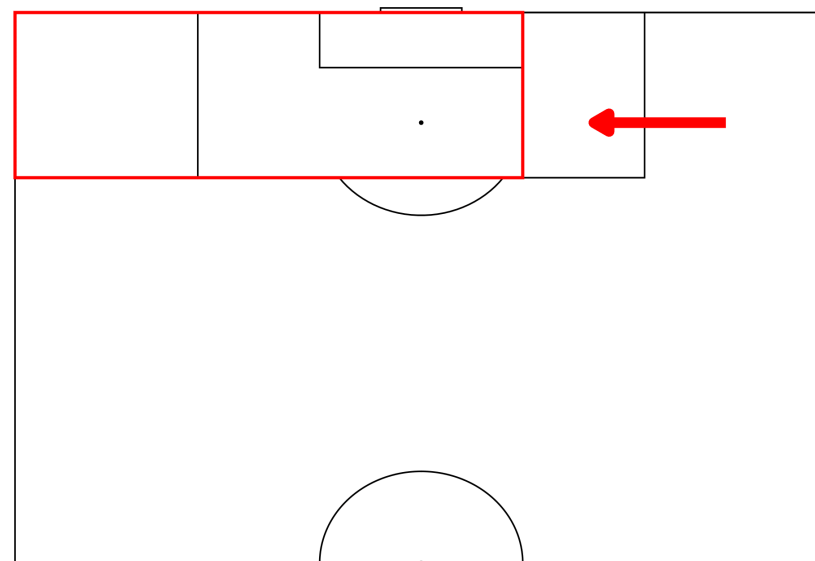


## Appendix 6: Cross

A pass is marked as a cross if it originates from any of the following attacking zones (on either side of the pitch):



And intersects the following zone:





## **Appendix 7: Pressure**

Calculated as every on-the-ball event that overlaps the duration of a pressure event. For example, if a pressure event appears before a pass, and the pressure's timestamp plus its duration encompasses the pass's timestamp, that pass is said to have been made under pressure. If a pressure event occurs after a pass, but before the end of the pass (as calculated by using its duration), that pass is said to have been received under pressure.

To see a video of how pressure is recorded, please visit: <https://data.statsbombservices.com/faq>.

## **Appendix 8: Competition Stages**

Competition Stage ID	Competition Stage Name
1	Regular Season
2	Play-In Round
6	Europa League Play-offs - Semi-finals
8	MLS Cup - Conference Semi-finals
9	3rd Qualifying Round
10	Group Stage
11	Quarter-finals
12	Europa League Play-offs - Finals
13	16th Finals
14	Promotion Play-offs - Final
15	Semi-finals
18	Promotion Play-offs - Semi-finals
19	Preliminary Round
20	2nd Round
21	Europa League Play-offs - Quarter-finals
22	2nd Qualifying Round
23	MLS Cup - Conference Finals

24	Promotion Play-offs - 1st Round
25	3rd Place Final
26	Final
27	Promotion Play-offs - 2nd Round
28	Play-offs
29	1st Qualifying Round
31	Preliminary Round - Semi-finals
33	8th Finals
34	1st Phase
35	Preliminary Round - Final

## ***Appendix 9: Data Version Change Log***

Data version is found in the API Events Feed. Here is a list of all event data changes between data versions.

### **Data Version 7.0.0**

- Added shot\_shot\_assist and shot\_goal\_assist values for shot events

### **Data Version 6.0.0**

- Added On-Ball-Value fields for match events, representing the likelihood (probability) of scoring or conceding a goal immediately before and after an event.

### **Data Version 5.0.0**

- Added Z coordinate for shots, to indicate the height in yards of the bottom of the ball from the ground at the moment of impact.

#### **Data Version 4.0.0**

- “Carry” added as an event type. carry.end\_location added as an additional variable to describe the ending location of a carry event
- “counterpress”: an attribute on various defensive events, including: pressure, dribbled past, 50-50, duel, block, interception, and foul committed (not offensive). These are pressing actions within 5 seconds of an open play turnover.
- “under\_pressure”: the definition has been expanded to apply in more situations. So, events which are naturally performed under pressure like duels, dribbles etc, all pick up the attribute, even in the absence of an actual pressure event. Carries can be pressured not just by pressure events, but other defensive events that happen during or at the end of the carry.
- Enhancements to possession chain and counterattack logic.

#### **Data Version 3.0.0**

- Shots, Freeze Frames, and other events paired to Shots have their locations specified more accurately for matches collected at higher fidelity.

#### **Data Version 2.0.0**

- “off\_camera” variable no longer a boolean on every event, but only shows when TRUE.
- “out” boolean variable added for when the outcome of the event is a ball out of bounds.
- “body type” variable added for event type “Clearance”
- “body type” now includes the option “No Touch” and “Drop Kick”
- “technique” variable added for passes, including: “Inswinging”, “Outswinging”, “Straight” and “Through Ball”
- “through\_ball” variable for passes is now deprecated.
- “late-video-start” variable added for event type “Half Start” when the broadcast video starts after the kick off.

- "early-video-end" variable added for event type "Half End" when the broadcast video ends before the final whistle.
- "match-suspended" variable added for event type "Half End" when the match is suspended typically due to weather.
- "kick-off" is now an option for shot types.
- "Saved To Post" option for shot outcome when the goalkeeper saves the ball into a post.
- "Saved Off Target" option for shot outcome when the goalkeeper saves a shot that would have missed the frame.
- "No Touch" added as a possible attribute for the event type "Dribble" when the attacker fails to touch the ball.
- Additional "Outcome" options for event type "Goal Keeper" including: "Punched Out", "Lost Out", "Lost in Play", "Success Out", and "Success In Play".
- "Permanent" added as a possible option for event type "Player Off" for scenarios where no subs left but player cannot return to pitch due to injury.
- Additional "Type" options for event type "Goal Keeper" including: "Penalty Saved To Post", "Saved To Post", "Shot Saved To Post", "Shot Saved Off Target".
- Goalkeeper event outcome "Lost" has been deprecated.

#### **Data Version 1.4.0**

- "off\_camera" variable added.
- "camera\_on" and "camera\_off" event-types are now deprecated.

#### **Data Version 1.2.0 and 1.3.0**

- Bug fixes and QA improvements.

#### **Data Version 1.0.1**

- Pressure events all have a Duration.

#### **Data Version 1.0.0**

- Initial version of StatsBomb Data

## **Appendix 10: Shot Fidelity Version Change Log**

Shot fidelity version is found in the API Match Feed. Here is a list of all event data changes between data versions.

### **Shot Fidelity Version 2**

- Shots, freeze frames and events paired to shots use high fidelity x,y coordinates

### **Shot Fidelity Version 1**

- All events and freeze frames use standard location granularity.

## **Appendix 11: OBV values**

Events types with obv values populated are shown in the table below. Events will not have OBV values where the sequence of play is interrupted by off-ball events as it isn't possible to value the state of the game after the event.

Events with OBV
Carry
Ground Pass
High Pass
Low Pass
Dribble
Shot
Goalkeeper Collection
Block
Tackle
Interception
Clearance
Goalkeeper Sweep
Goalkeeper Save

Foul Committed
Goalkeeper Concede

## Appendix 12: Cluster labels

In order to group and describe the clusters, we have split them into the following:

- Third - whether the start location of the cluster is primarily in the defensive, midfield or attacking third
- Location - whether the start location of the cluster is primarily on the left/right side of the pitch or more central
- Length - whether the pass was long or short, with the former defined by whether more than half of the passes in a cluster were greater than approximately 35 yards
- Direction - the primary direction of passes within a cluster i.e. to-left, to-right, forwards or backwards
- Modal pass height - the most common pass height

The labels for each cluster are outlined below:

Cluster	Third	Location	Length	Direction	Modal Pass Height
0	Midfield third	Center	To left	Short	Ground Pass
1	Midfield third	Center	To right	Short	Ground Pass
2	Attacking third	Center	To right	Short	Ground Pass
3	Attacking third	Right	Backwards	Short	Ground Pass
4	Midfield third	Left	Backwards	Short	Ground Pass
5	Defensive third	Right	Backwards	Short	Ground Pass
6	Defensive third	Center	To left	Short	Ground Pass
7	Attacking third	Left	To right	Short	Ground Pass
8	Midfield third	Center	To right	Short	Ground Pass
9	Midfield third	Right	Forwards	Long	High Pass
10	Midfield third	Left	Forwards	Long	High Pass
11	Midfield third	Center	To left	Short	Ground Pass

12	Midfield third	Right	Forwards	Short	Ground Pass
13	Midfield third	Left	Forwards	Short	High Pass
14	Defensive third	Center	Forwards	Long	High Pass
15	Attacking third	Left	Forwards	Short	Ground Pass
16	Defensive third	Left	To right	Short	Ground Pass
17	Midfield third	Right	Forwards	Short	Ground Pass
18	Midfield third	Right	To left	Short	Ground Pass
19	Midfield third	Left	Forwards	Short	Ground Pass
20	Midfield third	Right	Forwards	Short	High Pass
21	Defensive third	Center	To left	Short	Ground Pass
22	Midfield third	Center	To right	Short	Ground Pass
23	Midfield third	Right	Backwards	Short	Ground Pass
24	Attacking third	Left	Backwards	Short	Ground Pass
25	Midfield third	Right	To left	Long	High Pass
26	Midfield third	Center	To left	Short	Ground Pass
27	Midfield third	Left	To left	Short	Ground Pass
28	Defensive third	Left	Forwards	Long	High Pass
29	Midfield third	Left	To right	Long	Ground Pass
30	Midfield third	Center	To left	Short	Ground Pass
31	Attacking third	Right	To left	Short	Ground Pass
32	Midfield third	Left	To right	Short	Ground Pass
33	Defensive third	Center	To right	Short	Ground Pass
34	Midfield third	Left	To right	Long	High Pass
35	Attacking third	Left	To right	Short	High Pass
36	Midfield third	Right	Backwards	Short	Ground Pass
37	Midfield third	Center	Forwards	Short	Ground Pass
38	Midfield third	Left	Backwards	Long	Ground Pass
39	Defensive third	Right	Backwards	Short	Ground Pass
40	Attacking third	Right	To left	Short	High Pass

41	Defensive third	Right	Forwards	Long	High Pass
42	Defensive third	Right	To left	Short	Ground Pass
43	Attacking third	Right	Forwards	Short	Ground Pass
44	Defensive third	Center	To right	Short	Ground Pass
45	Midfield third	Center	To right	Short	Ground Pass
46	Midfield third	Left	To right	Short	Ground Pass
47	Midfield third	Right	To left	Long	Ground Pass
48	Defensive third	Center	Forwards	Short	Ground Pass
49	Attacking third	Left	Backwards	Short	Ground Pass
50	Defensive third	Left	Forwards	Short	Ground Pass
51	Midfield third	Right	To left	Short	Ground Pass
52	Defensive third	Center	Forwards	Long	High Pass
53	Midfield third	Center	Forwards	Short	Ground Pass
54	Defensive third	Center	Forwards	Long	High Pass
55	Attacking third	Right	Backwards	Short	Ground Pass
56	Attacking third	Center	To left	Short	Ground Pass
57	Midfield third	Left	Forwards	Short	Ground Pass
58	Defensive third	Right	Forwards	Short	Ground Pass
59	Midfield third	Left	Backwards	Short	Ground Pass

*[End of Document]*