



# RunningBall Command Logic

## In-Running Events

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# 1 General Information

This document summarises RunningBall's command logic for the provided sports. It explains how and when each command is used. Please pay attention to the glossary of terms and abbreviations before reading this document in order to understand it fully.

## 1.1 Revision History

Version	Information	Author	Reference Date
01	RunningBall main Commands modified following the addition of new commands and features in 3.0 version.	Bertan Baytekin	21/10/2009
02	Addition of basketball and tennis sports logic.	Christian Marko	17/05/2011
03	Update of basketball command logic.	Ops Content Management	24/10/2011
04	Update – Soccer Game States.	Ops Content Management	04/11/2011
4.1	Addition; Recommendation Goal Handling.	Ops Content Management	27/01/2012
5.0.0	Ice hockey and new soccer features added.	Ops Content Management	20/08/2012
6.0.0	Volleyball and beach volleyball added; minor enhancements & corrections.	Content Management	05/02/2013
7.0.0	Handball added; snooker updated; tennis removed.	Content Management	02/01/2014
7.1.0	Update.	Content Management	16/05/2014
7.2.0	Update; System Messages added.	Document & Knowledge Management	29/07/2015
8.0.0	Cricket added; snooker removed.	Karl Ferk, Markus Koch, DKM	02/05/2016
9.0.0	New events added for soccer.	Markus Koch	04/07/2016
9.1.0	Minor adjustments and corrections	DKM	01/12/2016
9.2.0	Cricket updated and events added	Florian Leitner	27/04/2017
9.3.0	New events for basketball, volleyball and beach volleyball. New System Message for ice hockey.	Florian Leitner	03/07/2017
9.4.0	<i>Period Start</i> and <i>Period Stop</i> added as Category 1 Events for soccer	Florian Leitner	07/12/2017



9.5.0	Logic and events regarding video assistant referee reviews added for soccer; Turnover logic for basketball revised Penalty about to be taken added for handball, ice hockey and soccer	Florian Leitner	26/01/2018
9.6.0	Additions regarding penalty/7-metre shootouts for soccer, ice hockey and handball; Corrections regarding VAR reviews and additions regarding VAR reviews during disconnections for soccer	Florian Leitner	02/03/2018
9.7.0	Expected goals feature added for soccer; Possible penalty and possible free kick added to event sequences for soccer	Florian Leitner	08/10/2018
9.8.0	Injury break events introduced for either competitor in soccer	Florian Leitner	11/02/2019
10.0.0	Baseball added	Florian Leitner	18/03/2019

**Table 1 – Revision History**

## 1.2 Glossary of Terms and Abbreviations

Term/Abbreviation	Description
Game Status	Describes the current coverage status of a game in the database; a game can be "Open" (the coverage has not started yet), "Finished" (the coverage ended), "Cancelled" (the coverage was cancelled), "Running" (the game is currently covered live) or "Suspended" (the game is officially cancelled).
Live Game	A game that is covered directly at the venue (in contrast to a TV Game).
Scout	A person who collects Fast Data of sports events
System Message	A game-related message that provides the customers with additional information.
TV Game	A game that is reported by a Scout who is watching a live broadcast of the relevant game.
VAR	Video Assistant Referee

### **SOCCER**

Attack Zone	A Pitch Zone; the Attack Zone is the area between the edge of the centre circle and the edge of the penalty arc in the opponent's half.
Attack State	A Game State; when a team is in possession of the ball in their Attack Zone and the attack is not (yet) dangerous the state of the game is attack.

Danger State	A Game State; (Dangerous Attack State, Dangerous Free Kick State); when there is a goal threat. E.g. the state of the game is in Danger if an attack might result in a goal. Note that this is solely the definition for the various Danger States in soccer. It is not to be confused with a Neutral Danger, which is mainly essential for TV Scouts and Supporters in various sports.
Danger Zone	A Pitch Zone; the Danger Zone is the area between the edge of the penalty arc and the goal line in the opponent's half.
Game State	Describes the current state of the game of a specific sport concerning possession, attacking teams and possible goal threats. It also informs about situations in which it is currently not possible to provide data (disconnections, broadcasting interruptions, etc.).
Pitch Zone	Describes areas of the pitch. Pitch Zones are indicators to determine the Game State.
Safe State	A Game State; the Safe State is used to indicate that a team is in possession of the ball in their Safe Zone without pressure from the opponent.
Safe Zone	A Pitch Zone; the Safe Zone is the area from the team's own goal line to the edge of the centre circle in the opponent's half.
AT 1/2	Attack State for team 1/2.
BA 1/2	Breakaway for team 1/2.
Possible CR	Possible corner kick
CR 1/2	Corner kick for team 1/2.
Danger 1/2	Danger State for team 1/2.
DAT 1/2	Dangerous Attack State for team 1/2.
DFK 1/2	Dangerous free kick for team 1/2.
Possible FK	Possible free kick
FK 1/2	Free kick for team 1/2.
GK 1/2	Goal kick for team 1/2.
Possible PEN	Possible penalty
PEN 1/2	Penalty for team 1/2.
Next PEN 1/2	Team 1/2 to take the next penalty.
Penalty about to be taken	A player is ready to take a penalty.
Retake	Penalty is retaken.
Start PEN Team 1	The beginning of a penalty shootout.
Stop PEN	The end of a penalty shootout.
RC 1/2	Red card for team 1/2.
Safe 1/2	Safe state for team 1/2.

SH 1/2	Shot for team 1/2.
Possible TI	Possible throw-in
TI 1/2	Throw-in for team 1/2.
YC/RC 1/2	Second yellow card – red card for team 1/2.
YC 1/2	Yellow card for team 1/2.
Player Injured 1/2	Injured player for team 1/2.
xG Event	Expected goals value attributed to an event.
xG Player	Expected goals value attributed to a player.
xG Team	Expected goals value attributed to a team.
<b>BASKETBALL</b>	
FOUL 1/2	Foul team 1/2.
T/I FOUL 1/2	Technical/Intentional foul team 1/2.
P FOUL 1/2	Personal foul team 1/2.
TIME	Neutral time-out.
TIME 1/2	Time-out team 1/2.
1FT 1/2	One free throw team 1/2.
2FT 1/2	Two free throws team 1/2.
3FT 1/2	Three free throws team 1/2.
1PT 1/2	Free throw point scored team 1/2.
Missed FT 1/2	Free throw missed team 1/2.
Possible FT	Possible free throw.
BALL 1/2	Ball possession team 1/2.
No FT	No free throw.
TI 1/2	Throw-in team 1/2.
JBW 1/2	Jump ball winner team 1/2.
ROff 1/2	Offensive rebound team 1/2.
RDef 1/2	Defensive rebound team 1/2.
TO 1/2	Turnover team 1/2.
STEAL 1/2	Steal team 1/2.
POSS ARROW 1/2	Possession arrow team 1/2.
2PTs 1/2	2 points team 1/2.

3PTs 1/2	3 points team 1/2.
Miss 2 PTs 1/2	Missed 2-point attempt team 1/2
Miss 3 PTs 1/2	Missed 3-point attempt team 1/2
Pt Conf 1/2	Point(s) confirmed team 1/2.
FO 1/2	Fouled out player team 1/2.
Disq player 1/2	Disqualified player of team 1/2.
INJ/OUT 1/2	Player of team 1/2 injured.
BIG 1/2	Player of team 1/2 back in game.
Cancel	Cancel statistics which is used for the correction/replacement of an event, e.g. replace a 2PT with a 3PT event or vice versa.

### ICE HOCKEY

+10m	Additional 10-minute suspension for a player.
+2m	Additional 2-minute suspension for a player.
+5m	Additional 5-minute suspension for a player.
10m	10-minute penalty.
2m	2-minute suspension.
5m	5-minute suspension.
2MPO1/2	2-minute suspension over team 1/2.
5MPO1/2	5-minute suspension over team 1/2.
AT Half 1/2	Attacking half 1/2
FO	Face-off
FOD	Face-off done
FOW 1/2	Face-off won team 1/2.
GMP	Game misconduct penalty; additional game disciplinary penalty for the same player.
GK OFF	Goalkeeper off the ice.
GK ON	Goalkeeper back on the ice.
GOAL	Goal scored by one of the teams.
IC	Icing
No PEN	No penalty shot awarded by the referee.
No SUSP	No suspension assessed.
OFF	Offside

Possible PEN	Possible penalty shot.
PEN SH	Penalty shot awarded by the referee.
Next PEN 1/2	Team 1/2 to take the next penalty.
Penalty about to be taken	A player is ready to take a penalty.
Retake	Penalty is retaken.
Start PEN Team 1/2	The beginning of a penalty shootout.
Stop Pen	The end of a penalty shootout.
SH	Shot on goal.
TIME	Time-out.

### **VOLLEYBALL/BEACH VOLLEYBALL**

SRV 1/2	Team 1/2 is about to serve.
RS 1/2	The rally has started.
A 1/2	Ace for team 1/2.
S ERR 1/2	Service error by team 1/2.
B 1/2	Successful block by team 1/2.
K 1/2	Team 1/2 made a kill.
OUT 1/2	Team 1/2 hit the ball out of bounds.
ERR 1/2	Team 1/2 committed an error.
B POSS 1/2	Ball possession team 1/2.
P UM 1/2	Point (unknown method) 1/2.
Pt Conf 1/2	Confirmation of the point scored by team 1/2.
CP 1/2	Cancel point 1/2.
PEN 1/2	Team 1/2 is sanctioned with a penalty.
P Disqu	Possible disqualification.
EXP 1/2	A player of team 1/2 is expelled.
DISQU 1/2	A player of team 1/2 is disqualified.
P 1/2	Point for team 1/2.
S 1/2	Set for team 1/2.
TIME	Neutral time-out.
TIME 1/2	Time-out taken by team 1/2.
TTO	Technical time-out.

## HANDBALL

+2m 1/2	Additional 2-minute suspension for team 1/2.
2m 1/2	2-minute suspension for team 1/2.
2MSO 1/2	Suspension over team 1/2.
7m 1/2	7-metre throw for team 1/2.
CGOAL 1/2	Cancel Goal team 1/2.
FT 1/2	Free-throw team 1/2.
GK OFF 1/2	The goalkeeper of team 1/2 has left the court for an additional field player.
GK ON 1/2	The goalkeeper of team 1/2 is back on the court.
No SUSP	No suspension; no 2-minute suspension was imposed.
P 1/2	Possession team 1/2.
Possible SUSP	Possible suspension; a 2-minute suspension or another punishment may be imposed.
RC 1/2	Red card team 1/2.
SH 1/2	Shot team 1/2.
TI 1/2	Throw-in team 1/2.
TIME	Neutral time-out.
TO 1/2	Throw-off team 1/2.
TTO 1/2	Team time-out team 1/2.
YC 1/2	Yellow card team 1/2.
Next PEN 1/2	Team 1/2 to take the next 7-metre throw.
Penalty about to be taken	A player is ready to take a 7-metre throw.
Retake	7-metre throw is retaken.
Start 7m shootout Team 1/2	The beginning of a 7-metre shootout.
Stop PEN	The end of a 7-metre throw shootout.

## Cricket

1R 1/2	1 run for competitor 1/2.
2R 1/2	2 runs for competitor 1/2.
3R 1/2	3 runs for competitor 1/2.
4R 1/2	4 runs for competitor 1/2.
5R 1/2	5 runs for competitor 1/2.

6R 1/2	6 runs for competitor 1/2.
B 1/2	Ball 1/2; delivery.
Bat 1/2	Batting competitor 1/2.
Bound 1/2	Boundary competitor 1/2.
BU	Ball Update; in case ball related information was updated.
Close Market	Suggestion to close betting markets.
Dot Ball 1/2	Dot Ball 1/2; in case no runs or wickets are scored for one ball.
Half Inning	Half inning; before a batting team change during the inning.
Ball in progress	Ball is in play.
No Bound 1/2	No Boundary competitor 1/2.
NoB 1/2	No Ball 1/2; ball delivered illicitly.
Ball complete	Ball is not in play.
No W 1/2	No Wicket competitor 1/2.
Open Market	Suggestion to open betting markets.
OV 1/2	Over competitor 1/2.
Possible Bound 1/2	Possible Boundary competitor 1/2.
Possible W 1/2	Possible Wicket competitor 1/2.
StopBat 1/2	Stop batting competitor 1/2.
WICKET 1/2	Wicket competitor 1/2.
Wide 1/2	Wide 1/2; ball delivered too high.

### Baseball

R 1/2	Run competitor 1/2
HIT 1/2	Hit competitor 1/2
ERR 1/2	Error competitor 1/2
OUT 1/2	Out competitor 1/2
SING 1/2	Single competitor 1/2
DOUB 1/2	Double competitor 1/2
TRIP 1/2	Triple competitor 1/2
HR 1/2	Home run competitor 1/2
W 1/2	Walk competitor 1/2
IW 1/2	Intentional walk competitor 1/2

HBP 1/2	Hit by pitch competitor 1/2
EJ 1/2	Ejection competitor 1/2
STEAL 1/2	Steal competitor 1/2
CS 1/2	Caught stealing competitor 1/2
FLDS CH 1/2	Fielder's choice competitor 1/2
STRK OUT 1/2	Strike-out competitor 1/2
FLO 1/2	Fly out competitor 1/2
FOUL 1/2	Foul competitor 1/2
STRK 1/2	Strike competitor 1/2
UC 3RD STRK 1/2	Uncaught third strike competitor 1/2
TIME	Time-out
Bat 1/2	Batting competitor 1/2
StopBat 1/2	Stop batting competitor 1/2
FOO 1/2	Force out competitor 1/2
TO 1/2	Tag out competitor 1/2
DP 1/2	Double play competitor 1/2
TP 1/2	Triple play competitor 1/2
ROB	Runner on base
PR	Pitcher ready
PF	Play finished

**Table 2 – Terms and Abbreviations**



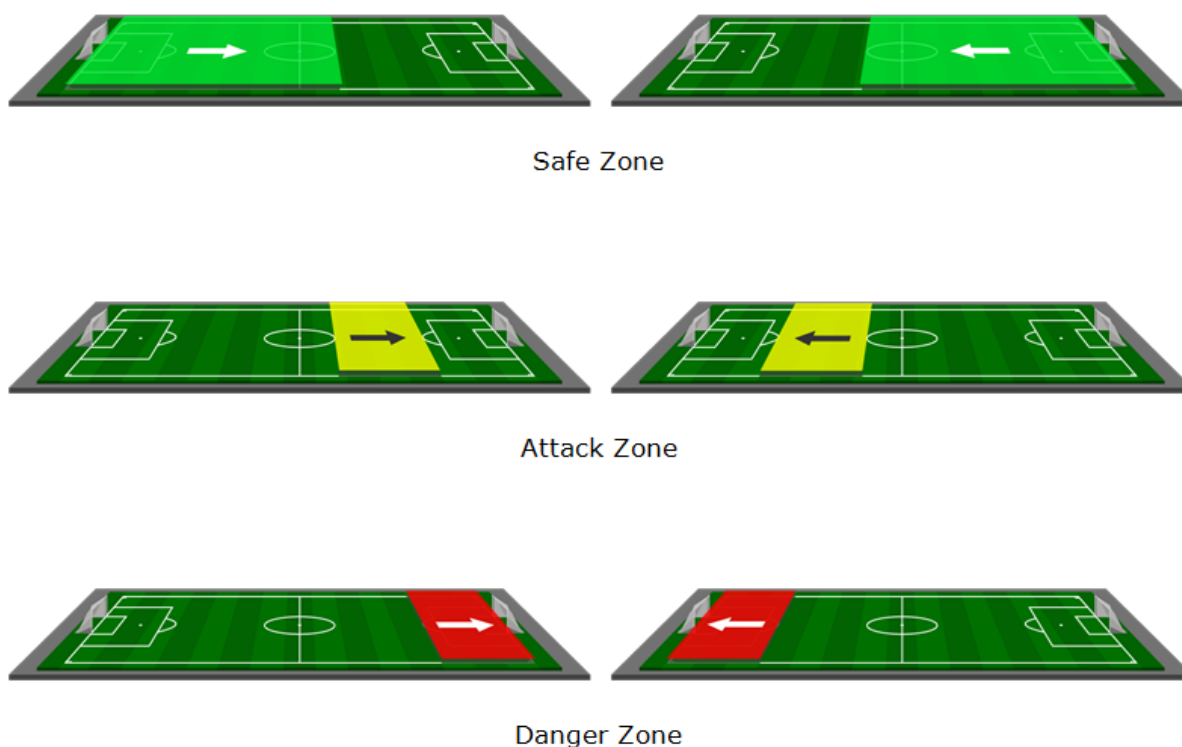
# 2 Command Logic Soccer

## 2.1 State Logic

RunningBall describes the situation on the pitch using 3 different states/zones per team:

- > Safe State/Zone
- > Attack State/Zone
- > Danger State/Zone

*Figure 1 – RunningBall Zone Definitions* shows which Game States RunningBall Scouts normally enter, depending on which team is in possession of the ball in which Pitch Zone.



**Figure 1 – RunningBall Zone Definitions**

The definitions of the Game States and Pitch Zones are explained in the chapters below.

### 2.1.1 Safe Zone/Safe State

**Safe Zone:** The Safe Zone is the area from the team's own goal line to the edge of the centre circle in the opponents' half.

**Safe State:** The Safe State is used to indicate that a team is in possession of the ball in their Safe Zone without pressure from the opponent.

*Safe 1* means the game is in Safe State and competitor 1 is in possession of the ball. *Safe 2* means the game is in Safe State and competitor 2 is in possession of the ball.

*Safe* also confirms the current statistics of the following events:

- > Goals
- > Penalties
- > Red cards
- > Yellow cards
- > Corner kicks

### 2.1.2 Attack Zone/Attack State

**Attack Zone:** The Attack Zone is the area between the edge of the centre circle and the edge of the penalty arc in the opponent's half.

**Attack State:** The Attack State is not directly affected by any other event (FK etc.).

*AT1* means that competitor 1 is in possession of the ball in their Attack Zone and the attack is not (yet) dangerous. Immediate attempts on goal are unlikely.

*AT2* means that competitor 2 is in possession of the ball in their Attack Zone and the attack is not (yet) dangerous. Immediate attempts on goal are unlikely.

### 2.1.3 Danger Zone/Danger State

**Danger Zone:** The Danger Zone is the area between the edge of the penalty arc and the goal line in the opponent's half.

#### **Danger States:**

*Danger*, respectively *Dangerous Attack* is used to indicate that a team is entering the Danger Zone for a possible scoring attempt and/or to indicate that the current situation on the pitch may lead to a goal. *Dangerous Free kick* indicates free kicks that may lead to a goal scoring opportunity (see chapter 2.23.2 *Dangerous Free Kick*). Generally speaking, *Danger* indicates a goal threat, an attack attempt that might result in a goal.

*Danger 1*, respectively *DAT 1* means that competitor 1 has entered the Danger Zone of the opponent and/or might attempt to score a goal.

*Danger 2*, respectively *DAT 2* means that competitor 2 has entered the Danger Zone of the opponent and/or might attempt to score a goal.

$$AT\ 1 + Danger\ 1 = DAT\ 1$$

$$AT\ 2 + Danger\ 2 = DAT\ 2$$

**Note:** In case a Scout presses *Danger 1/2* without previously entering the corresponding *Attack 1/2*, the software automatically creates *Dangerous Attack* in order to not miss out statistical data.

#### 2.1.4 Variations of the Danger State

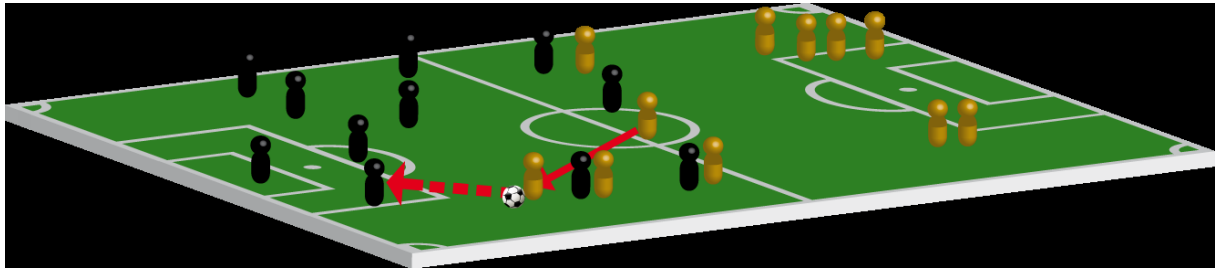


Figure 2 – Example: Switch from Safe to Attack and Attack to Danger State

The team in black is team 1 and the team in yellow is team 2:

- 1) *Safe 2* – the yellow player has the ball around the circle.
- 2) *Attack 2* – the yellow player passes the ball to his teammate.
- 3) *Danger 2* – the yellow player dribbles into the box.

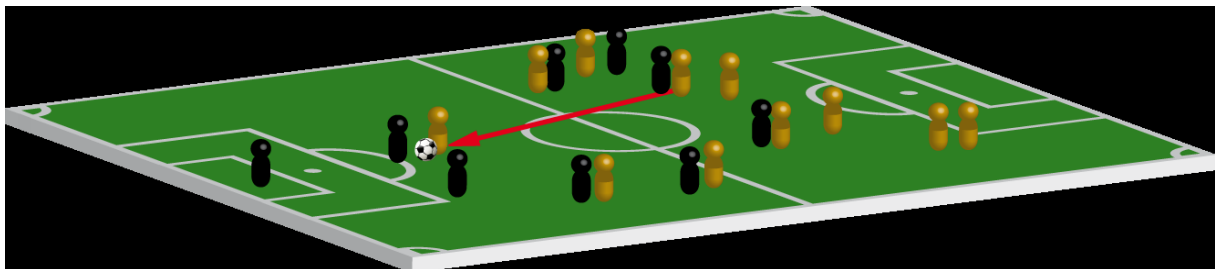


Figure 3 – Counter Attack and a Direct Switch from Safe to Danger State

The picture above shows a situation in which *Danger* is entered without entering *Attack* before, in order to not delay a possible goal. This is only done when it is necessary.

- 1) *Safe 2 – Danger 2*

**Note:** The definition of the Danger Zones can be irrelevant in certain cases. Counter attacks or sudden defensive mistakes might shift the Danger Zone to the midfield line due to the quick movement of the ball (see also chapter 2.11 *Breakaway (BA)*). In short, the position of the players is more of a determining factor than the definition of the zones in particular cases.

## 2.2 Goal

RunningBall Scouts send the *Goal* event when a goal is scored, or if they are not entirely sure whether a goal has been scored or not (e.g. the ball hits the outside of the net). Clients should interpret this as if a goal has been scored and stop trading. In case of uncertainty about whether the goal is allowed, the Scout will send *Goal under investigation*. This happens for example when the situation on the pitch is unclear or if a goal situation is investigated by a video assistant referee (VAR) (see chapter 2.27 VAR).

If the goal does not count (e.g. it is disallowed because of the scorer being offside, or the ball is not actually in the goal), the Scout will cancel the goal with the *Cancel Goal* command.

Otherwise, the *Goal Conf* command will be sent as soon as the situation on the field indicates that the goal is allowed, e.g. the referee signals so and there is no debate. Each goal of the game is displayed with scorer information (where applicable) and scoring method. The scoring methods are *shot*, *header*, *free kick* and *own goal*. Goals can only be entered in Danger State.

The scoring method and player specific data (where applicable) are displayed for each goal. For instance: Goal 1 (no.10 (free kick)) or Goal 2 (Eden Hazard (shot)). The available scoring methods are:

Each goal of the game is displayed with scorer information (whenever applicable) and one of the following scoring methods:

- > Shot
- > Free kick
- > Header
- > Own goal

For instance: Goal 1 (no.10 (free kick)) or Goal 2 (Eden Hazard (shot)).

Note that the scorer information may be updated either when Goal Conf or when KO is sent.

***Danger 1 + Goal 1 (no.2 (header)) + Goal Conf 1 + Kickoff 2 + Safe 2***

***Danger 2 + Goal 2 + Cancel Goal 2 + Safe 1 + Possible FK + Possible FK 1 + Offside 2 + FK 1 (zone 5)***

***Danger 1 + Goal 1 + Cancel Goal 1 + Safe 2 + GK 2***

In case the referees check whether or not a goal was scored or in case the situation on the pitch remains unclear and the goal is not yet confirmed by the referees, *Goal under investigation* is sent.

***Goal 2 + Goal under investigation + Cancel Goal 2 + Possible FK + Possible FK 2 + Offside 2 + FK1 (zone 5)***

***Goal 1 (no.9 (shot)) + Goal under investigation + Goal Conf 1 + Kickoff 2 + Safe 2***

## 2.3 Possible Card

RunningBall Scouts send *Possible Card* if they suspect that a situation might lead to a card before the referee decides. Clients should interpret this as if it was a yellow card and stop trading. *No Card* is sent if there is no card shown after all. Otherwise, the Scout will enter at least one card.

***Safe 2 + AT 2 + Possible Card + YC 1 (no.11 (foul)) + YC 1 Conf***

***AT 1 + Possible Card + No Card + Safe 2***

## 2.4 Yellow Card (YC)

Each yellow card is displayed with its reason and player specific data (where applicable). For instance: YC 1 (criticism, no. 9) or YC 2 (foul, Cristiano Ronaldo). The current card reasons are:

- > *Foul*
- > *Hand*
- > *Criticism*
- > *Unsportsmanlike conduct*
- > *Assault*
- > *Dive*
- > *Other*

Scouts will send *YC Conf* (yellow card confirmed) once there is no doubt that the YC was awarded.

**AT 2 + Danger 2 + Possible Card + Possible FK + Possible FK 2 + YC 1 (no.11 (foul)) + YC 1 Conf + Foul 1 + FK 2 (zone 2)**

## 2.5 Possible Red Card

RunningBall Scouts send *Possible Card* and *Possible RC* if they suspect that a situation might lead to a red card before the referee makes a decision. Clients should interpret the *Possible RC* event as if there is a red card and stop trading. *No RC*, which is the indicator for *No Red Card*, is sent if there is no red card after all. Otherwise, the Scout will enter *RC*.

**AT 1 + Danger 1 + Possible Card + Possible RC + No RC + No Card + Safe 2**

**AT 1 + Danger 1 + Possible Card + Possible RC + No RC + YC 1 (no.11 (foul)) + Safe 2**

**AT 2 + Danger 2 + Possible Card + Possible RC + Possible PEN + Possible PEN 2 + RC 1 (foul, no.11) + RC 1 Conf + PEN 2 + Penalty about to be taken + Goal 2 (no. 8 (free kick)) + Goal Conf + Kickoff 1 + Safe 1**

## 2.6 Red Card (RC)

*Red Card* is only sent after *Possible RC* (possible red card). It is also displayed with the reason and player specific data (where applicable). RunningBall Scouts send *Red Card* when the referee actually shows/awards the red card. *RC Conf* is sent once it is confirmed who received the card and when there is no discussion about it anymore.

**AT 2 + Danger 2 + Possible Card + Possible RC + Possible FK + Possible FK 2 + RC 1 (no.11 (foul)) + RC 1 Conf + Foul 1 + FK 2 (zone 2) + Restart + Safe 1**

## 2.7 2<sup>nd</sup> Yellow – Red Card (YC/RC)

A second yellow card equals a red card. RunningBall Scouts send *2<sup>nd</sup> Yellow – Red Card* when the referee actually shows/awards the card. It is also displayed with the reason and player specific data (where applicable). *YC/RC Conf* (second yellow card – red card confirmation) is

sent once it is confirmed who received the card and when there is no discussion about it anymore.

**AT 1 + Danger 1 + Possible Card + Possible RC + Possible FK + Possible FK 1 + YC/RC 2 (no.7 (assault)) + YC/RC 2 Conf + Foul 2 + FK 1 (zone 2) + Restart + Safe 2**

## 2.8 Possible Penalty (Possible PEN)

RunningBall Scouts send *Possible PEN* if they suspect that a situation may lead to a penalty before the referee makes a decision. Clients should interpret this as if it was a penalty and stop trading. *No PEN*, which is the indicator for *No Penalty*, will be displayed if there is no penalty. If the penalty is awarded, the Scout will send *PEN 1/2*.

**AT 1 + Danger 1 + Possible PEN + Possible PEN 1 + No PEN + Safe 2**

**AT 2 + Danger 2 + Possible PEN + Possible PEN 2 + PEN 2 + Penalty about to be taken + Missed + Safe 1**

## 2.9 Penalty (PEN)

When the referee awards a penalty, the Scout sends *PEN*. Once the penalty taker is ready for the attempt, *Penalty about to be taken* is sent. Depending on the outcome of the penalty, *Goal* or *Missed* is sent. In case a penalty is retaken, *Retake* is sent. A goal scored from a penalty can be considered confirmed as soon as the *Goal Conf* event is sent.

**AT 1 + Danger 1 + Possible PEN + Possible PEN 1 + PEN 1 + Penalty about to be taken + Goal 1 (no.1 (penalty)) + Goal Conf 1 + Kickoff 2 + Safe 2**

**AT 2 + Danger 2 + Possible PEN + Possible PEN 2 + PEN 2 + Penalty about to be taken + Goal 2 + Cancel Goal 2 + Retake PEN + Penalty about to be taken + Goal 2 (no. 12 (penalty)) + Goal Conf 2 + Kickoff 1 + Safe 1**

**AT 2 + Danger 2 + Possible PEN + Possible PEN 2 + PEN 2 + Penalty about to be taken + Missed + Retake PEN + Penalty about to be taken + Goal 2 (no. 5, Penalty)) + Goal Conf 2 + Kickoff 1 + Safe 1**

## 2.10 Penalty Shootout

A penalty shootout is a method for determining which team is awarded the win in case the competition requires a winner and the score is tied after regular playing time and extra time (if used).

Once the penalty taker is ready for the attempt, *Penalty about to be taken* is sent. Depending on the outcome of the penalty, *Goal* or *Missed* is sent. In case a penalty is retaken, *Retake* is sent. A goal scored in a penalty shootout can be considered confirmed as soon as the *Goal Conf* event is sent. During penalty shootouts, no kick-off will be sent after the goal was confirmed. The Scout will indicate the team to take the next penalty by sending the *Next PEN* event. This way, also penalty shootouts can be reported in which teams do not take the penalties in turns (e.g. ABBA penalty format).

Some possible command combinations are described below:

***Start PEN Team 1 + Next PEN 1 + Penalty about to be taken + Goal 1 + Goal Conf 1 + Next PEN 2 + Penalty about to be taken + Missed + Stop PEN***

***Start PEN Team 1 + Next PEN 1 + Penalty about to be taken + Goal 1 + Goal Conf 1 + Next PEN 2 + Penalty about to be taken + Missed + Next PEN 2 + Penalty about to be taken + Goal 2 + Goal Conf 2 + Next PEN 1***

## 2.11 Breakaway (BA)

The *Breakaway* event is sent to indicate scoring opportunities with an extraordinarily high success probability in breakaway situations. It is used when an attacker runs towards the other team's goal without any opponents in the way except for the goalkeeper. It is also used if there is a quick counter attack and the attackers have a numerical advantage (e.g. 3 attackers vs. 2 defenders, excluding the goalkeeper), unless the defenders are well-positioned. Both situations imply that the attackers have more space and time to prepare an attempt on goal than in other dangerous situations and have a clear advantage compared to the defenders. Typically, these situations occur after surprising turnovers or bad passes in the midfield.

The event is only used in open play situations. Goal threats caused by other situations (e.g. penalty, free kick or corner kick) are indicated by the corresponding event.

Breakaways are always sent in Danger State. *Danger* remains active after the event until the situation is not dangerous anymore.

Event	Game State before the Event	Game State after the Event
Breakaway	Danger	Danger

**Table 3 – Breakaway and its Possible Game States**

The breakaway can be considered as over as soon as any other event is sent, except for a shot on target or woodwork.

***Safe 1 + Danger 2 + BA 2 + Goal 2 (no. 22 (header)) + Goal Conf 2 + KO 1 + Safe 1***

***AT 2 + Danger 1 + BA 1 + SH (off target) 1 + Safe 2 + GK 2***

## 2.12 Possible Corner Kick (Possible CR)

RunningBall Scouts send *Possible Corner* if they expect that a situation may lead to a corner kick before the corner kick is officially awarded. Clients should interpret this as if it was a corner and stop trading. *No CR*, which is the indicator for *No Corner*, will be displayed if there is no corner.

If the corner is awarded, the Scout will send *CR 1/2*.

***AT 1 + Danger 1 + Possible CR 1 + No CR + Safe 2***

***AT 2 + Danger 2 + Possible CR 2 + CR 2 (left side) + Restart***

### 2.13 Corner Kick (CR)

Each corner kick is entered by RunningBall Scouts as *CR 1* (corner kick competitor 1) or *CR 2* (corner kick competitor 2). In addition, you are provided with information about the side the corner is taken from.

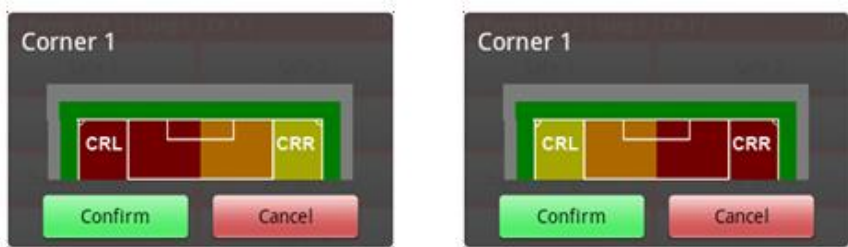


Figure 4 – Corner Sides

The *Restart* command is used when the ball is back in play.

Corner kicks are only possible in Danger State. *Danger* remains active after the corner kick until the situation is not dangerous anymore.

Event	Game State before the Event	Game State after the Event
Corner	Danger	Danger

Table 4 – Corners and their Possible Game States

### 2.14 Possible Free Kick and Free Kick (FK)

RunningBall Scouts send either *Possible FK 1* or *Possible FK 2* (possible free kick) if they expect that a situation may lead to a free kick for the respective team before it is officially awarded. If no free kick is awarded, a *No FK* event will be sent. If a free kick is awarded, the Scout will then provide the details (reason for the free kick and free kick zone). As soon as they are confirmed, the actual *FK* event is sent. The basic event sequences are described below:

**AT 1 + Possible FK + Possible FK 1 + Foul 2 + FK 1 (Zone 4) + DFK 1 + Restart + Safe 2**

**AT 2 + Possible FK + Possible FK 2 + No FK + Safe 1**



**Important:** In case the free kick is caused by a serious foul play, Scouts send *Possible RC* (see chapter 2.5 *Possible Red Card*) first. Then they send the *Possible FK* and enter the card (if there is any) before they deal with the free kick.

If the foul occurs on the border of the penalty box and it is unclear whether or not a penalty shot will be awarded, the Scouts will send *P.PEN* (see chapter 2.8 *Possible Penalty*). Only when it is sure that it is in fact a free kick, the possible penalty will be cancelled with a *No PEN* event and the free kick will be sent.

Both yellow cards and unforeseeable red cards (for example if a player is sent off because of criticism after a second yellow card) can be sent in between the *Possible FK* events and the actual *FK*.

Some common event sequences are described below:

***AT 1 + Possible FK + Possible FK 1 + Foul 2 + FK 1 (Zone 4) + DFK 1 + Restart***

***AT 1 + Possible FK + Possible FK 1 + Possible Card + YC 2 (No. 6 (foul)) + YC 2 Conf + Foul 2 + FK 1 (Zone 4) + DFK 1 + Restart***


***Danger 2 + Possible PEN + Possible PEN 2 + No PEN + Possible FK + Possible FK 2 + Foul 1 + FK 2 (Zone2) + DFK 2 + Restart***

***AT 1 + Possible Card + Possible RC + Possible FK + Possible FK 1 + No RC + YC 2 (No. 6 (foul)) + YC 2 conf + Foul 2 + FK 1 (Zone 4) + DFK 1 + Restart***

If the Scout anticipated the free kick for the wrong team, the possible free kick will be changed to the other team:

***AT 1 + Possible FK + Possible FK 1 + Possible FK 2 + Safe 2 + Foul 1 + FK 2 (Zone 5) + Restart***

An important detail in free kick statistics is the zone selection. RunningBall defines different free kick zones in a soccer game:

Free Kick Zone	Description	Possible Game State(s) before the Event	Game State Triggered by the Event
<p>Zone 1</p> 	<p>Zone 1 represents free kicks, which are awarded for the attacking team inside the penalty box of the defending team (indirect FK).</p>	Danger	Danger

Free Kick Zone	Description	Possible Game State(s) before the Event	Game State Triggered by the Event
<p>Zone 2</p> 	<p>Zone 2 represents free kicks, which are awarded for the attacking team in front of the penalty box of the defending team, facing the goal directly. It is very likely to have direct shots from such free kicks.</p>	Attack, Danger	Danger
<p>Zone 3</p> 	<p>Zone 3 represents free kicks, which are awarded for the attacking team on either side of the penalty box of the defending team. It is very likely to have a dangerous cross or direct shot from such free kicks.</p>	Attack, Danger	Danger
<p>Zone 4</p> 	<p>Zone 4 represents free kicks, which are awarded for the attacking team between the halfway line and the Danger Zone. It is very unlikely to have a direct shot from such free kicks.</p>	Safe, Attack, (rarely: Danger)	Danger
<p>Zone 5</p> 	<p>Zone 5 represents free kicks, which are awarded in a team's own half. Such free kicks might be dangerous free kicks in certain scenarios.</p>	Safe, Attack, Danger	

Table 5 – Free Kick Zones and their Game States

**Note:** Free kicks that are taken in the opponent's half are automatically dangerous free kicks. This is also the case if the free kick is in the opponent's half but still in the Safe Zone or the Attack Zone of the opponent.

**Note:** The RunningBall software automatically displays *Dangerous Free kick* when the Scout selects the free kick zones 1, 2, 3 or 4.

The reason for the free kick is also displayed in the RunningBall Trader Client. Currently, the following free kick reasons are used:

Free Kick Reason	Description
Foul	<i>Foul</i> is used for all offences that involve direct physical contact with the opponent, e.g. kicking, tripping, pushing, excessive tackling or holding.
Offside	A member of the attacking team was nearer to the defending team's goal than any player of the defending team (except for the goalkeeper) when the ball was played to him/her.
Other	Any other reason for a free kick that is neither a foul nor an offside, for example: <ul style="list-style-type: none"><li>&gt; Spitting at an opponent.</li><li>&gt; Deliberate handling of the ball.</li><li>&gt; Playing in a dangerous manner.</li><li>&gt; Attempting to deceive the referee (diving/simulation).</li><li>&gt; The goalkeeper touches the ball with his/her hands after it has been kicked to him/her by a teammate (back-pass rule).</li><li>&gt; Restricting the movement of the goalkeeper by unfairly impeding him/her (e.g. in a corner kick situation).</li></ul>

Table 6 – Free Kick Reasons

## 2.15 Shot Definitions

RunningBall Scouts are trained to enter 4 different types of shots.

**Shot on target:** A shot on target is any shot saved or caught by the goalkeeper or blocked by another player within the goal area (the six-yard box). If the goalkeeper blocks a shot that would have missed the net or hit the woodwork, it is considered a shot on target. If the goalkeeper or a defender deflects a shot to the post or the bar, it is considered a shot on woodwork.

**Shot off target:** A shot off target is a clearly intended shot missing the goal, no matter by how far the target is missed. If a defender who is situated outside the 6-yard box deflects a shot across the goal line for a corner, it is also considered a shot off target.

**Shot on woodwork:** A shot on woodwork means that the ball hits the post or the cross bar. If the ball hits the woodwork after being deflected by the goalkeeper or a defender, it is also considered a shot on woodwork. If a shot directly enters the goal after having hit the woodwork, it is a goal. Shot on woodwork is not entered in this case, but only goal.

**Shot blocked:** A blocked shot is a shot that is blocked by a player of the defending team (except the goalkeeper) or by a team-mate of the player who made the shot, in a way that it does not reach the goal area. If a shot is only deflected by a player, but it is not a proper block, so that the ball still goes into the direction of the goal, it is considered a shot on/off target/on

woodwork and not a blocked shot. If a shot is stopped by the goalkeeper or blocked by a player within the goal area (the six-yard box), it is considered a shot on target.

**Note:** RunningBall definitions do not include crosses or passes as shots.

**Note:** RunningBall Scouts are only allowed to enter a shot in Danger State.

## 2.16 Possible Throw-in and Throw-in (TI)

RunningBall Scouts send *Possible TI* (possible throw-in) if they expect that a situation may lead to a throw-in before the throw-in is officially awarded. Clients should interpret this as if it was a throw-in. *No TI* (No Throw-in) will be displayed if there is no throw-in.

Each throw-in is entered by RunningBall Scouts as *TI 1* (throw-in competitor 1) or *TI 2* (throw-in competitor 2). The *Restart* command is used when the ball is back in play.

Due to the nature of the sport, throw-ins can occur in all the zones defined above and for either team, regardless of which team was in possession before the ball crosses the sideline. Throw-ins **do not automatically alter the Game State**, because the team that is awarded the throw-in is not necessarily in possession after the ball is thrown in.

RunningBall Scouts are trained to judge the situation in order to determine which state to choose. Generally, a throw-in in the midfield will not change the Game State, since both teams are equally likely to conquer the ball and proceed with their gameplay.

If, however, all players are in the same half of the pitch and the player executing the throw-in is likely to try throwing it towards the opponent's penalty box, the Scout is trained to enter *Danger* manually.

***Possible TI + TI 1 + Danger 1 + Restart***

Alternatively, if in the same situation the throw-in is executed towards the own goalkeeper without any chance for the opponents to intercept, there is of course no reason to change to *Danger* and the Scout will report *Safe*.

***Possible TI + TI 1 + Safe 1***

Likewise, if a team executes a defensive throw-in in their own half and there is no possibility for the opposing team to conquer the ball to have a goal scoring opportunity, the Scout will report *Safe*.

***Possible TI + TI 1 + Safe 1***

If there is a possibility for the opposing team to conquer the ball to have a goal scoring opportunity, the Scout will report *Danger*.

***Possible TI + TI 1 + Danger 2***

If no throw-in is awarded and the game continues, the Scout will send *No TI*.

## Possible TI + No TI

**Note:** Throw-ins do not automatically alter the Game State, because the team that is awarded the throw-in is not necessarily in possession after it is taken. It is for example a common scenario that when team 1 attacks (*Attack 1*), team 2 is awarded a throw-in (*TI2*). The Game State still is *Attack 1*.

The table below lists throw-in situation and their possible Game States:

Throw-in Scenario	Possible Game State(s) before the Event	Possible Game State(s) when Throw-in Is Carried Out	Common Game State(s) after the Event
Throw-in in the Danger Zone for team 1	Danger 1, Safe 2 (rarely Attack 1)	Danger 1, Safe 2	Safe 2, Attack 2, Danger 1 (rarely: Danger 2)
Throw-in in the Danger Zone for team 2	Danger 2, Safe 1 (rarely Attack 2)	Danger 2, Safe 1	Safe 1, Attack 1, Danger 2 (rarely: Danger 1)
Throw-in in the Attack Zone for team 1	Safe 2, Attack 1, Danger 1	Safe 2, Attack 1, Danger 1	Safe 1, Safe 2, Attack 1, Attack 2, Danger 1, Danger 2
Throw-in in the Attack Zone for team 2	Safe 1, Attack 2, Danger 2	Safe 1, Attack 2, Danger 2	Safe 1, Safe 2, Attack 1, Attack 2, Danger 1, Danger 2
Throw-in in the midfield for team 1	Safe 1, Safe 2, Attack 1, Attack 2	Safe 1, Safe 2, Attack 1, Attack 2	Safe 1, Safe 2, Attack 1, Attack 2, Danger 1, Danger 2
Throw-in in the midfield for team 2	Safe 1, Safe 2, Attack 1, Attack 2	Safe 1, Safe 2, Attack 1, Attack 2	Safe 1, Safe 2, Attack 1, Attack 2, Danger 1, Danger 2
Defensive throw-in for team 1 in the Safe Zone; Players of team 2 may have a scoring opportunity and have a good chance to gain possession of the ball after the throw-in was taken.	Danger 2, Safe 1 (rarely Attack 2)	Danger 2	Safe 1, Danger 2
Defensive throw-in for team 2 in the Safe Zone; Players of team 1 may have a scoring opportunity and have a good chance to gain possession of the ball after the throw-in was taken.	Danger 1, Safe 2 (rarely Attack 1)	Danger 1	Safe 2, Danger 1

Defensive throw-in for team 1 in the Safe Zone. No player of team 2 is likely to be in possession of the ball after the throw-in was taken.

Attack 2, Danger 2, Safe 1

Attack 2, Danger 2, Safe 1

Safe 1

Defensive throw-in for team 2 in the Safe Zone. No player of team 1 is likely to be in possession of the ball after the throw-in was taken.

Attack 1, Danger 1, Safe 2

Attack 1, Danger 1, Safe 2

Safe 2

**Table 7 – Throw-In Situations and their Possible Game States**

## 2.17 Goal Kick (GK)

Each goal kick is entered by RunningBall Scouts as *GK 1* (goal kick competitor 1) or *GK 2* (goal kick competitor 2). The Restart command is used when the ball is back in play. A common event sequence is described below:

***AT 2 + Danger 2 + SH 2 (off target) + Safe 1 + GK 1***

## 2.18 Injury Break

In case there is an injury that requires the medical staff to enter the field of play and treat the player, RunningBall Scouts will enter this as *Injury Break*. When a player of competitor 1 is treated, this will be indicated with *Player Injured 1*. When a player of competitor 2 is treated, this will be indicated with *Player Injured 2*. Some common event sequences are described below:

***Possible TI + TI 1 + Injury Break + Player Injured 1 + Restart***

***AT 1 + Possible FK + Possible FK 1 + Foul 2 + FK 1 (Zone 4) + DFK 1 + Injury Break + Player Injured 2***

Should players of both teams be treated at the same time, both *Player Injured 1* and *Player Injured 2* will be sent.

***AT 1 + Possible FK + Possible FK 1 + Foul 2 + FK 1 (Zone 4) + DFK 1 + Injury Break + Player Injured 1 + Player Injured 2***

## 2.19 Drop Ball

Scouts send *Drop Ball* whenever the game will be continued in such a way. As soon as the drop ball is executed, the Scout will enter *Restart*.

## 2.20 Restart

RunningBall Scouts enter the *Restart* command when the ball is back in play after the following events: free kicks, corner kicks, throw-ins, goal kicks, injury breaks, drop balls and game suspending events. This means that the game continues.

## 2.21 Stoppage Time

The stoppage time is sent as soon as its official duration is announced. If the stoppage time is not announced, *No clear indication (0 minutes)* is sent no later than 30 seconds after the regular full time of the respective period has ended.

## 2.22 Substitution

Substitutions for each team are shown with player specific data (where applicable).

## 2.23 Measuring the Efficiency of the Teams

Two statistics that summarise how effectively the teams play during the game are the *Dangerous Attack* statistics and the *Dangerous Free Kick* statistics.

### 2.23.1 Dangerous Attack

*Dangerous Attack* is created when a team enters the Danger Zone. *Dangerous Attack* is entered only once per state by RunningBall Scouts. Passing the ball back to the Attack Zone after entering the Danger Zone for instance, does not trigger a second *Dangerous Attack*. In this case, RunningBall Scouts wait until the dangerous situation is over. Another definition that clarifies *Dangerous Attack* is "any attack attempt that might result in a goal".

$$AT\ 1 + Danger\ 1 = DAT\ 1$$

$$AT\ 2 + Danger\ 2 = DAT\ 2$$

**Note:** In case a Scout presses *Danger 1* or *Danger 2* - without entering *Attack 1/Attack 2* beforehand - the software automatically creates *Dangerous Attack* as well to avoid missing out statistical data.

### 2.23.2 Dangerous Free Kick

Free kicks that are taken from the opponent's half are automatically *Dangerous Free kicks*. This is also the case if the free kick is in the opponent's half but still in the Safe or Attack Zone.

$$FK\ 1\ (foul) + Danger\ 1 = DFK\ 1$$

$$AT\ 1 + Danger\ 1 + FK\ 1\ (other) = DFK\ 1$$

$$FK\ 2\ (foul) + Danger\ 2 = DFK\ 2$$

***AT 2 + Danger 2 + FK 2 (other) = DFK 2***

## **2.24 Expected Goals (xG)**

RunningBall provides expected goals (xG) information powered by OPTA data. Every shot event generates a value defining the probability of a goal being scored under specific circumstances. The expected goals value (*xG Event*) for any given shot) is a number between 0 and 1. For example, if a shot with a specific set of characteristics is likely to result into a goal one out of 10 times, it has a xG value of 0.100.

During the game, the expected goals value for an individual player (*xG Player*) and the expected goals value for a team (*xG Team*) accumulate with every shot taken.

***xG – Manchester United FC – R. Lukaku (9); xG Event: 0.505; xG Player: 0.875; xG Team: 1.625***

If the player taking a shot had to be adjusted, an updated xG Player value is sent (*xG Update*).

***xG Update – Manchester United FC – M. Rashford (10); xG Event: 0.505; xG Player: 0.505; xG Team: 1.625***

If the circumstance of a shot had to be adjusted, an update (*xG Update*) affecting all xG values is sent.

***xG Update – Manchester United FC – R. Lukaku (9); xG Event: 0.355; xG Player: 0.725; xG Team: 1.475***

## **2.25 Samples of Possible Command Combinations**

Some possible command combinations are described below:

***AT 1 + Danger 1 + Goal 1 ((no.9 (shot))) + Goal Conf 1 + Kickoff 2 + Safe 2***

***AT 1 + Safe 2 + Danger 2 + Goal 2 (no.4 (free kick)) + Goal Conf 2 + Kickoff 1 + Safe 1***

***AT 1 + Danger 1 + SH 1 (on target) + Possible CR 1 + CR 1 (left side) + Restart + SH 1 (off target) + Safe 2 + GK 2***

***AT 2 + Danger 2 + SH 2 (woodwork) + Safe 1***

***AT 1 + Danger 1 + Possible CR 1 + CR 1 (right side) + Restart + Safe 2 + GK 2***

***AT 2 + Danger 2 + Possible FK + Possible FK 1 + FK 1 (offside, zone 5) + Safe 1 + Offside 2 + Restart***

***AT 1 + Possible FK + Possible FK 1 + FK 1 (foul, zone 4) + Danger 1 + DFK + Restart + Safe 2***

***AT 2 + Danger 2 + Possible PEN + Possible PEN 2 + No PEN + Safe 1 + GK 1***

***AT 1 + Possible TI + TI 1 + Restart + Danger 2 + SH 2 (off target) + Safe 1 + GK 1***



## 2.26 Score Confirmation after Period End

After the end of each period the Scouts send the corresponding *Stop Period* event (e.g. *Stop 1<sup>st</sup> half regular time*, *Stop 2<sup>nd</sup> half extra time* etc.). Then they double check the statistics of the most important events. If everything is correct, they will send *Score of last period confirmed*. No action should be taken until this confirmation.

## 2.27 VAR

Each situation that is reviewed by a VAR is indicated by a *VAR started* command. If determined clearly, the event under review will be indicated. Otherwise *Unknown* will be sent. The possible reasons for a VAR review are the following:

- > *Unknown*
- > *Goal*
- > *Penalty*
- > *Card*

In case Goal is selected as reason for the VAR review, *Goal under investigation* is sent in addition. Once the review was finalised and the investigated situation was clarified, *VAR finished* will be sent. Some possible command combinations are described below:

***AT 1 + Danger 1 + Goal 1 + VAR started + VAR reason (Goal) + Goal under investigation + Cancel Goal 1 + VAR finished + Possible FK + Possible FK 2 + FK2 (offside, zone 5) + Safe 2 + Restart***

***AT 2 + Danger 2 + Possible PEN + Possible PEN2 + PEN 2 + VAR started + VAR reason (Penalty) + Cancel PEN 2 + VAR finished + Possible FK + Possible FK 1 + FK 1 (dive, zone 5) + Safe 1 + Restart***

***AT 1 + Possible FK + Possible FK 1 + FK 1 (foul, zone 4) + Danger 1 + DFK + VAR started + VAR reason (Unknown) + RC 2 (number 3 (assault)) + RC 2 Conf + VAR finished + Restart + Safe 2***

***AT 1 + Danger 1 + Possible FK + Possible FK 1 + Possible Card + FK 1 (foul, zone 2) + Danger 1 + YC 2 (number 6 (foul)) + VAR started + VAR reason (Card) + RC 1 (number 9 (unsportsmanlike behaviour)) + VAR finished + Restart + Safe 1***

In case a goal is confirmed by VAR review, the Scout will wait until the kick-off is taken before confirming the goal and stop the VAR sequence beforehand. A possible command combination is described below:

***AT 2 + Danger 2 + Goal 2 (no. 9 (shot)) + VAR started + VAR reason (Goal) + Goal under investigation + VAR finished + Confirm Goal 1 + Kickoff 2 + Safe 1***

If *VAR started* was sent but no video review was undertaken for any reason, *No VAR* will be sent.

A possible command combination is described below:

***AT 2 + Danger 2 + Goal 2 (no. 12 (free kick)) + VAR started + No VAR + VAR finished + Goal Conf 2 + Kickoff 1 + Safe 2***

## 2.28 Event Prioritisation & Disconnection Handling

### 2.28.1 Event Categories

RunningBall has classified the events into three categories. In general, all events are sent as they happen, but the Scouts are trained to avoid sending subordinated commands in case there is an imminent danger of a more important event. For example, a shot on goal is not sent if the goalkeeper is not able to bring the ball under control and there is still a scoring chance for the opposing team.

Event Category	Description
Category 1	<p>These events are the most important. They must be entered without any delay.</p> <ul style="list-style-type: none"><li>&gt; Penalties</li><li>&gt; Red cards</li><li>&gt; Goals</li><li>&gt; Kick-offs</li><li>&gt; Period Start</li><li>&gt; Period Stop</li></ul>
Category 2	<ul style="list-style-type: none"><li>&gt; Yellow cards</li><li>&gt; Corner kicks</li><li>&gt; Free kicks</li></ul>
Category 3	<ul style="list-style-type: none"><li>&gt; Shots</li><li>&gt; Throw-ins</li><li>&gt; Free-throws</li><li>&gt; Goal kicks</li><li>&gt; All other events</li></ul>

Table 8 – Event Categories Soccer

### 2.28.2 Score Confirmation & Correction after Disconnections

In case the Scout is disconnected, the state of the game is automatically switched to *Danger* if it was in *Safe* or *Attack* before the disconnection. The message *Scout offline* is also sent. As soon as the connection is re-established, the statistics of the most important events are either confirmed or updated by the Scout if any important events occurred during the disconnection.

If any goals, penalties, cards or corners occurred during the disconnection, they are sent in between the *Updating score* and the *Score updated* events. In case nothing important was missed, the command sequence *Updating score*, *Statistic confirmation* and *Score updated* is sent.

All missed Category 1 Events are sent before the missed yellow cards and corner kicks.

Some possible command combinations are described below:

***Updating score + Statistic confirmation + Score updated***

***Updating score + CR 1 + Score updated***

**Updating score + YC/RC 1 (Unknown (foul)) + YC 2 (Unknown (foul)) + Score updated**

**Updating score + Goal 2 (Unknown (free kick)) + Goal Conf 2 + Kickoff 2 + Score updated**

In case of a VAR review during the disconnection, the *VAR started* will be sent after the *Updating Score* event. After *VAR finished* is sent and all events are correct, *Score updated* will be sent.

**Updating score + PEN 2 + VAR started +VAR reason (Penalty) + Cancel PEN 2 + VAR finished + Score updated**

In case a goal is confirmed via VAR review during the disconnection, the Scout will wait until the kick-off is taken before confirming the goal and stop the VAR sequence beforehand. A possible command combination is described below:

**Updating score + Goal 2 (Unknown (header)) + VAR started +VAR reason (Goal) + VAR finished + Goal Conf 2 + Kickoff 2 + Score updated**

## 2.29 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in soccer is provided in the table below.

System Message	Description
Please hold on, the connection in this area is down.	This message indicates that our Scout is facing connection issues.
Please hold on, we are rechecking the score.	This message indicates that the current game score is being investigated.
Please hold on, our coverage might start with a delay.	This message indicates that there is doubt that our coverage can be started on time.
Please hold on, we are trying to solve the problem.	This message indicates that we are working on a solution for a problem.
Please hold on, we are rechecking the number of red cards.	This message indicates that the current red card score is being investigated.
Please hold on, we are rechecking the number of yellow/red cards.	This message indicates that the current yellow/red card score is being investigated.
Please hold on, we are rechecking the number of corners.	This message indicates that the current corner score is being investigated.
Please hold on, we are rechecking the number of yellow cards.	This message indicates that the current yellow card score is being investigated.
Please hold on, we are rechecking the number of penalty shots.	This message indicates that the current penalty statistics are being investigated.
The score is correct: (%SCORE%)	This message confirms that our current game score is correct after we have investigated it.
The number of red cards is correct: (%SCORE%)	This message confirms that our current red card score is correct after we have investigated it.

System Message	Description
The number of yellow/red cards is correct: (%SCORE%)	This message confirms that our current yellow/red card score is correct after we have investigated it.
The number of corners is correct: (%SCORE%)	This message confirms that our current corner score is correct after we have investigated it.
The number of yellow cards is correct: (%SCORE%)	This message confirms that our current yellow card score is correct after we have investigated it.
The number of penalties is correct: (%SCORE%)	This message confirms that our current penalty score is correct after we have investigated it.
The number of substitutions is correct: (%SCORE%)	This message confirms that our current substitution score is correct after we have investigated it.
The game has been restarted.	This message indicates that a suspended game has been restarted.
The game is suspended due to a power blackout at the venue.	This message indicates that the game is suspended due to a power blackout at the venue.
The game is suspended due to crowd trouble.	This message indicates that the game is suspended due to crowd trouble.
The game is suspended due to bad weather conditions.	This message indicates that the game is suspended due to bad weather conditions.
The game is suspended due to fog.	This message indicates that the game is suspended due to fog.
The game is suspended due to pyrotechnics being fired.	This message indicates that the game is suspended due to pyrotechnics being fired.
The game is suspended due to fighting players.	This message indicates that the game is suspended due to fighting players.
The game is suspended due to an injured referee.	This message indicates that the game is suspended due to an injured referee.
The game is suspended due to an unknown reason.	This message indicates that the game is suspended due to an unknown reason.
The game is suspended due to a water break.	This message indicates that the game is suspended due to a water break.
The game is suspended due to broken equipment.	This message indicates that the game is suspended due to broken equipment.
The game is suspended due to a serious injury.	This message indicates that the game is suspended due to a serious injury.
The game is suspended due to an injured player.	This message indicates that the game is suspended due to a player being injured.
The game is suspended but no official announcement was made at the venue.	This message indicates that the game is suspended but that no official announcement at the venue has been made.
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.

System Message	Description
We are sorry, we have to cancel our coverage of this game due to an unavailable connection in this area.	This message indicates that we cannot offer the game anymore due to an unavailable GPRS network in the area of the venue.
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to bad pitch conditions.	This message indicates that the game had been officially cancelled due to bad pitch conditions.
The game is officially cancelled due to a waterlogged pitch.	This message indicates that the game had been officially cancelled due to the pitch being waterlogged.
The game is officially cancelled due to a frozen pitch.	This message indicates that the game had been officially cancelled due to the pitch being frozen.
The game is officially cancelled due to heavy snow.	This message indicates that the game had been officially cancelled due to heavy snow.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE% CET. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Our coverage will start in time.	This message indicates that we are able to start our coverage in time in case there has been any doubt on the matter.
There is an official delay of the game start.	This message indicates that the game will start with an official delay.
Our coverage started with %SEC% seconds delay.	This message indicates that our coverage started with delay and informs about the delay in seconds.
Our coverage started with %SEC% seconds delay due to technical problems.	This message indicates that our coverage started with delay due to technical problems and informs about the delay in seconds.
Our coverage is continued via TV due to technical problems.	This message indicates that the game is covered via TV until the technical problems are solved.
Our coverage of this game is changed from Live to TV.	This message indicates that our coverage of the game is changed from Live to TV.
The game will be covered live from the venue.	This message indicates that the game is covered by a Scout from the venue.
The game will be played on a neutral venue.	This message indicates that the game will be played on a neutral venue.

System Message	Description
Our coverage was started in time.	This message indicates that our coverage was started in time in case there has been any doubt on the matter.
Our coverage is temporarily suspended due to a commercial break during the TV broadcast.	This message indicates that our coverage of the TV game is temporarily suspended due to a commercial break.
Our coverage is suspended.	This message indicates that our coverage is suspended.
The new game start time is %TIME% CET.	This message indicates a new official game start time.
The game will be played at the venue of %COMP1%.	This message indicates that the game will be played at the venue of competitor 1.
The game will be played at the venue of %COMP2%.	This message indicates that the game will be played at the venue of competitor 2.
The game officially started at %TIME% CET.	This message indicates that the game was officially started but with a significant difference to the pre-announced game start time.
Our game start time is correct.	This message confirms that our scheduled game start time is confirmed.
Our coverage is suspended due to a TV broadcasting problem.	This message indicates that our coverage is suspended due to a TV broadcasting issue.
There is an official delay of the game start due to a late arrival of the competitors.	This message indicates that there is an official delay of the game start due to late arrival of the competitors.
The new game start date is %DATE% CET.	This message indicates the new official game start date.
There is an official delay of the game start due to crowd trouble.	This message indicates that there is an official delay of the game start due to crowd trouble.
The new game start date is %DATE% CET. Our coverage is not confirmed yet.	This message indicates that there is a new official game start date and that it is not confirmed yet if we will offer the game.
Our coverage of this game is changed from Live to TV. The expected delay of the TV picture is %SEC% seconds.	This message indicates that our coverage of the game is changed from Live to TV and informs about the expected delay of the TV picture in seconds.
Sin Bin: The current number of players on the field is: %PH1% vs. %PH2%	This message indicates the current number of players on the field after one or multiple players were temporarily dismissed
The number of players on the field is correct: %PH1% vs. %PH2%	This message indicates the current number of players on the field after we have investigated it.
A field player of %COMP1% is acting as a goalkeeper.	This message indicates that a field player of competitor 1 took over the goal keeper position.
A field player of %COMP2% is acting as a goalkeeper.	This message indicates that a field player of competitor 2 took over the goal keeper position.
There will be no extra time. A direct penalty shootout will be taken.	This message indicates that there will be no extra time but a direct penalty shootout will be taken.
A red card was shown but no player has been sent off.	This message indicates that a red card was shown but no player has been sent off.

System Message	Description
A bench player of %COMP1% received a red card.	This message indicates that a bench player of competitor 1 received a red card.
A bench player of %COMP2% received a red card.	This message indicates that a bench player of competitor 2 received a red card.
An injured player of %COMP1% left the field but no more substitutions are available.	This message indicates that an injured player of competitor 1 left the field and that he/she was not substituted.
An injured player of %COMP2% left the field but no more substitutions are available.	This message indicates that an injured player of competitor 2 left the field and that he/she was not substituted.
The coach of %COMP1% got ejected.	This message indicates that the coach of competitor 1 got ejected from the game.
The coach of %COMP2% got ejected.	This message indicates that the coach of competitor 2 got ejected from the game.
There is an official delay of the game start because the previous game at this venue is still running.	This message indicates that the game start will be officially delayed because the previous game at this venue is still running.
A bench player of %COMP1% received a yellow card.	This message indicates that a bench player of competitor 1 received a yellow card.
A bench player of %COMP2% received a yellow card.	This message indicates that a bench player of competitor 2 received a yellow card.
The next period will start with an official delay.	This message indicates that there is an official delay of the start of the next game period.
There is an official delay of the game start. The referees did not arrive yet.	This message indicates an official delay of the game start because the referees did not arrive yet.
There is an official delay of the game start. The players are still warming up.	This message indicates an official delay of the game start due to the players still warming up.
%COMP1% started the first half.	This message indicates that competitor 1 started the first half of the game.
%COMP2% started the first half.	This message indicates that competitor 2 started the first half of the game.
%COMP1% started the second half.	This message indicates that competitor 1 started the second half of the game.
%COMP2% started the second half.	This message indicates that competitor 2 started the second half of the game.
Our coverage of the game was started prematurely. The game was reset and has not started yet.	This message indicates that our coverage of the game was started prematurely and that it has been reset.
Our coverage of the game was stopped prematurely. The game was reopened and is still running.	This message indicates that our coverage of the game was stopped prematurely and that it has been reopened.
Our coverage of the game is continued by phone due to technical problems.	This message indicates that our coverage of the game will be done by phone until our Scout is able to send commands again.
The regular game time is %COUNT% x %MIN% minutes.	This message indicates the official duration of the regular game time duration.



System Message	Description
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

**Table 9 – System Messages – Soccer**



# 3 Command Logic Basketball

## 3.1 State Logic

RunningBall shows which team is in possession of the ball with the following events:

- > *BALL 1* (Ball possession competitor 1)
- > *BALL 2* (Ball possession competitor 2)

The ball possession is constantly monitored and updated in the system by the Scout. Due to the speed of the game it is not possible to provide detailed state/zone information like in soccer.

## 3.2 Match Play Modes

### FIBA Rules

The FIBA rule set is applied by default. This includes the definition of the statistical values as well as the structure of the game (four quarters).

### NBA Rules

The basic rules are the same but there are some differences concerning the length of the quarters.

### NCCA Rules

With the NCAA configuration, it is specified that the game is divided into two halves instead of four quarters as usual.

### Overtime

In case a match ends with a draw after the regular game time, overtime will be played. Various overtimes – each running for a predefined time – are possible. Overtime can be started multiple times and all statistical values that are generated throughout the different played overtime periods are summed up in the overtime statistics; there is no differentiation if points were scored during the first, second or subsequent overtime period.

## 3.3 Game Clock Handling

One of the key features in basketball is the game clock handling. RunningBall is keen to provide a very accurate (on the second) clock information at all times as this is crucial for trading purposes.

### 3.3.1 Game Clock Stop

The Scout has the possibility to stop the clock manually in case there is a situation where the ball is out of play but it is not yet clear what the referee will decide (throw-in, foul etc.). This option is provided so that the clock remains in sync with the official game clock also during critical situations.

Furthermore, in various situations the game clock will also be stopped automatically based on a logical event order. The following events trigger an automatic stop of the game clock (if it has not happened before):

- > *FOUL 1/FOUL 2*
- > *TIME (neutral time-out)/TIME 1/TIME 2*
- > *STOP\_QUARTER*
- > *THROW-IN 1/THROW-IN 2*

### 3.3.2 Game Clock Start

The Scout has the possibility to start the clock manually although in most cases the clock will be started automatically based on the following events (if it has not happened before):

- > *BALL 1/BALL 2*
- > *START\_QUARTER*

### 3.3.3 Game Clock Adjustment

Although RunningBall and its Scouts take all measures to keep the game clock synchronised, it is still possible that it differs from the official scoreboard (time changes by the officials, late reaction in a particular situation). In such a case it is possible for the Scout to send a *Game clock adjustment* event to correct the game clock accordingly.

The Scout has the possibility to make corrections when there is a break, but also while the ball is in play. The predefined steps in which the Scout can do immediate corrections are +/-2 and +/-5 seconds. Nevertheless, it is also possible to enter the exact scoreboard time manually (e.g. the coverage of a game started late, thus a time correction of the current game time will be made).

## 3.4 BALL 1/BALL 2

The *BALL* event is the key event to determine the ball possession and is the basis for the automatically generated events. This event is also used to continue the game after a pending situation (e.g. foul, out of bounds, throw-in etc.).

Some common event sequences are described below:

***BALL 1 + 2PTs 1 + Pt Conf 1***

***BALL 1 + TO 1 + STEAL 2 + BALL 2***

## 3.5 Jump Ball Winner

The following events are used to indicate the winner of a jump ball at the start of the 1<sup>st</sup> period. The events to indicate the outcome of the jump ball are *JBW 1*, *JBW 2* or *JBW unknown*.

A common event sequence is the following:

***Start 1<sup>st</sup> Quarter + JBW 2 + POSS ARROW 1 + BALL 2***

### 3.6 Possession Arrow

The possession arrow events *POSS ARROW 1* and *POSS ARROW 2* indicate which team will start the consecutive period. The event is sent after the first jump ball winner in the game has been indicated. After the start of the consecutive period, the possession arrow will change to the respective other team.

A common event sequence is the following:

***Start 1<sup>st</sup> Quarter + JBW 1 + POSS ARROW 2 + BALL 1***

If *JBW unknown* was sent as the outcome of the jump ball was unclear, the possession arrow will be defined before the first score event is sent.

### 3.7 Rebound

There are two types of rebounds. Offensive rebounds, in which the ball is recovered by the attacking team and the possession does not change, and defensive rebounds, in which the defending team gains possession. The events used to report rebound situations are *ROFF* (offensive rebound) or *RDEF* (defensive rebound) and they indicate which team won the rebound.

Some common event sequences are described below:

***BALL 1 + Miss 2PTs 1 + ROFF 1 + 2 PTs 1 + Pt Conf 1***

***BALL 1 + Miss 2PTs 1 + RDEF 2 + BALL 2 + 2 PTs 2 + Pt Conf 2***

### 3.8 Turnover

In basketball, a turnover occurs when a team loses possession of the ball to the opposing team before a player takes a shot at his/her team's basket. This mostly results from a player making mistakes such as stepping out of bounds, a double dribble, having a pass intercepted, throwing the ball out of bounds etc. The events triggered in turnover situations are *TO 1* and *TO 2*.

In the RunningBall system a turnover is triggered if the ball possession changes due to a steal or when the ball goes out of bounds which results in a throw-in. Please see the following two chapters for event sequence examples.

#### 3.8.1 Steal

A steal occurs when a defending player actively causes a turnover. This can be done by either deflecting and controlling the ball, or by catching a pass or dribble of an offensive player. The events that are triggered in a forced turnover situation are *STEAL 1* and *STEAL 2*.

A common event sequence is the following:

***BALL 1 + TO 1 + STEAL 2 + BALL 2***

***BALL 2 + TO 2 + STEAL 1 + BALL 1***

### 3.8.2 Throw-In

In basketball, the throw-in inbounds the ball after the ball has been played out of bounds or after a player stepped out of bounds with the ball in hand. The events are triggered in throw-in situations are *TI 1* and *TI 2*.

A common event sequence is the following:

***BALL 1 + Game clock stop + TO 1 + BALL 2 + TI 2***

***TI 2 + TO 2 + BALL 1 + TI 1***

## 3.9 Points

The key information of a basketball match is the point score. The events that are used to report scored baskets are *1PT*, *2PTs* and *3PTs* for the respective team.

Furthermore, combined statistics are provided:

- > FT statistics: percentage of scored in relation to the total FTs.
- > Field goal (FG) statistics: percentage of the scored 2PT and 3PT shots in relation to the total scored baskets.

RunningBall also provides statistics on the scored and missed free throws:

- > *1PT / Missed FT*

After every scored basket and free throw situation, the *Pt Conf* (point confirmation) event is sent as soon as the referee makes a decision about the new point score. Customers should not take any actions before the *Pt Conf* is sent.

Some common event sequences are described below:

***BALL 1 + 2PTs 1 + Pt Conf 1***

***BALL 2 + 3PTs 2 + Pt Conf 2***

It may happen that a *2PT* event has to be changed to a *3PT* event or vice versa if the referee's decision is not clear right away. In such a situation, the Scout will cancel the wrong event and send the correct number of points before the score is confirmed.

***3PTs 1 + Cancel 3PT 1 + 2PTs + 1Pt Conf 1***

In case the referees check if a basket was scored in time before the end of a period, *Point under investigation* is sent.

***2PT 2 + Point under investigation + Cancel 2PT + Stop Quarter***

RunningBall also provides information on missed scoring attempts. When a scoring attempt was missed, either *Miss 2PTs* or *Miss 3PTs* will be sent, depending on the distance of the attempt from the basket.

Some common event sequences are described below:

***BALL 1 + Miss 2PTs + 2 PTs + ROFF 1 + Pt Conf 1***

**BALL 2 + Miss 3PTs + BALL 1 + RDEF 1 + 2 PTs + Pt Conf 1**

### 3.10 Foul

As soon as the game is stopped due to a foul, the Scout will send a *FOUL* event for the respective team. This will stop the game clock and automatically generate the *Possible FT* event.

After the foul has been entered, the subsequent information like *1/2/3FT*, *No FT*, *P FOUL*, *T/I FOUL* or *FO* is specified when the situation is clarified.

#### 3.10.1 Possible FT/FT/No FT

A possible free throw (*Possible FT*) event is automatically generated every time the Scout sends the *FOUL* event to give a prior warning that a free throw may be awarded to a particular team. The clarification of such a situation can either happen by entering the number of free throws awarded (*1FT*, *2FT* or *3FT*) or, in case there is no free throw awarded, the Scout has to send a *No FT* event.

Some possible event combinations are described below:

***FOUL 1 + Possible FT + No FT***

***FOUL 1 + Possible FT + 1FT 2***

***FOUL 1 + Possible FT + 2FT 2***

***FOUL 1 + Possible FT + 3FT 2***

It is also possible that further events like *FO* or *T/I FOUL* are entered in between such event combinations.

Every sent free throw is followed by either a *1PT* or a *Missed FT* event. As soon as all the free throws have been made, the *Pt Conf* event is sent to confirm the score.

***BALL 2 + Game clock stop + FOUL 1 + Possible FT + 3FT 2 + P FOUL 1 + 1PT 2 + Missed FT 2 + 1PT 2 + Pt Conf 2***

#### 3.10.2 Personal Foul

Every foul that takes place on the court also leads to a personal foul for a particular player of the team. A RunningBall Scout provides the information that a foul (personal foul) took place, but no details about the player who received that personal foul. The *P FOUL* will be created automatically (depending on the next event) and is not entered by the Scout directly. This might lead to a minor delay in the provision of the *P FOUL* events.

Some common event sequences are described below:

***FOUL 1 + Possible FT + 1/2/3FT 2 + P FOUL 1*** (*P FOUL* created with the input of the *FT* event)

***FOUL 1 + Possible FT + No FT + P FOUL 1*** (*P FOUL* created with the input of the *No FT* event)

**FOUL 1 + Possible FT + T/I FOUL 1 + P FOUL 1** (the Scout has to determine if it is also a *P FOUL*)

**FOUL 1 + Possible FT + FO 1 + 1/2/3FT 2 + P FOUL 1** (*P FOUL* created with the input of the *FT* event)

### 3.10.3 Technical/Intentional Foul

For every technical or intentional foul, the other team gets rewarded with 2 free throws and keeps possession of the ball. In this case, a technical/intentional foul is entered first and then 2 *FT* will be sent.

A common event sequence is the following:

**FOUL 1 + Possible FT + T/I FOUL 1 + P FOUL 1 + 2FT 2**

## 3.11 Fouled Out/Disqualified Player

When a player commits his/her 5th foul (FIBA), 6th foul (NBA), he/she has to leave the court and is not allowed to play in this game anymore.

If the Scout is able to see the number of the player, he/she will also provide this information about the player who fouled out or got disqualified due to misbehaviour.

## 3.12 Time-outs

Time-outs are at first reported as neutral events to show that a time-out has been taken and to ensure that the game clock is stopped. As soon as it is officially specified, the *Time-out Competitor 1* or *Time-out Competitor 2* event is sent.

In case a time-out betting market exists, it has to be suspended based on the neutral time-out information and NOT on the team based time-out event.

**TIME** (neutral) + **TIME 1**

**TIME** (neutral) + **TIME 2**

## 3.13 Player Injured/Player Back in Game

In addition to the reporting of key team based statistics, RunningBall will also provide additional player details, such as if a player of the team is out of the game (due to an injury) or is back in the game (after a medical treatment, when it was reported earlier that this player is not in the game anymore).

The information provided is the player number of the player who leaves the court or comes back to the court or the bench.

### 3.14 Score Confirmation after Period End

After the end of each period the Scouts send the corresponding *Stop Period* event (e.g. *Stop Quarter*, *Stop game* etc.). Then they double check the statistics of the most important events. If everything is correct, they will send *Score of last period confirmed*. We recommend not reopening your markets until the final confirmation.

### 3.15 Event Prioritisation & Disconnection Handling

#### 3.15.1 Event Categories

RunningBall has classified the events into three categories. In general, all events are sent as they happen, but the Scouts are trained to avoid sending subordinated commands in case there is an imminent danger of a more important event. For example, if a Scout notices that a player is disqualified after the 5<sup>th</sup> foul, but free throws are about to be taken, the *Disq. Player* event may be sent after the free throw situation.

Event Category	Description
Category 1	These events are the most important. They must be entered without any delay. > Points > Time Stamp > Period Start > Period Stop
Category 2	> Foul > Free Throws > Fouled Out
Category 3	> Time-outs > Disqualified Player > Possession > All other events

Table 10 – Event Categories Basketball

#### 3.15.2 Score Confirmation & Correction after Disconnections

In case the Scout is disconnected, the state of the game is automatically switched to *Danger* and *Scout offline* is sent. As soon as the connection is re-established, the statistics of the most important events are either confirmed or updated if any such events occurred during the disconnection.

If any points, fouls or free throws occurred during the disconnection, they are sent in between the *Updating score* and the *Score updated* events. In case nothing important was missed, the command sequence *Updating score*, *Statistic confirmation* and *Score updated* is sent.

All events are sent in the correct order as they happened in the game.

Some possible command combinations are described below:

**Updating score + Statistic confirmation + Score updated**

**Updating score + 2PTs 1 + Score updated**

**Updating score + FOUL 2 + Possible FT + 2FT 1 + P FOUL 2 + Missed FT 1 + 1PT 1 + Pt Conf 1 + 2PTs 2 + Score updated**

### 3.16 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in basketball is provided in the table below.

System Message	Description
Please hold on, the connection in this area is down.	This message indicates that our Scout is facing connection issues.
Please hold on, we are rechecking the score.	This message indicates that the current game score is being investigated.
Please hold on, our coverage might start with a delay.	This message indicates that there is doubt that our coverage can be started on time.
Please hold on, we are trying to solve the problem.	This message indicates that we are working on a solution for a problem.
Please hold on, the referees are rechecking the score.	This message indicates that the referees are rechecking the game score.
Please hold on, we are rechecking the foul score.	This message indicates that the current foul score is being investigated.
The score is correct: (%SCORE%)	This message confirms that our current game score is correct after we have investigated it.
The statistics are confirmed.	This message indicates that our Category 1 and Category 2 scores are correct.
The foul score for quarter (%QUARTER%) is correct: (%SCORE%)	This message confirms that our current foul score in the respective quarter is correct after we have investigated it.
The number of personal fouls is correct: (%SCORE%)	This message confirms that our current number of personal fouls is correct after we have investigated it.
The foul score is correct: %SCORE% The game has been restarted.	This message confirms that our current foul score is correct after we have investigated it.
The game is suspended due to a power blackout at the venue.	This message indicates that a suspended game has been restarted.
The game is suspended due to crowd trouble.	This message indicates that the game is suspended due to crowd trouble.
The game is suspended due to bad weather conditions.	This message indicates that the game is suspended due to bad weather conditions.
The game is suspended due to fog.	This message indicates that the game is suspended due to fog.
The game is suspended due to pyrotechnics being fired.	This message indicates that the game is suspended due to pyrotechnics being fired.



System Message	Description
The game is suspended due to fighting players.	This message indicates that the game is suspended due to fighting players.
The game is suspended due to an injured referee.	This message indicates that the game is suspended due to an injured referee.
The game is suspended due to an unknown reason.	This message indicates that the game is suspended due to an unknown reason.
The game is suspended due to a pending table officials' decision.	This message indicates that the game is suspended due to a pending table officials' decision.
The game is suspended due to broken equipment.	This message indicates that the game is suspended due to broken equipment.
The game is suspended due to a serious injury.	This message indicates that the game is suspended due to a serious injury.
The game is suspended. The referees are rechecking the last play.	This message indicates that the game is suspended because the referees are rechecking the last play.
The game is suspended due to an injured player.	This message indicates that the game is suspended due to a player being injured.
The game is suspended due to a commercial break.	This message indicates that the game is suspended due to a commercial break.
The game is suspended. The referee is adjusting the scoreboard.	This message indicates that the game is suspended because the referee is adjusting the scoreboard.
The game is suspended. The referees are adjusting the game clock.	This message indicates that the game is officially suspended because the referees are correcting the game clock.
The game is suspended but no official announcement was made at the venue.	This message indicates that the game is suspended but that no official announcement at the venue has been made.
The game is suspended. The referees are rechecking the score.	This message indicates that the game is suspended due to the referees rechecking the game score.
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.
We are sorry, we have to cancel our coverage of this game due to an unavailable connection in this area.	This message indicates that we cannot offer the game anymore due to an unavailable GPRS network in the area of the venue.
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.

System Message	Description
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE% CET. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Our coverage will start in time.	This message indicates that we are able to start our coverage in time in case there has been any doubt on the matter.
There is an official delay of the game start.	This message indicates that the game will start with an official delay.
Our coverage started with %SEC% seconds delay.	This message indicates that our coverage started with delay and informs about the delay in seconds.
Our coverage started with %SEC% seconds delay due to technical problems.	This message indicates that our coverage started with delay due to technical problems and informs about the delay in seconds.
Our coverage of this game is changed from Live to TV.	This message indicates that our coverage of the game is changed from Live to TV.
The game will be covered live from the venue.	This message indicates that the game is covered by a Scout from the venue.
The game will be played on a neutral venue.	This message indicates that the game will be played on a neutral venue.
Our coverage was started in time.	This message indicates that our coverage was started in time in case there has been any doubt on the matter.
Our coverage is temporarily suspended due to a commercial break during the TV broadcast.	This message indicates that our coverage of the TV game is temporarily suspended due to a commercial break.
Our coverage is suspended.	This message indicates that our coverage is suspended.
The new game start time is %TIME% CET.	This message indicates a new official game start time.
The game will be played at the venue of %COMP1%.	This message indicates that the game will be played at the venue of competitor 1.
The game will be played at the venue of %COMP2%.	This message indicates that the game will be played at the venue of competitor 2.
The game officially started at %TIME% CET.	This message indicates that the game was officially started but with a significant difference to the pre-announced game start time.
Our game start time is correct.	This message confirms that our scheduled game start time is confirmed.
Our coverage is suspended due to a TV broadcasting problem.	This message indicates that our coverage is suspended due to a TV broadcasting issue.

System Message	Description
There is an official delay of the game start due to a late arrival of the competitors.	This message indicates that there is an official delay of the game start due to late arrival of the competitors
The new game start date is %DATE% CET.	This message indicates the new official game start date.
There is an official delay of the game start due to crowd trouble.	This message indicates that there is an official delay of the game start due to crowd trouble.
The new game start date is %DATE% CET. Our coverage is not confirmed yet.	This message indicates that there is a new official game start date and that it is not confirmed yet if we will offer the game.
Our coverage of this game is changed from Live to TV. The expected delay of the TV picture is %SEC% seconds.	This message indicates that our coverage of the game is changed from Live to TV and informs about the expected delay of the TV picture in seconds.
An injured player of %COMP1% left the field but no more substitutions are available.	This message indicates that an injured player of competitor 1 left the field and that he/she was not substituted.
An injured player of %COMP2% left the field but no more substitutions are available.	This message indicates that an injured player of competitor 2 left the field and that he/she was not substituted.
The table officials corrected the current game score.	This message indicates that the game score was changed by the table officials.
The table officials adjusted the current game time.	This message indicates that the game time was adjusted by the table officials.
The game is not finished yet. The referees are rechecking the score.	This message indicates that the game is not finished yet and that the game score might still change.
The coach of %COMP1% got ejected.	This message indicates that the coach of competitor 1 got ejected from the game.
The coach of %COMP2% got ejected.	This message indicates that the coach of competitor 2 got ejected from the game.
There is an official delay of the game start because the previous game at this venue is still running.	This message indicates that the game start will be officially delayed because the previous game at this venue is still running.
A technical foul was committed during the break. The free throw awarded to %COMP1% will be taken before the next quarter starts.	This message indicates that a technical foul was committed during the break and that a free throw for competitor 1 will be taken before the next quarter start.
A technical foul was committed during the break. The free throw awarded to %COMP2% will be taken before the next quarter starts.	This message indicates that a technical foul was committed during the break and that a free throw for competitor 2 will be taken before the next quarter start.
The next period will start with an official delay.	This message indicates that there is an official delay of the start of the next game period.
There is an official delay of the game start. The referees did not arrive yet.	This message indicates an official delay of the game start because the referees did not arrive yet.
There is an official delay of the game start. The players are still warming up.	This message indicates an official delay of the game start due to the players still warming up.

System Message	Description
The score has been corrected after the game was stopped. The correct score is %SCORE%.	This message indicates that the officials changed the game score after the game had been stopped.
Our coverage of the game was started prematurely. The game was reset and has not started yet.	This message indicates that our coverage of the game was started prematurely and that it has been reset.
Our coverage of the game was stopped prematurely. The game was reopened and is still running.	This message indicates that our coverage of the game was stopped prematurely and that it has been reopened.
Our coverage of the game is continued by phone due to technical problems.	This message indicates that our coverage of the game will be done by phone until our Scout is able to send commands again.
The regular game time is %COUNT% x %MIN% minutes.	This message indicates the official duration of the regular game time duration.
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

**Table 11 – System messages – Basketball**

# 4 Command Logic Ice Hockey

## 4.1 State Logic

The number of players on the ice is kept up to date in the system at all times. Suspensions and goalkeepers leaving the ice for additional field players are the key events that influence this important figure.

RunningBall reports the position of the puck on the field with the following events:

- > *Attacking Half 1* (puck within the half of team 2)
- > *Attacking Half 2* (puck within the half of team 1)

The puck position is constantly monitored and updated in the system by the Scout. Due to the speed of the game, it is not possible to provide detailed state/zone information like in soccer.

## 4.2 Match Play Modes

### IIHF Rules

The IIHF rule set is applied by default. This includes the definition of the statistical values as well as the structure of the game (three thirds).

### NHL Rules

The basic rules are the same but there are some differences, for instance the size of the ice rink.

### Overtime

In case a match ends with a draw after three thirds, overtime will be played. In a game where a winner shall be declared, the game will be prolonged by a "sudden death" overtime period.

If no goal is scored, game winning shots (penalty shots) will determine the winner.

## 4.3 Game Clock Handling

One of the key features in ice hockey is the game clock handling. RunningBall is keen to provide a very accurate (on the second) clock information at all times as this is crucial for trading purposes.

Whenever there is a break in the game, our game clock stops automatically.

### 4.3.1 Game Clock Stop

The game clock will stop automatically whenever the Scout enters a *FO* or *GOAL 1/2*. *Possible SUSP* only stops the clock if the game is indeed interrupted.

Furthermore, the Scout has the possibility to start and stop the clock manually in case the clock does not stop automatically.

#### 4.3.2 Game Clock Start

The Scout can start the clock manually although the clock will be started automatically in most cases based on the following event:

- > *Face-off done*

#### 4.3.3 Game Clock Adjustment

Although RunningBall and its Scouts take all measures to keep the official game time and the system game time synchronised, it is still possible that differences occur (time changes by the officials, late reaction in one particular situation). In such a case, it is possible for the Scout to send a *Game clock adjustment* event to correct the game clock.

The Scout has the possibility to make corrections when there is a break, but also while the puck is in play. The predefined steps in which the Scout can make immediate corrections are +/-2 and +/-5 seconds. Nevertheless, it is also possible to enter the exact scoreboard time manually (e.g. the coverage of a game started late and thus a correction of the time to the current game time will be made).

### 4.4 Attacking Half 1/Attacking Half 2

The *AT Half* event is the key event to determine the puck position on the field and is the base for the auto generated events.

***AT Half 1 + AT Half 2***

### 4.5 Goal

The key events of an ice hockey match are the goals that are scored. RunningBall Scouts send the *Goal* event whenever a goal is scored, or if they are not entirely sure whether a goal has been scored or not (e.g. the ball hits the outside of the net). Clients should interpret this as if a goal has been scored and stop trading. There is the possibility that the referees review TV pictures to determine if a goal counts or not, in this case RunningBall Scouts will send the *Goal under investigation* command. If the goal does not count (e.g. it is disallowed because of player(s) kicking the puck, or the puck is actually not in the goal), the Scout will cancel the goal with the *Cancel Goal* command. Otherwise, the *Goal Conf* command will be sent as soon as the situation on the field indicates that the goal is allowed, e.g. the referee signals so and there is no debate.

Each goal of the game is displayed with scorer information (whenever applicable) and one of the following scoring methods:

- > shot
- > power play
- > shorthanded
- > empty net
- > penalty
- > empty net/power play
- > empty net/shorthanded

> technical goal

*Shot* is the default goal method that applies if none of the others is true. Note that the scorer information may be updated either before or after the *Goal Conf* event.

Some possible command combinations are described below:

***AT Half 2 + Goal 2 (No. 5 (shot)) + Goal Conf 2 + FO***

***AT Half 1 + Goal 1 (No. 3 (shot)) + Goal under investigation + Goal Conf 1 + FO***

***AT Half 2 + Goal 2 (No. 99 (empty net)) + Goal under investigation + Cancel Goal 2 + FO***

***AT Half 1 + Goal 1 (No. 21 (power play)) + Cancel Goal 1 + FO***

## 4.6 Shots

Another important figure is the shot percentage that could be reached by the teams.

In ice hockey a shot on goal is a shot that would enter the goal if it was not stopped by the goaltender. A shot on goal must result in either a goal or a save. Goals are not added to the shots statistics, so all shots can be interpreted as saves. Our Scouts try to send all shots as accurately as possible. However, due to the speed of the game and the difficulty of defining whether the attempt would have reached the goal without the goalkeeper's interference or not, it is possible that their shot count differs from the official statistics.

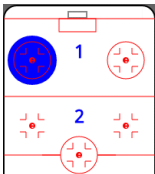
***AT Half 2 + SH 2 + At Half 1 + SH 1***

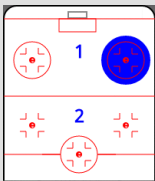
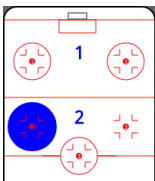
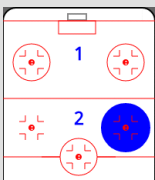
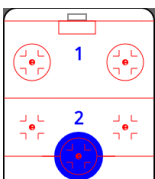
## 4.7 Face-off (FO)

A face-off is conducted at the beginning of each period and after any stoppage of play. It is the method of (re-)starting a game, in which the referee drops the puck between two opposing players.

When the *FO* is sent by the Scout, the game clock will stop automatically in the RunningBall system.

After the *FO* event, the Scouts define where the puck will be faced off. The following Face-off Zones are available:

Face-off Zone	Description
<div>Zone 1L</div> 	The puck is faced off on the left side of the attacking zone (the area between the blue line and the goal line).

Face-off Zone	Description
<p>Zone 1R</p> 	<p>The puck is faced off on the right side of the attacking zone (the area between the blue line and the goal line).</p>
<p>Zone 2L</p> 	<p>The puck is faced off on the left side of the neutral zone.</p>
<p>Zone 2R</p> 	<p>The puck is faced off on the right side of the neutral zone.</p>
<p>Centre ice spot</p> 	<p>The puck is faced off on the centre ice spot.</p>

**Table 12 – Face-off Zones**

If the face-off is caused by icing or an offside, the corresponding event is sent after *FO* and the zone definition.

- > *IC 1* (Icing team 1)
- > *IC 2*
- > *OFF 1* (Offside team 1)
- > *OFF 2*

In case the puck is moved to the other attacking half for the face-off after the game has been interrupted (e.g. after icing), the attacking half can be adjusted in between the *FO* and the *FOD* (*Face-off done*) events.

***AT Half 1 + AT Half 2 + FO + Game clock stop + AT Half 1 + IC 1 + Face-off – left side to goal + FOD***

Due to the speed of the game, the Scout has the possibility to add *Shot 1/Shot 2* after having sent the *FO* event, as well as the *Goalkeeper off 1/Goalkeeper off 2* commands. This means that one of the teams will play shorthanded after the face-off.



The time will resume as soon as the *Face-off done* command (*FOD*) is sent by the Scout. Afterwards, the Scout has to send *Face-off won 1/Face-off won 2* (*FOW 1/2*) or *GOAL 1/GOAL 2* if a goal happens directly after the face-off.

A face-off is considered won by the team that possesses the puck first. It does not matter for how long the team stays in possession, what counts is that the player is deliberately controlling or moving the puck with his/her stick.

If the game is interrupted again before one of the teams has conquered possession of the puck, or if it is not possible for the Scout to see who has won the face-off (only in TV games e.g. because of instant replays), the Scout sends *FOWU* (face-off won unknown).

***AT Half 1 + FO + Game clock stop + SH 1 + FOD + Game clock start + FOW2 + AT Half2***

## 4.8 Possible Suspension

In situations when the referee indicates a suspension (when the game continues because the fouled team is in possession of the puck or when the players are fighting) or when the Scout suspects that a suspension or a penalty shot may be given, the *Poss SUSP* event is sent. The event should be interpreted as a suspension and a penalty shot by the clients. However, in case no suspension or penalty shot is assessed after all, the Scout will send *No SUSP*.

***AT Half 1 + Possible SUSP + GK OFF 1 + FO + Game clock stop + 2m 2 (No.8 (foul)) + FO + GK ON 1 + Face-off Zone + FOD***

## 4.9 Suspension & Suspension Over

Scouts report all suspensions as they occur. 2-minute (2m) and 5-minute (5m) suspensions affect the number of players on the ice, which is one of the key facts of an ice hockey game. Misconduct suspensions (+10m) and game misconduct penalties (GMP) are also reported.

Match penalties are entered into the system by sending a 5-minute suspension and a GMP.

All possible combinations (2m+2m, 2m+10m, 5m+GMP etc.) can be reported accurately.

**Important:** In the official rules, all suspensions are called "penalties". However, in order not to mix up time penalties with penalty shots, we call all "time penalties" *Suspensions* in RunningBall. However, this does not apply to the game misconduct penalty and the match penalty.

As soon as a suspension is over, the Scout sends the suspension over event.

***AT Half 2 + Goal 2 (No.14 (powerplay)) + Goal Conf 2 + FO + 2MPO1 + FOD***

## 4.10 Possible Penalty and Penalty

In ice hockey, a penalty shot is a type of penalty awarded when a team loses a clear scoring opportunity on a breakaway because of a foul committed by an opposing player. Generally, the

penalty shot is awarded instead of what would normally be a minor penalty, so the fouled team will not get both a penalty shot and a power play from a single infraction.

Since it is not always clearly visible if the referee decides for a penalty, our Scout has the possibility to send *Possible SUSP* first and within the following pop-up he/she will send *Possible PEN* in case a penalty shot may be awarded. The game clock is stopped by the Scout as soon as the referee interrupts the game.

As soon as the referee's decision is clear, the Scout confirms the penalty shot with *PEN SH* or cancel with *No PEN*. Once the penalty taker is ready for the attempt, *Penalty about to be taken* is sent. Depending on the outcome of the penalty, *Goal* or *Missed* is sent. In case a penalty is retaken, *Retake* is sent. A goal scored from a penalty can be considered confirmed as soon as the *Goal Conf* event is sent.

***AT Half 2 + Possible SUSP + Game clock stop + Possible PEN + No SUSP + PEN SH2 + Penalty about to be taken + Goal 2 (No.12 (penalty)) + Goal Conf 2 + FO***

***AT Half 1 + Possible SUSP + Game clock stop + Possible PEN + No PEN + 2m 1 (unknown (foul)) + FO***

#### 4.11 Penalty Shootout

A penalty shootout is a method for determining which team is awarded the win in case the competition requires a winner and the score is tied after regular playing time and overtime (if used).

Once the penalty taker is ready for the attempt, *Penalty about to be taken* is sent. Depending on the outcome of the penalty shot, *Goal* or *Missed* is sent. In case a penalty shot is retaken, *Retake* is sent. A goal scored in a penalty shootout can be considered confirmed as soon as the *Goal Conf* event is sent. During penalty shootouts, no face-off will be sent after the goal was confirmed. The Scout will indicate the team to take the next penalty by sending the *Next PEN* event.

Some possible command combinations are described below:

***Start PEN 1 + Next PEN 1 + Penalty about to be taken + Goal 1 + Goal Conf 1 + Next PEN 2 + Penalty about to be taken + Missed + Stop PEN***

***Start PEN 1 + Next PEN 1 + Penalty about to be taken + Goal 1 + Goal Conf 1 + Next PEN 2 + Penalty about to be taken + Missed + Next PEN 2 + Penalty about to be taken + Goal 2 + Goal Conf 2 + Next PEN 1***

#### 4.12 Possible Penalty and Penalty

In ice hockey, a penalty shot is a type of penalty awarded when a team loses a clear scoring opportunity on a breakaway because of a foul committed by an opposing player. Generally, the penalty shot is awarded instead of what would normally be a minor penalty, so the fouled team will not get both a penalty shot and a power play from a single infraction.

Since it is not always clearly visible if the referee decides for a penalty, our Scout has the possibility to send *Possible SUSP* first and within the following pop-up he/she will send *Possible*

*PEN* in case a penalty shot may be awarded. The game clock is stopped by the Scout as soon as the referee interrupts the game.

As soon as the referee's decision is clear, the Scout confirms the penalty shot with *PEN SH* or cancel with *No PEN*. Once the penalty taker is ready for the attempt, *Penalty about to be taken* is sent. Depending on the outcome of the penalty, *Goal* or *Missed* is sent. In case a penalty is retaken, *Retake* is sent. A goal scored from a penalty can be considered confirmed as soon as the *Goal Conf* event is sent.

***AT Half 2 + Possible SUSP + Game clock stop + Possible PEN + No SUSP + PEN SH2 + Penalty about to be taken + Goal 2 (No.12 (penalty)) + Goal Conf 2 + FO***

***AT Half 1 + Possible SUSP + Game clock stop + Possible PEN + No PEN + 2m 1 (unknown (foul)) + FO***

### **4.13 Goalkeeper off the Ice (GK OFF)**

This is an indication that one of the teams took the goalkeeper off the ice. This event may happen when the referee signals a suspension, or very close to the end of the match, when the team which is about to lose, brings on an additional field player instead of the goalkeeper. Together with the suspensions, this event is used to provide one of the most important facts in ice hockey: the current number of players on the ice.

### **4.14 Score Confirmation after Period End**

After the end of each period the Scouts send the corresponding Stop period event (e.g. *Stop 2<sup>nd</sup> period*, *Stop overtime* etc.). Then they double check the statistics of the most important events. If everything is correct, they will send *Scores confirmed*. We recommend not reopening your markets until the final confirmation.

### **4.15 Event Prioritisation & Disconnection Handling**

#### **4.15.1 Event Categories**

RunningBall has classified the events into three categories. In general, all events are sent as they happen, but the Scouts are trained to avoid sending subordinated commands in case there is an imminent danger of a more important event. For example, a shot on goal is not sent if the goalkeeper is not able to bring the puck under control and there is still a scoring chance for the opposing team.

Event Category	Description
Category 1	<p>These events are the most important. They must be entered without any delay.</p> <ul style="list-style-type: none"> <li>&gt; Goals</li> <li>&gt; Penalty Shots</li> <li>&gt; Period Start</li> <li>&gt; Period Stop</li> <li>&gt; 2-Minute Suspensions</li> <li>&gt; 5-Minute Suspensions</li> <li>&gt; Goalkeeper on/off the ice</li> <li>&gt; Time Stamp</li> </ul>
Category 2	<ul style="list-style-type: none"> <li>&gt; 10-Minute Suspensions</li> <li>&gt; Game Misconduct Penalties</li> </ul>
Category 3	<ul style="list-style-type: none"> <li>&gt; Attacking Half</li> <li>&gt; Shots</li> <li>&gt; Face-off Won</li> <li>&gt; Match Messages</li> <li>&gt; Time-out</li> <li>&gt; Offside</li> <li>&gt; Icing</li> <li>&gt; All other events</li> </ul>

**Table 13 – Event Categories Ice Hockey**

#### 4.15.2 Score Confirmation & Correction after Disconnections

In case the Scout is disconnected, the state of the game is automatically switched to *Danger* and *Scout offline* is sent. As soon as the connection is re-established, the statistics of the most important events are either confirmed or updated if any such events occurred during the disconnection.

If any goals, penalty shots or suspensions occurred during the disconnection, they are sent in between the *Updating score* and the *Score updated* events. 2-minute and 5-minute suspensions that were finished while the Scout was offline are also ended. In case nothing important was missed, the command sequence *Updating score* and *Score updated* is sent.

**Note:** *GK OFF* and *GK ON* cannot be sent by the Scout before the confirmation of the scores. In case a goalkeeper leaves the ice or comes back during the disconnection, the corresponding event is sent right after *Score updated*.

All missed goals and penalty shots are sent first, followed by running and finished suspensions.

Some possible command combinations are described below:

***Updating score + Statistic confirmation + Score updated***

***Updating score + Goal 2 + Goal Conf 2 + Score updated***

***Updating score + 2m 1 + 2MPO 2 + Score updated***

## 4.16 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in ice hockey is provided in the table below.

System Message	Description
Please hold on, the connection in this area is down.	This message indicates that our Scout is facing connection issues.
Please hold on, we are rechecking the score.	This message indicates that the current game score is being investigated.
Please hold on, our coverage might start with a delay.	This message indicates that there is doubt that our coverage can be started on time.
Please hold on, we are trying to solve the problem.	This message indicates that we are working on a solution for a problem.
Please hold on, the referees are rechecking the score.	This message indicates that the referees are rechecking the game score.
Please hold on, we are rechecking the number of suspensions.	This message indicates that the current suspension statistics are being investigated.
Please hold on, we are rechecking the number of penalty shots.	This message indicates that the current penalty shot statistics are being investigated.
The score is correct: (%SCORE%)	This message confirms that our current game score is correct after we have investigated it.
The statistics are confirmed.	This message indicates that our Category 1 and Category 2 scores are correct.
The number of penalties is correct: (%SCORE%)	This message confirms that our current penalty score is correct after we have investigated it.
The total number of suspensions is correct: (%SCORE%)	This message confirms that our current, total number of suspensions is correct after we have investigated it.
The game has been restarted.	This message indicates that a suspended game has been restarted.
The game is suspended due to a power blackout at the venue.	This message indicates that the game is suspended due to a power blackout at the venue.
The game is suspended due to crowd trouble.	This message indicates that the game is suspended due to crowd trouble.
The game is suspended due to bad weather conditions.	This message indicates that the game is suspended due to bad weather conditions.
The game is suspended due to fog.	This message indicates that the game is suspended due to fog.
The game is suspended due to pyrotechnics being fired.	This message indicates that the game is suspended due to pyrotechnics being fired.
The game is suspended due to fighting players.	This message indicates that the game is suspended due to fighting players.

System Message	Description
The game is suspended due to an injured referee.	This message indicates that the game is suspended due to an injured referee.
The game is suspended due to an unknown reason.	This message indicates that the game is suspended due to an unknown reason.
The game is suspended due to broken equipment.	This message indicates that the game is suspended due to broken equipment.
The game is suspended due to a serious injury.	This message indicates that the game is suspended due to a serious injury.
The game is suspended due to an injured player.	This message indicates that the game is suspended due to a player being injured.
The game is suspended due to a commercial break.	This message indicates that the game is suspended due to a commercial break.
The game is suspended due to a destroyed ice rink.	This message indicates that the game is suspended. The ice rink is destroyed.
The game is suspended. The referee is adjusting the scoreboard.	This message indicates that the game is suspended because the referee is adjusting the scoreboard.
The game is suspended. The ice is too wet.	This message indicates that the game is suspended because the ice is too wet.
The game is suspended. The ice master is in the rink.	This message indicates that the game is suspended because the ice master is in the rink.
The game is suspended due to ice cleaning.	This message indicates that the game is suspended due to ice cleaning.
The game is suspended. The referees are adjusting the game clock.	This message indicates that the game is officially suspended because the referees are correcting the game clock.
The game is suspended but no official announcement was made at the venue.	This message indicates that the game is suspended but that no official announcement at the venue has been made.
The game is suspended. The referees are rechecking the score.	This message indicates that the game is suspended due to the referees rechecking the game score.
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.
We are sorry, we have to cancel our coverage of this game due to an unavailable connection in this area.	This message indicates that we cannot offer the game anymore due to an unavailable GPRS network in the area of the venue.
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.

System Message	Description
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to heavy snow.	This message indicates that the game had been officially cancelled due to heavy snow.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE% CET. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Our coverage will start in time.	This message indicates that we are able to start our coverage in time in case there has been any doubt on the matter.
There is an official delay of the game start.	This message indicates that the game will start with an official delay.
Our coverage started with %SEC% seconds delay.	This message indicates that our coverage started with delay and informs about the delay in seconds.
Our coverage started with %SEC% seconds delay due to technical problems.	This message indicates that our coverage started with delay due to technical problems and informs about the delay in seconds.
Our coverage of this game is changed from Live to TV.	This message indicates that our coverage of the game is changed from Live to TV.
The game will be covered live from the venue.	This message indicates that the game is covered by a Scout from the venue.
The game will be played on a neutral venue.	This message indicates that the game will be played on a neutral venue.
Our coverage was started in time.	This message indicates that our coverage was started in time in case there has been any doubt on the matter.
Our coverage is temporarily suspended due to a commercial break during the TV broadcast.	This message indicates that our coverage of the TV game is temporarily suspended due to a commercial break.
Our coverage is suspended.	This message indicates that our coverage is suspended.
The new game start time is %TIME% CET.	This message indicates a new official game start time.
The game will be played at the venue of %COMP1%.	This message indicates that the game will be played at the venue of competitor 1.
The game will be played at the venue of %COMP2%.	This message indicates that the game will be played at the venue of competitor 2.
The game officially started at %TIME% CET.	This message indicates that the game was officially started but with a significant difference to the pre-announced game start time.
Our game start time is correct.	This message confirms that our scheduled game start time is confirmed.



System Message	Description
Our coverage is suspended due to a TV broadcasting problem.	This message indicates that our coverage is suspended due to a TV broadcasting issue.
There is an official delay of the game start due to a late arrival of the competitors.	This message indicates that there is an official delay of the game start due to late arrival of the competitors.
The new game start date is %DATE% CET.	This message indicates the new official game start date.
There is an official delay of the game start due to crowd trouble.	This message indicates that there is an official delay of the game start due to crowd trouble.
The new game start date is %DATE% CET. Our coverage is not confirmed yet.	This message indicates that there is a new official game start date and that it is not confirmed yet if we will offer the game.
Our coverage of this game is changed from Live to TV. The expected delay of the TV picture is %SEC% seconds.	This message indicates that our coverage of the game is changed from Live to TV and informs about the expected delay of the TV picture in seconds.
A field player of %COMP1% is acting as a goalkeeper.	This message indicates that a field player of competitor 1 took over the goal keeper position.
A field player of %COMP2% is acting as a goalkeeper.	This message indicates that a field player of competitor 2 took over the goal keeper position.
There will be no extra time. A direct penalty shootout will be taken.	This message indicates that there will be no extra time but a direct penalty shootout will be taken.
The game is not finished yet. The referees are rechecking the score.	This message indicates that the game is not finished yet and that the game score might still change.
The coach of %COMP1% got ejected.	This message indicates that the coach of competitor 1 got ejected from the game.
The coach of %COMP2% got ejected.	This message indicates that the coach of competitor 2 got ejected from the game.
There is an official delay of the game start because the previous game at this venue is still running.	This message indicates that the game start will be officially delayed because the previous game at this venue is still running.
The next period will start with an official delay.	This message indicates that there is an official delay of the start of the next game period.
There are coincidental penalties that do not affect the number of players on ice.	This message indicates that penalties were awarded for both teams, which did not affect the number of players on the rink.
There is an official delay of the game start. The referees did not arrive yet.	This message indicates an official delay of the game start because the referees did not arrive yet.
There is an official delay of the game start. The players are still warming up.	This message indicates an official delay of the game start due to the players still warming up.
The overtime is played 3 on 3.	This message indicates that the overtime is played 3 on 3.
The overtime is played 4 on 4.	This message indicates that the overtime is played 4 on 4.



System Message	Description
Our coverage of the game was started prematurely. The game was reset and has not started yet.	This message indicates that our coverage of the game was started prematurely and that it has been reset.
Our coverage of the game was stopped prematurely. The game was reopened and is still running.	This message indicates that our coverage of the game was stopped prematurely and that it has been reopened.
Our coverage of the game is continued by phone due to technical problems.	This message indicates that our coverage of the game will be done by phone until our Scout is able to send commands again.
The regular game time is %COUNT% x %MIN% minutes.	This message indicates the official duration of the regular game time duration.
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

**Table 14 – System Messages – Ice Hockey**

# 5 Command Logic Volleyball/Beach Volleyball

## 5.1 Volleyball and Beach Volleyball

The logic of the sports and the events used by RunningBall are alike. The amount of points needed to win a set and the amount of sets needed to win a game is adjustable and our software also supports Golden Sets if required. The differences in the events between volleyball and beach volleyball are explained below whenever applicable. Both sports are concerned unless otherwise stated.

## 5.2 Basics

RunningBall provides the scores point-by-point with the events defining how a point was made. The updated scores are generated automatically.

E.g. *Kill 1 – [1:0] Point 1*

## 5.3 State Logic

The events *Service* and *Point* are used to determine whether the ball is in play or not. The *Service* event is sent when a player of the team that is to serve has released the ball or started running for a jump service. The *Point* event is sent when one of the teams has scored a point and defines how the point was scored.

- > *Service 1* (team 1 is about to put the ball into play)
- > *Service 2* (team 2 is about to put the ball into play)
  
- > *[x:x] Point 1* (team 1 has scored a point)
- > *[x:x] Point 2* (team 2 has scored a point)

## 5.4 Possession Change and Rallies

RunningBall indicates the change of possession within a rally every time the ball crosses the net and the receiving team manages to control the ball (possession change). The event *B POSS 1* or *B POSS 2* indicates the team in possession. An additional indication will be sent after every 5<sup>th</sup>, 10<sup>th</sup> and 15<sup>th</sup> possession change. However, the rally only starts after the service has been received.

- > *Rally over 5/10/15 possession changes*

Possible event sequence:

***SRV 1 + RS 1 + B POSS 2 + B POSS 1 + B POSS 2 + B POSS 1 + B POSS 2 + B POSS 1 + Rally over 5 possession changes + B 2 + P2 + Pt Conf 2***

## 5.5 Point Confirmation (Pt Conf)

Due to the fact that it is sometimes difficult to determine how a point was scored or which team scored, it may happen that the point has to be changed (e.g. the point is discussed by the referees). This can lead to an adjustment on how the point was scored, who scored, or in some cases to the point being retaken.

To make it safer for a bookmaker to settle a point market, the Scout has to double confirm that the particular point will not be rechecked or edited anymore. In this way, it should be safe to settle potential betting markets related to a specific point as soon as the point confirmation event is sent.

Scoring process:

- > Firstly, the Scout enters the method of the point, e.g. a *Block 2*
- > Secondly, the entered event automatically triggers a *Point* event which leads to a score update
- > Finally, the Scout confirms the point after a few seconds, makes a correction, or cancels the point if needed. The exact event sequence for corrections is explained in chapter *5.8 Correcting Points/Cancelling Points*.

Customers should not take any actions before the *Point confirmation* event is sent.

Possible event sequences:

***SRV 1 + RS 1 + B POSS 2 + B POSS 1 + B 2 + P2 + Pt Conf 2***

***SRV 2 + A 2 + P 2 + Cancel (A 2, P 2) + S ERR 2 + P 1 + Pt Conf 1***

## 5.6 Service Events

As mentioned above, the *Service* event is sent when the ball is about to be put into play. Depending on the outcome of the service, the Scout will send one of the following events next.

RunningBall provides information concerning which team is going to serve first in a set before the start of the respective set.

### 5.6.1 Rally Started (RS)

A rally starts when a team serves and the receiving team is able to bring the ball under control. The *Rally Started* event is counted for the team which did the service.

***SRV 2 + RS 2***

### 5.6.2 Ace (A)

An ace is a point made by the serving team as a direct result of the service. If any of the following conditions apply, the service is considered an ace:

- > The ball contacts the opponents' court untouched.
- > The opponent team has contact with the ball, but cannot bring it under control, so that it does not stay in play.

- > A violation is called on the receiving team or they commit a positional error.

***SRV 1 + A 1 + P 1***

### 5.6.3 Service Error (S ERR)

This event is sent when the serving player hits the ball out of bounds or into the net, but also if the service is not executed properly (e.g. according to the rotational order a wrong player serves, the serving team is out of position, or the service is not executed within 8 seconds after the referee has blown his/her whistle etc.).

***SRV 1 + S ERR 1 + P 2***

## 5.7 Rally Points

Once the rally has started (the *Rally Started* event has been sent), one of the teams will eventually score a rally point. The events below define all events that are no service events (*Ace*, *Service Error*) but lead to a point.

Kills and blocks add a point to the score of the team that made the kill/block, while *Error* and *Out* events trigger a point for the opposing team.

### 5.7.1 Kill (K)

*Kill* is sent if a team makes an attack hit that directly results in a point. This includes:

- > The ball touching the court on the opponent's side directly after an attack hit.
- > The opponent team touching the ball, but not being able to bring it under control as a direct result of the attack hit.
- > The defending team committing a blocking error (e.g.: a blocker touching the ball within the opponent's space prior to the attack hit, a back-row player participating in a completed block, or the ball going out of bounds directly from a block).

***SRV 1 + RS 1 + B POSS 2 + K 2 + P 2***

### 5.7.2 Block (B)

*Block* is the event used for points that are scored by successfully blocking an opponent's attack hit. A block is considered successful if the ball touches the opponent's court directly thereafter, or the other team is not able to recover the ball anymore.

***SRV 2 + RS 2 + BPOSS 1 + B 2 + P 2***

### 5.7.3 Error (ERR)

The *Error* event is used for all kinds of errors that may occur during a rally. This includes all ball handling violations (e.g. four hits, double contact etc.) and attack hit errors (e.g. hitting the ball within the playing space of the opposing team, the libero completing an attack hit while the ball was completely above the top of the net level etc.).

**SRV 1 + RS 1 + B POSS 2 + ERR 2 + P 1**

#### 5.7.4 Out (OUT)

A team hits the ball out of bounds on the opposing side of the court.

**SRV 2 + RS 2 + B POSS 1 + OUT 1 + P 2**

### 5.8 Correcting Points/Cancelling Points

After an event that also triggers a point has been sent, the Scouts re-check the score before eventually confirming the point and the updated score (see also chapter 5.4 *Possession Change*).

If the point turns out to be given to the other team (e.g. the Scout sends a *Kill 1* but the referee decides that the ball was out after consulting a line judge), the wrong events are cancelled and replaced by the correct sequence before the score is confirmed.

In addition, whenever the first referee discusses a decision with the second referee or a line judge, the *Point under investigation* event is sent.

**K 1 + P 1 + Point under investigation + Cancel (K 1, P 1) + OUT 1 + P 2 + Pt Conf 2**

### 5.9 Replayed Points and Rallies

If a point is replayed because of a double fault (both teams committing an error simultaneously) or external interference, the *Point*, *Rally Started* and *Service* events are cancelled and the Scout will continue as soon as the service is repeated. The initial command sequence will be removed and the following will be displayed (depending on the previously sent commands).

**Clear (SRV, RS, B POSS, B POSS, ERR, P)**

If the rally is stopped by the referee for any reason before a point has been sent, the Scout will cancel the *Rally Started* and *Service* events.

**SRV 2 + RS 2 + Cancel (RS 2) + Cancel (SRV 2)**

### 5.10 Misconduct Sanctions

The referee may sanction any team member's incorrect behaviour towards officials, opponents or team-mates. RunningBall Scouts send all penalties, expulsions and disqualifications as they occur.

#### 5.10.1 Penalty (PEN) & Penalty Point

In case the referee sanctions a team with a penalty, the *Penalty* event is sent. This means that the other team will receive an additional point and obtain the right to serve. RunningBall provides information on the reason for the penalty (misbehaviour by a player, by a non-playing team member or because of delaying the game) and the player's number if applicable. Note that

the details of the *PEN* event are updated as soon as the penalty is confirmed. Customers should close the markets until the new score after a penalty has ultimately been confirmed with a point confirmation event.

***PEN 2 - No. 7 (player) + PEN Point 1 + P 1 + Pt Conf***

***PEN 1 - Unknown (delay) + PEN Point 2 + P 2 + Pt Conf***

**Important:** If a penalty is assessed before a set is started, the Scout will send the *PEN* event immediately, but he/she will send the *PEN Point* event only after the set actually starts. In order to warn customers, the corresponding System Message is sent: *Penalty 1 before the set started. The next set will start with a point score of 0:1. or Penalty 2 before the set started. The next set will start with a point score of 1:0. respectively.*

#### 5.10.2 Possible Disqualification, Expulsion & Disqualification

Whenever there is a chance that a team member may be disqualified for his/her behaviour, the Scout will enter the *Possible Disqualification* event. In the worst case, a disqualification might lead to a team losing the set (or even the game in beach volleyball), which is why customers are advised to close all markets until the situation is clarified.

In the event that there is in fact neither an expulsion nor a disqualification, the *No Disqualification* command is sent.

***P Disqu + No Disqu***

##### > Expulsion (EXP)

An expelled player has to leave the court, may not participate in the game in the running set anymore and needs to be substituted. RunningBall provides information on whether the expulsion was caused by a player (including the player's number) or a non-playing team member.

***P Disqu + EXP 1 - No. 8 (player)***

**Important:** In beach volleyball, an expulsion automatically leads to a loss of the set as no substitutions are allowed. A volleyball team will also lose the running set if the expelled player cannot be legally substituted.

***P Disqu + EXP 2 - Unknown (other team member) + S 1 + Stop Set + Score of last period confirmed***

##### > Disqualification (DISQU)

A disqualified player has to leave the court, may not participate in the game anymore and needs to be substituted. RunningBall provides information on whether the disqualification was caused by a player (including the player's number) or a non-playing team member.

**Important:** In beach volleyball a disqualification automatically leads to a loss of the **game**. In volleyball, the team will lose the running **set** if the disqualified player cannot be legally substituted.

***P Disqu + Disqu 1 - No. (player)***

## 5.11 Score Update

A score update is an important event used to correct the score in case there are unforeseen outages in TV games (e.g. commercial breaks), TV broadcasting errors or after a late start of a match.

The score update sequence starts with the *Start score update* event and ends with *Score update finished*. In between, all points are sent in an unordered way and without a specification on how the points were scored. It must be avoided to settle markets based on this information as neither the order in which the points were scored is guaranteed, nor is it possible to provide the method events (e.g. ace, kill, out) with 100 per cent accuracy.

***Updating score + P UM 1 + P 1 + P UM 1 + P 1 + P UM 2 + P 2 + Score updated***

This feature is also used in the rare case that a team has scored several points in a row and it turns out that according to the rotational order a wrong player has made the services. As a result, the referee will rectify the official scoreboard and the Scout uses the score update to correct the score in the system.

***Updating score + Correct statistics (A 1) + CP 1 + Correct statistics (OUT 2) + CP 1 + Correct statistics (K 1) + CP 1 + Score updated***

## 5.12 Walkover (w.o.)

**Note:** This event is only used in beach volleyball.

A *Walkover* event will be used to announce a retirement of one of the teams during the match and will automatically stop the match. In case the match will not take place at all, e.g. due to an injury which is announced already before the match, the match will also be cancelled beforehand.

***Pt Conf 1 + w.o. 2 + Stop game***

## 5.13 End of Session

**Note:** This event is only used in beach volleyball.

If the game is interrupted and officially suspended because of bad weather or other circumstances impeding its continuation, the *End of Session* event is sent and the game clock is stopped. As soon as the game is resumed and the coverage continues, the *Start Session* event is entered.

## 5.14 Other Events

Furthermore, RunningBall provides some additional events to keep the customer updated on what is happening at the venue.

### 5.14.1 Time-out

In case a team takes a time-out or whenever a technical time-out is applied, the *TIME* event is sent. This event should be used to suspend any related betting markets. Afterwards, the event defining the time-out will follow (either *TIME 1/2* or *TTO*).

## 5.15 Event Prioritisation & Disconnection Handling

### 5.15.1 Event Categories

RunningBall has classified the events into three categories.

Event Category	Description
Category 1	<p>These events are the most important. They must be entered without any delay.</p> <ul style="list-style-type: none"> <li>&gt; Points</li> <li>&gt; Game/Set Start</li> <li>&gt; Game/Set Stop</li> </ul>
Category 2	<ul style="list-style-type: none"> <li>&gt; Penalties</li> <li>&gt; Expulsions</li> <li>&gt; Disqualifications</li> </ul>
Category 3	<ul style="list-style-type: none"> <li>&gt; Services</li> <li>&gt; Scoring Method</li> <li>&gt; Time-outs</li> <li>&gt; All other events</li> </ul>

**Table 15 – Event Categories Volleyball**

### 5.15.2 Score Confirmation & Correction after Disconnections

In case the Scout is disconnected, the state of the game is automatically switched to *Danger* and *Scout offline* is sent. As soon as the connection is re-established, the statistics of the most important events are either confirmed or updated if any such events occurred during the disconnection.

If any Category 1 or Category 2 Events occurred during the disconnection, they are sent in between the *Updating score* and the *Score updated* events. In case nothing important was



missed, the command sequence *Updating score*, *Statistic confirmation* and *Score updated* is sent.

All point events (including penalties) are sent in the correct order as they happened in the game, followed by expulsions and disqualifications if applicable.

Some possible command combinations are described below:

***Updating score + Statistic confirmation + Score updated***

***Updating score + K 1 + P 1 + OUT 1 + P 2 + Score updated***

***Updating score + B 1 + P 1 + PEN 2 + PEN Point 1 + P 1 + ERR 1 + P 2 + Score updated***

## 5.16 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in volleyball and beach volleyball is provided in the table below.

System Message	Description
Please hold on, the connection in this area is down.	This message indicates that our Scout is facing connection issues.
Please hold on, we are rechecking the score.	This message indicates that the current game score is being investigated.
Please hold on, our coverage might start with a delay.	This message indicates that there is doubt that our coverage can be started on time.
Please hold on, we are trying to solve the problem.	This message indicates that we are working on a solution for a problem.
Please hold on, the referees are rechecking the score.	This message indicates that the referees are rechecking the game score.
Please hold on, we are rechecking the number of penalties.	This message indicates that the current penalty statistics are being investigated.
Please hold on, we are rechecking the number of expulsions.	This message indicates that the current expulsion statistics are being investigated.
Please hold on, we are rechecking the number of disqualifications.	This message indicates that the current disqualification statistics are being investigated.
The score is correct: (%SCORE%)	This message confirms that our current game score is correct after we have investigated it.
The number of penalties is correct: (%SCORE%)	This message confirms that our penalty statistics are correct after we have investigated them.
The game has been restarted.	This message indicates that a suspended game has been restarted.
The game is suspended due to a power blackout at the venue.	This message indicates that the game is suspended due to a power blackout at the venue.
The game is suspended due to crowd trouble.	This message indicates that the game is suspended due to crowd trouble.

System Message	Description
The game is suspended due to bad weather conditions.	This message indicates that the game is suspended due to bad weather conditions.
The game is suspended due to fog.	This message indicates that the game is suspended due to fog.
The game is suspended due to pyrotechnics being fired.	This message indicates that the game is suspended due to pyrotechnics being fired.
The game is suspended due to fighting players.	This message indicates that the game is suspended due to fighting players.
The game is suspended due to an injured referee.	This message indicates that the game is suspended due to an injured referee.
The game is suspended due to an unknown reason.	This message indicates that the game is suspended due to an unknown reason.
The game is suspended due to broken equipment.	This message indicates that the game is suspended due to broken equipment.
The game is suspended due to a serious injury.	This message indicates that the game is suspended due to a serious injury.
The game is suspended due to an injured player.	This message indicates that the game is suspended due to a player being injured.
The game is suspended. The referee is adjusting the scoreboard.	This message indicates that the game is suspended because the referee is adjusting the scoreboard.
The game is suspended but no official announcement was made at the venue.	This message indicates that the game is suspended but that no official announcement at the venue has been made.
The game is suspended. The referees are rechecking the score.	This message indicates that the game is suspended due to the referees rechecking the game score.
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.
We are sorry, we have to cancel our coverage of this game due to an unavailable connection in this area.	This message indicates that we cannot offer the game anymore due to an unavailable GPRS network in the area of the venue.
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.

System Message	Description
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE% CET. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Our coverage will start in time.	This message indicates that we are able to start our coverage in time in case there has been any doubt on the matter.
There is an official delay of the game start.	This message indicates that the game will start with an official delay.
Our coverage started with %SEC% seconds delay.	This message indicates that our coverage started with delay and informs about the delay in seconds.
Our coverage started with %SEC% seconds delay due to technical problems.	This message indicates that our coverage started with delay due to technical problems and informs about the delay in seconds.
Our coverage of this game is changed from Live to TV.	This message indicates that our coverage of the game is changed from Live to TV.
The game will be covered live from the venue.	This message indicates that the game is covered by a Scout from the venue.
The game will be played on a neutral venue.	This message indicates that the game will be played on a neutral venue.
Our coverage was started in time.	This message indicates that our coverage was started in time in case there has been any doubt on the matter.
Our coverage is temporarily suspended due to a commercial break during the TV broadcast.	This message indicates that our coverage of the TV game is temporarily suspended due to a commercial break.
Our coverage is suspended.	This message indicates that our coverage is suspended.
The new game start time is %TIME% CET.	This message indicates a new official game start time.
The game will be played at the venue of %COMP1%.	This message indicates that the game will be played at the venue of competitor 1.
The game will be played at the venue of %COMP2%.	This message indicates that the game will be played at the venue of competitor 2.
The game officially started at %TIME% CET.	This message indicates that the game was officially started but with a significant difference to the pre-announced game start time.
Our game start time is correct.	This message confirms that our scheduled game start time is confirmed.
Our coverage is suspended due to a TV broadcasting problem.	This message indicates that our coverage is suspended due to a TV broadcasting issue.
There is an official delay of the game start due to a late arrival of the competitors.	This message indicates that there is an official delay of the game start due to late arrival of the competitors.

System Message	Description
The new game start date is %DATE% CET.	This message indicates the new official game start date.
There is an official delay of the game start due to crowd trouble.	This message indicates that there is an official delay of the game start due to crowd trouble.
The new game start date is %DATE% CET. Our coverage is not confirmed yet.	This message indicates that there is a new official game start date and that it is not confirmed yet if we will offer the game.
Our coverage of this game is changed from Live to TV. The expected delay of the TV picture is %SEC% seconds.	This message indicates that our coverage of the game is changed from Live to TV and informs about the expected delay of the TV picture in seconds.
The coach of %COMP1% got ejected.	This message indicates that the coach of competitor 1 got ejected from the game.
The coach of %COMP2% got ejected.	This message indicates that the coach of competitor 2 got ejected from the game.
There is an official delay of the game start because the previous game at this venue is still running.	This message indicates that the game start will be officially delayed because the previous game at this venue is still running.
The next period will start with an official delay.	This message indicates that there is an official delay of the start of the next game period.
Penalty 1 before the set started. The next set will start with a point score of 0:1.	This message indicates that there was a penalty for competitor 1 before the start of the set and that the next set will start with a score of 0:1.
Penalty 2 before the set started. The next set will start with a point score of 1:0.	This message indicates that there was a penalty for competitor 2 before the start of the set and that the next set will start with a score of 1:0.
There is an official delay of the game start. The referees did not arrive yet.	This message indicates an official delay of the game start because the referees did not arrive yet.
There is an official delay of the game start. The players are still warming up.	This message indicates an official delay of the game start due to the players still warming up.
The score has been corrected after the game was stopped. The correct score is %SCORE%.	This message indicates that the officials changed the game score after the game had been stopped.
Our coverage of the game was started prematurely. The game was reset and has not started yet.	This message indicates that our coverage of the game was started prematurely and that it has been reset.
Our coverage of the game was stopped prematurely. The game was reopened and is still running.	This message indicates that our coverage of the game was stopped prematurely and that it has been reopened.
Our coverage of the game is continued by phone due to technical problems.	This message indicates that our coverage of the game will be done by phone until our Scout is able to send commands again.
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

**Table 16 – System Messages – Volleyball/Beach Volleyball**

# 6 Command Logic Handball

## 6.1 State Logic

The number of players on the court is kept up to date in the system at all times. Suspensions and goalkeepers leaving the court for additional field players are the key events that influence this important figure.

RunningBall shows which team is in possession of the ball with the following events:

- > *P 1* (Ball possession competitor 1)
- > *P 2* (Ball possession competitor 2)

The ball possession is constantly monitored and updated in the system by the Scout. Due to the speed of the game it is not possible to provide detailed state/zone information like in soccer.

## 6.2 Game Clock Handling

One of the key features in handball is the game clock handling. RunningBall is keen to provide a very accurate (on the second) clock information at all times as this is crucial for trading purposes.

Our Scouts start and stop the game clock according to the referees' decisions.

### 6.2.1 Game Clock Stop

The Scout has the possibility to stop the clock manually in case one of the referees shows the corresponding signal.

Furthermore, in various situations the game clock will also be stopped automatically based on a logical event order. The following events trigger an automatic stop of the game clock (if it has not happened before):

- > *TIME* (neutral time-out)
- > *Game suspended – Player injured*
- > *Mop court*
- > *Stop 1st half / 2nd half* etc.

### 6.2.2 Game Clock Start

The game clock starts running as soon as the Scout sends the *Start Period* event. After interruptions, the game clock may be started manually. Depending on the situation, the game can also be resumed by the following events, which also start the game clock in case it was not already running:

- > *P 1/2* (Possession)
- > *TI 1/2* (Throw-in)
- > *FT 1/2* (Free-throw)

### 6.2.3 Game Clock Adjustment

Although RunningBall and its Scouts take all measures to keep the official game time and the system game time synchronised, it is still possible that differences occur (time changes by the officials, late reaction in one particular situation). In such a case, it is possible for the Scout to send a *Game clock adjustment* event to correct the game clock.

The Scout has the possibility to make corrections when there is an interruption, but also while the clock is running. The predefined steps in which the Scout can make immediate corrections are +/-2 and +/-5 seconds. Nevertheless, it is also possible to enter the exact time of the official scoreboard manually (e.g. the coverage of the game started late or the game clocks in our system and on the scoreboard diverge after a disconnection).

## 6.3 Goal

Goals form the key events of handball games. RunningBall Scouts send the *Goal* event when a goal is scored, or if they are not entirely sure whether a goal has been scored or not (e.g. the ball hits the outside of the net).

### ***P 2 + GOAL 2***

Clients should interpret this as if a goal has been scored and stop trading. If the goal does not count (e.g. it is disallowed because of an offensive foul, or the ball is not actually in the goal), the Scout will cancel the goal with the *Cancel Goal* command. Otherwise, the *Goal Conf* command will be sent as soon as the situation on the field indicates that the goal is allowed, e.g. the referee signals so and there is no debate. The game then continues with a *Throw-off* for the team that conceded the goal.

### ***P 2 + GOAL 2 + Goal Conf 2 + TO 1***

### ***P 1 + GOAL 1 + CGOAL 1 + TI 2***

## 6.4 Punishments

RunningBall Scouts send all yellow cards, 2-minute suspensions, red cards and 7-metre throws as they occur.

### 6.4.1 Possible Suspension & No Suspension

In situations when the referee indicates a personal punishment or when the Scout suspects that a punishment may be given, the *Possible suspension* event is sent. Since it is often not clear what the referees decide, this event is sent as a warning before it is clear which punishment is assessed. It should be interpreted as a yellow card, a red card and a suspension by the clients. If the violation may result in a 7-metre throw too, the *Possible 7m* event is sent right after *Possible SUSP* (see also chapter 6.4.5 *Possible 7-Metre Throw & 7-Metre Throw*). In case there is no suspension after all, the *No suspension* event is sent.

If there is indeed a 2-minute suspension, it will be sent as described in chapter 6.4.3 *2-Minute Suspension & Suspension Over*, possibly in combination with a red card. Yellow cards and 7-metre throws are followed by the *No suspension* event, provided that no other player is sent to the bench in the same situation.

## **P 1 + Possible SUSP + No SUSP + P 2**

### 6.4.2 Yellow Card

Each yellow card is sent with its reason and player-related details (where applicable). For instance: *YC 1 - No. 12 (foul)*. The available reasons are *foul* and *unsportsmanlike conduct*.

## **P 2 + Possible SUSP + YC 1 (No. 5 (foul)) + No SUSP + FT 2**

### 6.4.3 2-Minute Suspension & Suspension Over

Scouts report all 2-minute suspensions as they occur. They affect the number of players on the court, which is one of the important facts of a handball game. In case a player commits more than one violation in the same scene, an additional +2m suspension is entered if he/she is sent off for 4 minutes. Suspensions are sent with the reason and player-related details if applicable. The available reasons are *foul*, *unsportsmanlike conduct*, *faulty substitution* and *disqualification*.

## **P 2 + Possible SUSP + Game clock stop + 2m 1 (No.5 (foul)) + Game clock start + FT 2**

## **P 1 + Possible SUSP + Game clock stop + 2m 2 (No.2 (unsportsmanlike conduct)) + 2m 2 + Game clock start + FT 1**

As soon as a suspension is over, the Scout sends the suspension over event. The *2MSO* is sent as soon as the player comes back onto the court after 2, respectively 4 minutes (in case of 2 + 2m suspensions).

### 6.4.4 Red Card

Red cards are always combined with a 2-minute suspension and the Scouts are trained to send the suspension before the *Red card* event. The handling is the same as for yellow cards, except that there is the additional reason *third suspension*.

## **P 1 + Possible SUSP + Game clock stop + 2m 2 (No.7 (foul)) + RC 2 + Game clock start + FT 1**

## **P 2 + Possible SUSP + Game clock stop + 2m 1 (No.11 (foul)) + RC 1 (No.11 (third suspension)) + Game clock start + FT 2**

### 6.4.5 Possible 7-Metre Throw & 7-Metre Throw

A 7-metre throw is awarded when a team loses a clear scoring opportunity because of illegal interference by the opponents. In such situations the Scouts send *Possible suspension* AND *Possible 7 meter*. In case there is no 7-metre throw after all, *No 7 meter* is sent. If there are other punishments in the same situation, they are sent before the *7 meter* event. The game clock is only stopped by the Scout if the referee really interrupts the game.

Once the penalty taker is ready for the attempt, *7-metre throw about to be taken* is sent. After the 7-metre throw, the game continues with either a *Goal* or a *7m missed* event. In case the throw is retaken, the *Retake 7m* event is sent.



***Possible SUSP + Possible 7m + No 7m + No SUSP***

***Possible SUSP + Possible 7m + YC 2 (No.5 (foul)) – No SUSP + 7m 1 + 7-metre throw about to be taken + GOAL 1 (No.5 (7m)) + Goal Conf 1 + TO 2 + P 2***

***P 2 + Possible SUSP + Possible 7m + Game clock stop + 2m 1 (No.13 (foul)) – 7m 2 (No.8 (7m)) + 7-metre throw about to be taken + Missed + Retake 7m 2 + GOAL 2 (No.8 (7m)) + Goal Conf 2 + Game clock start + TO 1 + P 1***

## 6.5 7-Metre Shootout

A 7-metre shootout is a method of determining which team is awarded the win in case the competition requires a winner and the score is tied after regular playing time and extra time (if used).

Once the 7-metre throw taker is ready for the attempt, *Penalty about to be taken* is sent. Depending on the outcome of the 7-metre throw, *Goal* or *Missed* is sent. In case a 7-metre throw is retaken, *Retake* is sent. A goal scored in a 7-metre shootout can be considered confirmed as soon as the *Goal Conf* event is sent. During 7-metre shootouts, no throw-off will be sent after the goal was confirmed. The Scout will indicate the team to take the next 7-metre throw by sending the *Next PEN* event.

Some possible command combinations are described below:

***Start 7m shootout Team 1 + Next PEN 1 + Penalty about to be taken + Goal 1 + Goal Conf 1 + Next PEN 2 + Penalty about to be taken + Missed + Stop PEN***

***Start 7m shootout Team 1 + Next PEN 1 + Penalty about to be taken + Goal 1 + Goal Conf 1 + Next PEN 2 + Penalty about to be taken + Missed + Next PEN 2 + Penalty about to be taken + Goal 2 + Goal Conf 2 + Next PEN 1***

## 6.6 Goalkeeper off the Court

The *GK OFF* event is an indication that one of the teams took their goalkeeper off the court in favour of an additional field player. When the goalkeeper comes back, the *GK ON* events is sent.

## 6.7 Shot

For every attempt to score a goal the Scouts send the *Shot* event, **no** matter if the shot is blocked, saved by the goalkeeper, off target or hits the woodwork. The entry of shots may be delayed in order not to delay a goal. In such situations, the *Shot* event is sent later.

***P 2 + SH 2 + P 1***

***P 2 + GOAL 2 + SH 2 + Goal Conf 2***

## 6.8 Free-Throw & Throw-in

*Free throws* and *throw-ins* are sent whenever such throws are executed. Free throws are used to restart the game after a team has violated the rules. Throw-ins occur after the ball has left the



playing court across the sideline, or after the ball has crossed the outer goal line having been touched by a defending player last.

## 6.9 Other Events

### 6.9.1 Time-out

In case a team takes a technical time-out, the *TIME* event is sent. This event should be used to suspend any related betting markets. Afterwards, the event defining which team took the time-out will follow (either *TTO 1* or *TTO 2*).

### 6.9.2 Mop Court

The *Mop court* event is sent whenever the referee interrupts the game because the court needs to be cleaned. The game clock is stopped automatically in case it was still running.

## 6.10 Score Confirmation after Period End

After the end of each period the Scouts send the corresponding Stop period event (e.g. Stop 2nd half, Stop 1st half of second overtime etc.). Then, they double check the statistics of the most important events. If everything is correct, they will send Score of last period confirmed. We recommend not reopening your markets until the final confirmation.

## 6.11 Event Prioritisation & Disconnection Handling

### 6.11.1 Event Categories

RunningBall has classified the events into three categories. In general, all events are sent as they happen, but the Scouts are trained to avoid sending subordinated commands in case there is an imminent danger of a more important event. For example, shots are not sent if the ball remains in play and there is still a scoring chance for the opposing team.

Event Category	Description
Category 1	These events are the most important. They must be entered without any delay. <ul style="list-style-type: none"><li>&gt; Goals</li><li>&gt; 7-metre throws</li><li>&gt; Period Start</li><li>&gt; Period Stop</li><li>&gt; 2-minute suspensions</li><li>&gt; 2+2-minute suspensions</li><li>&gt; Goalkeeper on/off the court</li></ul>
Category 2	<ul style="list-style-type: none"><li>&gt; Yellow cards</li><li>&gt; Red cards</li></ul>

Event Category	Description
Category 3	> Possession
	> Shots
	> Throw-ins
	> Free-throws
	> Time-outs
	> Match Messages
	> All other events

**Table 17 – Event Categories Handball**

### 6.11.2 Score Confirmation & Correction after Disconnections

In case the Scout is disconnected, the state of the game is automatically switched to *Danger* and *Scout offline* is sent. As soon as the connection is re-established, the statistics of the most important events are either confirmed or updated if any such events occurred during the disconnection.

If any goals, 7-metre throws or suspensions occurred during the disconnection, they are sent in between the *Updating score* and the *Score updated* events. 2-minute and 2+2 suspensions that were finished while the Scout was offline are also ended. In case nothing important was missed, the command sequence *Updating score*, *Statistic confirmation* and *Score updated* is sent.

**Note:** *GK OFF* and *GK ON* cannot be sent by the Scout before the confirmation of the scores. In case a goalkeeper leaves the court or comes back during the disconnection, the corresponding event is sent right after *Score updated*.

Goals and 7-metre throws are sent in the correct order first, followed by running suspensions and suspensions that ended.

Some possible command combinations are described below:

***Updating score + Statistic confirmation + Score updated***

***Updating score + GOAL 1 + Goal Conf 1 + TO 2 + P 2 + 7m 2 + GOAL 2 + Goal Conf 2 + TO 1 + P 1 + Score updated***

***Updating score + 2m 1 + 2MPO 2 + Score updated***

## 6.12 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in handball is provided in the table below.

System Message	Description
Please hold on, the connection in this area is down.	This message indicates that our Scout is facing connection issues.
Please hold on, we are rechecking the score.	This message indicates that the current game score is being investigated.
Please hold on, our coverage might start with a delay.	This message indicates that there is doubt that our coverage can be started on time.
Please hold on, we are trying to solve the problem.	This message indicates that we are working on a solution for a problem.
Please hold on, we are rechecking the number of red cards.	This message indicates that the current red card score is being investigated.
Please hold on, we are rechecking the number of yellow cards.	This message indicates that the current yellow card score is being investigated.
Please hold on, the referees are rechecking the score.	This message indicates that the referees are rechecking the game score.
Please hold on, we are rechecking the number of suspensions.	This message indicates that the current suspension statistics are being investigated.
Please hold on, we are rechecking the number of 7-metre.	This message indicates that the current 7-metre statistics are being investigated.
The score is correct: (%SCORE%)	This message confirms that our current game score is correct after we have investigated it.
The number of red cards is correct: (%SCORE%)	This message confirms that our current red card score is correct after we have investigated it.
The number of yellow cards is correct: (%SCORE%)	This message confirms that our current yellow card score is correct after we have investigated it.
The total number of suspensions is correct: (%SCORE%)	This message confirms that our current, total number of suspensions is correct after we have investigated it.
The number of 7-metre is correct: (%SCORE%)	This message confirms that our current 7-metre score is correct after we have investigated it.
The game has been restarted.	This message indicates that a suspended game has been restarted.
The game is suspended due to a power blackout at the venue.	This message indicates that the game is suspended due to a power blackout at the venue.
The game is suspended due to crowd trouble.	This message indicates that the game is suspended due to crowd trouble.
The game is suspended due to bad weather conditions.	This message indicates that the game is suspended due to bad weather conditions.
The game is suspended due to fog.	This message indicates that the game is suspended due to fog.
The game is suspended due to pyrotechnics being fired.	This message indicates that the game is suspended due to pyrotechnics being fired.
The game is suspended due to fighting players.	This message indicates that the game is suspended due to fighting players.
The game is suspended due to an injured referee.	This message indicates that the game is suspended due to an injured referee.
The game is suspended due to an unknown reason.	This message indicates that the game is suspended due to an unknown reason.

System Message	Description
The game is suspended due to broken equipment.	This message indicates that the game is suspended due to broken equipment.
The game is suspended due to a serious injury.	This message indicates that the game is suspended due to a serious injury.
The game is suspended due to an injured player.	This message indicates that the game is suspended due to a player being injured.
The game is suspended. The referees are adjusting the game clock.	This message indicates that the game is officially suspended because the referees are correcting the game clock.
The game is suspended but no official announcement was made at the venue.	This message indicates that the game is suspended but that no official announcement at the venue has been made.
The game is suspended. The referees are rechecking the score.	This message indicates that the game is suspended due to the referees rechecking the game score.
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.
We are sorry, we have to cancel our coverage of this game due to an unavailable connection in this area.	This message indicates that we cannot offer the game anymore due to an unavailable GPRS network in the area of the venue.
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE% CET. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Our coverage will start in time.	This message indicates that we are able to start our coverage in time in case there has been any doubt on the matter.
There is an official delay of the game start.	This message indicates that the game will start with an official delay.

System Message	Description
Our coverage started with %SEC% seconds delay.	This message indicates that our coverage started with delay and informs about the delay in seconds.
Our coverage started with %SEC% seconds delay due to technical problems.	This message indicates that our coverage started with delay due to technical problems and informs about the delay in seconds.
Our coverage of this game is changed from Live to TV.	This message indicates that our coverage of the game is changed from Live to TV.
The game will be covered live from the venue.	This message indicates that the game is covered by a Scout from the venue.
The game will be played on a neutral venue.	This message indicates that the game will be played on a neutral venue.
Our coverage was started in time.	This message indicates that our coverage was started in time in case there has been any doubt on the matter.
Our coverage is temporarily suspended due to a commercial break during the TV broadcast.	This message indicates that our coverage of the TV game is temporarily suspended due to a commercial break.
Our coverage is suspended.	This message indicates that our coverage is suspended.
The new game start time is %TIME% CET.	This message indicates a new official game start time.
The game will be played at the venue of %COMP1%.	This message indicates that the game will be played at the venue of competitor 1.
The game will be played at the venue of %COMP2%.	This message indicates that the game will be played at the venue of competitor 2.
The game officially started at %TIME% CET.	This message indicates that the game was officially started but with a significant difference to the pre-announced game start time.
Our game start time is correct.	This message confirms that our scheduled game start time is confirmed.
Our coverage is suspended due to a TV broadcasting problem.	This message indicates that our coverage is suspended due to a TV broadcasting issue.
There is an official delay of the game start due to a late arrival of the competitors.	This message indicates that there is an official delay of the game start due to late arrival of the competitors.
The new game start date is %DATE% CET.	This message indicates the new official game start date.
There is an official delay of the game start due to crowd trouble.	This message indicates that there is an official delay of the game start due to crowd trouble.
The new game start date is %DATE% CET. Our coverage is not confirmed yet.	This message indicates that there is a new official game start date and that it is not confirmed yet if we will offer the game.
Our coverage of this game is changed from Live to TV. The expected delay of the TV picture is %SEC% seconds.	This message indicates that our coverage of the game is changed from Live to TV and informs about the expected delay of the TV picture in seconds.
A field player of %COMP1% is acting as a goalkeeper.	This message indicates that a field player of competitor 1 took over the goal keeper position.

System Message	Description
A field player of %COMP2% is acting as a goalkeeper.	This message indicates that a field player of competitor 2 took over the goal keeper position.
The game is not finished yet. The referees are rechecking the score.	This message indicates that the game is not finished yet and that the game score might still change.
The coach of %COMP1% got ejected.	This message indicates that the coach of competitor 1 got ejected from the game.
The coach of %COMP2% got ejected.	This message indicates that the coach of competitor 2 got ejected from the game.
There is an official delay of the game start because the previous game at this venue is still running.	This message indicates that the game start will be officially delayed because the previous game at this venue is still running.
The next period will start with an official delay.	This message indicates that there is an official delay of the start of the next game period.
There is an official delay of the game start. The referees did not arrive yet.	This message indicates an official delay of the game start because the referees did not arrive yet.
There is an official delay of the game start. The players are still warming up.	This message indicates an official delay of the game start due to the players still warming up.
The regular game time is %COUNT% x %MIN% minutes.	This message indicates the official duration of the regular game time duration.
There will be no extra time. A direct 7-metre throwing will be taken.	This message indicates that there will be no extra time but a direct 7-metre throwing will be taken.
%COMP1% started the first half.	This message indicates that competitor 1 started the first half of the game.
%COMP2% started the first half.	This message indicates that competitor 2 started the first half of the game.
%COMP1% started the second half.	This message indicates that competitor 1 started the second half of the game.
%COMP2% started the second half.	This message indicates that competitor 2 started the second half of the game.
The score has been corrected after the game was stopped. The correct score is %SCORE%.	This message indicates that the officials changed the game score after the game had been stopped.
Our coverage of the game was started prematurely. The game was reset and has not started yet.	This message indicates that our coverage of the game was started prematurely and that it has been reset.
Our coverage of the game was stopped prematurely. The game was reopened and is still running.	This message indicates that our coverage of the game was stopped prematurely and that it has been reopened.
Our coverage of the game is continued by phone due to technical problems.	This message indicates that our coverage of the game will be done by phone until our Scout is able to send commands again.
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

Table 18 – System Messages – Handball

# 7 Command Logic Cricket

## 7.1 State Logic

### 7.1.1 Batting Team

RunningBall reports whether or not batting is in progress with the following events:

- > *Bat Competitor 1* (Competitor 1 is able to score runs)
- > *StopBat Competitor 1*
- > *Bat Competitor 2* (Competitor 2 is able to score runs)
- > *StopBat Competitor 2*

For instance, batting is stopped during tea and meal breaks. This is indicated by the *StopBat* command. *Bat Competitor1/2* is sent as soon as the break or interruption is over and indicates that batting is in progress.

### 7.1.2 Ball in Progress and Ball Complete

RunningBall constantly monitors whether or not a ball is in play. This is updated in the system by the Scout.

- > *Ball in progress* (to be followed by score events)
- > *Ball complete* (not followed by score events)

### 7.1.3 Open/Close Market

RunningBall offers notifications on when to suspend/allow betting.

- > *Close Market*
- > *Open Market*

The various scenarios in which suspended betting is recommended can be summarised the following way:

- > Loss of connection to the database
- > Slow internet connections
- > Data corrections
- > Delays

### 7.1.4 Half Inning

*Half Inning* is sent to inform that the batting team changed. This happens once all batsmen of the batting team are out or all *Overs* were bowled by the fielding team.



## 7.2 Match Play Modes

### 7.2.1 Game Status

The game start (Game Status: "running") is indicated with the first *Start Inning* event in the game. Every inning starts with a *Start Inning* event and ends with a *Stop Inning* event. At the end of a game, a *Stop game* event is sent and the status of the game changes to *Finished*.

### 7.2.2 Sessions

A match can be played in several sessions if required. This is most likely to happen in games that are scheduled for more than one day. When more than one session is played, RunningBall always updates the game start time to the start time of the following session.

If more sessions are played, a session ends with an explicit *End of Session* event, the status of the game changes to *Suspended* and the game clock is stopped. The next session starts again with a *Start of Session* event.

### 7.2.3 Revised Number of Overs

The number of *Overs* may be reduced by the umpire's decision due to environmental impacts.

> *Revised number of overs: [number of overs]*

If the game spans multiple days, it is possible that the number of *Overs* will be changed to make up for the loss due to the reduction of *Overs* on one of the previous days.

## 7.3 Run

*Runs* are key events in cricket. They are the method of scoring. *Runs* are always preceded by *Possible Runs*. All *Run* events can be considered as confirmed as soon as the next event is sent (except for cancellations).

Common event sequences:

***Ball in progress + Possible Runs: 2 + B (7.3) + [58:0] 2R + Ball complete***

***Ball in progress + Possible Runs: 1 + B (9.4) + [62:0] 1R + Ball complete***

***Ball in progress + Possible Runs: 1 + Possible W + B (11.2) + [74:0] 1R + NoW + Ball complete***

The entered number of *Possible Runs* does not necessarily reflect the actual scored *Runs*.

## 7.4 Boundary

*Boundary* is sent in case a team scores four or six runs from one ball by hitting the boundary or passing over the boundary without touching the ground before. In Live Games *Boundary* is only sent after *Possible Bound* (possible boundary). In games that are flagged as TV Games there is



no *Possible Bound* event available and *Bound* will be sent without a preceding *Possible Bound* event.

Common event sequences:

***Ball in progress + Possible Bound + Possible Runs: 4 + B (1.2) + BOUND + [4:0] 4R + Ball complete***

***Ball in progress + Possible Bound + Possible Runs: 6 + B (4.5) + BOUND + [86:0] 6R + Ball complete***

***Ball in progress + Possible Bound + Possible Runs: 2 + B (2.4) + [17:0] 2R + NoBound + Ball complete***

## 7.5 Wickets

*Wicket* is sent in case a batsman is dismissed. In Live Games *Wicket* is only sent after *Possible W* (possible wicket). In games that are flagged as TV games there is no *Possible W* event available and *Wicket* will be sent without a preceding *Possible W* event. The type of dismissal is indicated for all games.

Common event sequences:

***Ball in progress + Possible W + B (6.5) + W + B (6.5) + Ball complete***

***Ball in progress + Possible W + Possible Runs: 1 + B (1.1) + [1:0] 1R + NoW + Ball complete***

## 7.6 Over

*OV* (*Over*) is sent after a set of six regularly bowled balls.

Common event sequence:

***Ball in progress + Possible Runs: 2 + B (1.6) + [6:0] 2R + Ball complete + OV***

## 7.7 Ball

For every delivered ball information on the bowling hand of the bowler (left-handed or right-handed) and the batting hand of the batsman (left-handed or right-handed) is provided. The bowlers' style of delivery and the method of hitting/missing the ball is indicated as well.

### 7.7.1 Ball

*B* (*Ball*) is sent for each delivery towards the batsman.

Common event sequence:

***Ball in progress + B (1.2) + Possible Runs: 1 + Possible W + B (11.2) + [74:0] 1R + Ball complete***

### 7.7.2 No Ball

*NoB* (No Ball) signifies an illicit delivery by the bowler and one *Run* is awarded to the batting team.

Common event sequence:

***Ball in progress + B (15.3) + NoB + [101: 0] 1R + Ball complete***

### 7.7.3 Wide

*WIDE* is sent in case the bowler delivered the ball too high or too wide. One *Run* is awarded to the batting team.

Common event sequence:

***Ball in progress + B (1.1) + WIDE + [132:1] 1R + Ball complete***

### 7.7.4 Dot Ball

*Dot Ball* is sent in case a delivery is bowled without any runs or wickets scored of.

Common event sequence:

***Ball in progress + B (1.1) + Dot Ball + Ball complete***

### 7.7.5 Ball Update

*BU* (Ball Update) is sent in case the information related to a ball has to be adjusted. This is usually done during a score update (see chapter 7.10 *Score Confirmation & Correction after Coverage Interruptions*).

## 7.8 Penalty

Five *Runs* are awarded to the batting team as a penalty following fielding team infringements (hit helmet, illegal fielding, ball tampering and slow over rate).

Common event sequence:

***Ball in progress + B (15.3 PEN) + [101: 0] 5R + Ball complete***

## 7.9 Temporary Retirement of Batsman or Bowler

If a batsman is injured or falls ill while batting, he/she may retire and resume his/her innings at the dismissal or retirement of another batsman. If he/she cannot return by the end of the innings, the batting side must close its innings after all other batsmen have been dismissed.

RunningBall offers notifications if a batsman is injured and receives treatment or falls ill.

- > *Batsman [name] injured*
- > *Batsman [name] is back*

Common event sequence:

***Ball in progress + Possible W + B (6.5) + W + B (6.5) + Ball complete + Batsman [name] is back***

If a bowler is injured or falls ill while bowling, he/she may retire and resume bowling after having spent a certain time in a fielding position following his/her recovery. The time frame depends on the match format. After this time frame has passed the bowler may resume bowling at any point of the innings. He/she does not have to wait for an Over to be finished or a batsman to be dismissed.

RunningBall offers notifications if a bowler is injured and receives treatment or falls ill.

- > *Bowler [name] is inured*
- > *Bowler [name] is back*

Common event sequence:

***Ball in progress + B (1.1) + WIDE + [132:1] 1R + Ball complete + Bowler [name] is injured***

## 7.10 Score Confirmation & Correction after Coverage Interruptions

In case the Scout is disconnected, *Scout offline* is sent. As soon as the interruption is over, the scores are updated if needed.

If the score has changed during the interruption, the *Updating score* event is sent, followed by events that are generated to adjust the score. Once the score is adjusted, *Score updated* is sent.

**Important:** All events that are sent between *Updating score* and *Score updated* do NOT reflect the order of events they actually happened on the field.

In case an inning ended during the interruption, the score of the respective inning is not adjusted until the inning is stopped.

A possible command combination is described below:

***Updating score + UB + [0:4] C1R + Score updated***

## 7.11 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in cricket is provided in the table below.

System Message	Description
Please hold on, the connection in this area is down.	This message indicates that our Scout is facing connection issues.
Please hold on, we are rechecking the score.	This message indicates that the current game score is being investigated.
Please hold on, our coverage might start with a delay.	This message indicates that there is doubt that our coverage can be started on time.
Please hold on, we are trying to solve the problem.	This message indicates that we are working on a solution for a problem.
The score is correct: (%SCORE%)	This message confirms that our current game score is correct after we have investigated it.
The game has been restarted.	This message indicates that a suspended game has been restarted.
The game is suspended due to a power blackout at the venue.	This message indicates that the game is suspended due to a power blackout at the venue.
The game is suspended due to crowd trouble.	This message indicates that the game is suspended due to crowd trouble.
The game is suspended due to bad weather conditions.	This message indicates that the game is suspended due to bad weather conditions.
The game is suspended due to fog.	This message indicates that the game is suspended due to fog.
The game is suspended due to pyrotechnics being fired.	This message indicates that the game is suspended due to pyrotechnics being fired.
The game is suspended due to fighting players.	This message indicates that the game is suspended due to fighting players.
The game is suspended due to an injured referee.	This message indicates that the game is suspended due to an injured referee.
The game is suspended due to an unknown reason.	This message indicates that the game is suspended due to an unknown reason.
The game is suspended due to a water break.	This message indicates that the game is suspended due to a water break.
The game is suspended due to broken equipment.	This message indicates that the game is suspended due to broken equipment.
The game is suspended due to a serious injury.	This message indicates that the game is suspended due to a serious injury.
The game is suspended. The referees are rechecking the last play.	This message indicates that the game is suspended due to a player being injured.
The game is suspended due to an injured player.	This message indicates that the game is suspended due to a player being injured.
The game is suspended due to a tea break.	This message indicates that the game is suspended due to a tea break.
The game is suspended due to a drink break.	This message indicates that the game is suspended due to a drink break.
The game is suspended due to a dinner break.	This message indicates that the game is suspended due to a dinner break.
The game is suspended due to a lunch break.	This message indicates that the game is suspended due to a lunch break.

System Message	Description
The game is suspended. The referee is adjusting the scoreboard.	This message indicates that the game is suspended because the referee is adjusting the scoreboard.
The game is suspended but no official announcement was made at the venue.	This message indicates that the game is suspended but that no official announcement at the venue has been made.
The game is suspended due to a meal break.	This message indicates that the game is suspended due to a meal break.
The game is suspended due to rain.	This message indicates that the game is suspended due to rain.
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to bad pitch conditions.	This message indicates that the game had been officially cancelled due to bad pitch conditions.
The game is officially cancelled due to a waterlogged pitch.	This message indicates that the game had been officially cancelled due to the pitch being waterlogged.
The game is officially cancelled due to a frozen pitch.	This message indicates that the game had been officially cancelled due to the pitch being frozen.
The game is officially cancelled due to heavy snow.	This message indicates that the game had been officially cancelled due to heavy snow.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE% CET. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Our coverage will start in time.	This message indicates that we are able to start our coverage in time in case there has been any doubt on the matter.

System Message	Description
There is an official delay of the game start.	This message indicates that the game will start with an official delay.
Our coverage started with %SEC% seconds delay.	This message indicates that our coverage started with delay and informs about the delay in seconds.
Our coverage started with %SEC% seconds delay due to technical problems.	This message indicates that our coverage started with delay due to technical problems and informs about the delay in seconds.
The game will be played on a neutral venue.	This message indicates that the game will be played on a neutral venue.
Our coverage was started in time.	This message indicates that our coverage was started in time in case there has been any doubt on the matter.
Our coverage is suspended.	This message indicates that our coverage is suspended.
The new game start time is %TIME% CET.	This message indicates a new official game start time.
The game will be played at the venue of %COMP1%.	This message indicates that the game will be played at the venue of competitor 1.
The game will be played at the venue of %COMP2%.	This message indicates that the game will be played at the venue of competitor 2.
The game officially started at %TIME% CET.	This message indicates that the game was officially started but with a significant difference to the pre-announced game start time.
The new game start date is %DATE% CET.	This message indicates the new official game start date.
The next session starts on %DATE% at %TIME% CET.	This message indicates the official start time and date of the next session.
There is an official delay of the game start due to crowd trouble.	This message indicates that there is an official delay of the game start due to crowd trouble.
The new game start date is %DATE% CET. Our coverage is not confirmed yet.	This message indicates that there is a new official game start date and that it is not confirmed yet if we will offer the game.
The game is temporarily not resumed due to rain.	This message indicates that the game is temporarily not resumed due to rain.
The coach of %COMP1% got ejected.	This message indicates that the coach of competitor 1 got ejected from the game.
The coach of %COMP2% got ejected.	This message indicates that the coach of competitor 2 got ejected from the game.
The next period will start with an official delay.	This message indicates that there is an official delay of the start of the next game period.
Our coverage of the game was started prematurely. The game was reset and has not started yet.	This message indicates that our coverage of the game was started prematurely and that it has been reset.
Our coverage of the game was stopped prematurely. The game was reopened and is still running.	This message indicates that our coverage of the game was stopped prematurely and that it has been reopened.

System Message	Description
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

**Table 19 – System Messages – Cricket**

# 8 Command Logic Baseball

## 8.1 State Logic

### 8.1.1 Batting Team

RunningBall reports whether or not batting is in progress with the following events:

- > *Start Batting Competitor 1* (Competitor 1 is able to score runs)
- > *Stop Batting Competitor 1*
- > *Start Batting Competitor 2* (Competitor 2 is able to score runs)
- > *Stop Batting Competitor 2*

*Start Batting Competitor 1/2* is sent as soon as the batting team starts to bat before *Start Inning* and after *Half Inning*. It indicates that batting is in progress. Batting is stopped before *Stop Inning* and *Half Inning*. This is indicated by the *Stop Batting Competitor 1/2* command. It indicates that the team has stopped batting.

Common event sequences:

***Start Batting 1 + Runner on Base (B1: -; B2: -; B3: -) + Start Inning + Start Inning 1 + Next Batter 1 (player name, player number)***

***Half Inning + Start Batting 2 + Runner on Base (B1: -; B2: -; B3: -) + Next Batter 2 (player name, player number)***

***Play Finished + Stop Batting 2 + Half Inning***

***Play Finished + Stop Batting 1 + Stop Inning***

### 8.1.2 Pitcher Ready and Play Finished

RunningBall indicates whether or not a ball is in play:

- > *Pitcher Ready* (to be followed by score events)
- > *Play Finished* (not followed by score events)

*Pitcher Ready* is sent when the pitcher is on the pitcher's mound and ready to deliver the ball. *Play finished* is sent when the outcome of the play is known.

Common event sequences:

***Pitcher Ready + Strike 1 + Play Finished + Pitcher Ready***

***Pitcher Ready + Hit 1 + Triple 1 + Runner on Base (B1: -; B2: -; B3: loaded) + Play Finished + Pitcher Ready***

### 8.1.3 Open/Close Market

RunningBall offers notifications on when to suspend/allow betting.



- > *Close Market*
- > *Open Market*

The various scenarios in which suspended betting is recommended can be summarised the following way:

- > *Loss of connection to the database*
- > *Data corrections*

#### 8.1.4 Half Inning

*Half Inning* is sent to inform that the batting team changed. This happens once three offensive players are out or if none of the nine batters are left.

## 8.2 Match Play Modes

### 8.2.1 Game Status

The game start (Game Status: "running") is indicated with the first *Start Inning* event in the game. Every inning starts with a *Start Inning* event and ends with a *Stop Inning* event. At the end of a game, a *Stop game* event is sent and the status of the game changes to *Finished*.

## 8.3 Runners on Base

The *Runner on Base* event is sent every time the base load changes. This happens at the beginning of the inning or half inning (no bases loaded) and when a batter or runner advance to another base or score a run. A loaded base is indicated by the word *loaded* whilst an idle base is indicated with a dash "-". There are different possibilities for base loads:

- > No base loaded: *Runner on Base (B1: -; B2: -; B3: -)*
- > First base loaded: *Runner on Base (B1: loaded; B2: -; B3: -)*
- > Second base loaded: *Runner on Base (B1: -; B2: loaded; B3: -)*
- > Third base loaded: *Runner on Base (B1: -; B2: -; B3: loaded)*
- > First and second base loaded: *Runner on Base (B1: loaded; B2: loaded; B3: -)*
- > First and third base loaded: *Runner on Base (B1: loaded; B2: -; B3: loaded)*
- > Second and third base loaded: *Runner on Base (B1: -; B2: loaded; B3: loaded)*
- > All bases loaded: *Runner on Base (B1: loaded; B2: loaded; B3: loaded)*

Common event sequences:

***Start Batting 1 + Runner on Base (B1: -; B2: -; B3: -) + Start Inning + Start Inning 1***

***Half Inning + Start Batting 2 + Runner on Base (B1: -; B2: -; B3: -)***

***Pitcher Ready + Hit 2 + Double 2 + Runner on Base (B1: -; B2: loaded; B3: -) + Play Finished***

***Pitcher Ready + Ball 1 + Steal 1 + Runner on Base (B1: -; B2: -; B3: loaded) + Play Finished***

## 8.4 Run

Runs are key events in baseball. They are the method of scoring. When a runner reaches the home plate, a run is awarded. All *Run* events can be considered as confirmed as soon as the next *Play Finished* event is sent. If the batter manages to circle all bases at once and reaches the home plate after he hit the ball, a home run is awarded.

Common event sequences:

***Pitcher Ready + [1:5] Run 2 (player number) + Hit 2 + Double 2 + Runner on Base (B1: -; B2: loaded; B3: -) + Play Finished***

## 8.5 Hit

*Hit* is sent when the batter hits the ball and manages to reach the base safely. Depending on the reached base a *Single*, *Double*, *Triple* or *Home Run* is sent in addition.

- > *Single* (Batter reaches first base)
- > *Double* (Batter reaches second base)
- > *Triple* (Batter reaches third base)
- > *Home Run* (Batter reaches home plate and scores a run)

Common event sequences:

***Pitcher Ready + Hit 2 + Double 2 + Runner on Base (B1: -; B2: loaded; B3: -) + Play Finished***

***Pitcher Ready + [3:2] Run 1 (player number) + Hit 1 + Home Run 1 + Runner on Base (B1: -; B2: -; B3: -) + Play Finished***

## 8.6 Error

*Error* is sent when a fielder misplays a ball in a manner that allows a batter or runner to advance one or more bases. An Error can lead to a run being scored.

Common event sequences:

***Pitcher Ready + Error 2 + Runner on Base (B1: -; B2: loaded; B3: -) + Play Finished***

***Pitcher Ready + [3:2] Run 1 (player name, player number) + Error 2 + Runner on Base (B1: loaded; B2: -; B3: -) + Play Finished***

## 8.7 Ball

*Ball* is sent when the pitcher throws the ball towards the batter, but the ball misses the strike zone. A ball is only awarded when the batter is not attempting to swing.

Common event sequence:

***Pitcher Ready + Ball 1 + Play Finished***

## 8.8 Strike

*Strike* is sent when the pitched ball passes through the strike zone without being hit or if the batter swings for the ball and misses.

Common event sequences:

***Pitcher Ready + Strike 1 + Play Finished***

## 8.9 Steal

A *Steal* is sent when a runner advances to the next base before or whilst the pitcher is pitching the ball.

Common event sequence:

***Pitcher Ready + Ball 1 + Steal 1 + Runner on Base (B1: -; B2: -; B3: loaded) + Play Finished***

## 8.10 Foul

*Foul* is sent when the batter hits a foul ball.

Common event sequence:

***Pitcher Ready + Foul 2 + Play Finished***

## 8.11 Out

*Out* is sent when a batter or runner is ruled out by the umpire. There are different events causing the batter or runner to be out.

### 8.11.1 Out

The runner is put out by the fielder stepping on the base with the live ball in hand before the runner reaches the base and the *Out* event is sent.

***Pitcher Ready + Out 1 (player name, player number) + Play Finished***

### 8.11.2 Strike Out

When a batter racks up three strikes during his time at bat, a *Strike Out* is sent.

***Pitcher Ready + Out 1 (player name, player number) + Strike Out 1 + Play Finished***

### 8.11.3 Fly Out

When a batter is put out by a fielder because the batted ball is caught in flight, *Fly Out* is sent.

***Pitcher Ready + Out 2 (player name, player number) + Fly Out 2 + Play Finished***

#### 8.11.4 Tag Out

When a runner is touched by the fielder holding the live ball, the runner is tagged out and *Tag Out* is sent.

***Pitcher Ready + Out 2 (player name, player number) + Tag Out 2 + Play Finished***

#### 8.11.5 Force Out

When a runner who is forced to advance to the next base is put out by the fielder on base or tagged out, the runner is forced out of play and *Force Out* is sent.

***Pitcher Ready + Out 1 (player name, player number) + Force Out 1 + Play Finished***

#### 8.11.6 Caught Stealing

When a runner, who is attempting to steal a base, is put out by the fielder on base or tagged out, the runner is caught stealing the base and *Caught Stealing* is sent.

***Pitcher Ready + Out 2 (player name, player number) + Caught Stealing 2 + Play Finished***

#### 8.11.7 Multiple Outs

If multiple players are put out within one continuous play an additional information on how many players are out is sent. There are two different possibilities.

- > *Double Play* (two players are put out within one continuous play)
- > *Triple Play* (three players are put out within one continuous play)

Common event sequences:

***Pitcher Ready + Out 1 (player name, player number) + Force Out 1 + Out 1 (player name, player number) + Double Play 2 + Play Finished***

***Pitcher Ready + Out 2 (player name, player number) + Fly Out 2 + Out 2 (player name, player number) + Tag Out 2 + Out 2 (player name, player number) + Triple Play 1 + Play Finished***

### 8.12 Batter Advancement

A batter may automatically advance to first base in certain situations.

#### 8.12.1 Walk

*Walk* is sent if a pitcher throws four balls at the same batter that are ruled as outside the strike zone by the umpire without the batter attempting to swing for the ball (see chapter 8.7 *Ball*).

Common event sequence:

***Pitcher Ready + Ball 1 + Walk 1 + Runner on Base (B1: loaded; B2: -; B3: loaded) + Play Finished***

#### 8.12.2 Intentional Walk

*Intentional Walk* is sent if a pitcher throws the fourth *Ball* deliberately outside the strike zone to force the batter to advance to first base.

Common event sequence:

***Pitcher Ready + Ball 2 + Intentional Walk 2 + Runner on Base (B1: loaded; B2: -; B3: loaded) + Play Finished***

#### 8.12.3 Hit by Pitch

*Hit by Pitch* is sent if the batter or the batter's equipment (excluding his bat) is hit by the pitched ball outside the strike zone.

Common event sequence:

***Pitcher Ready + Hit by Pitch 1 + Runner on Base (B1: loaded; B2: -; B3: -) + Play Finished***

### 8.13 Fielders Choice

*Fielders Choice* is sent when a batter or runner is able to safely advance to the next base because the defensive team decides to put out a preceding runner on another base.

Common event sequence:

***Pitcher Ready + Hit 1 + Single 1 + Out 1 (player name, player number) + Fielders Choice 1 + Runner on Base (B1: loaded; B2: -; B3: -) + Play Finished***

### 8.14 Uncaught Third Strike

*Uncaught Third Strike* is sent when a catcher fails to cleanly catch a pitch for the third strike. The outcome of an uncaught third strike is either the batter reaching first base safely or being put out or tagged out by the fielder. Regardless of the outcome (batter successfully advances or is put out during the attempt to advance to base) a strike out is awarded.

### 8.15 Next Batter

*Next Batter* is sent every time a new batter is entering the field of play. This occurs at the start of the inning or half inning or after the preceding batter is put out by the defending team.

Common event sequences:

**Out 2** (player name, player number) + **Strike Out 2 + Runner on Base** (B1: -; B2: -; B3: -) + **Play Finished + Next Batter 2** (player name, player number)

**Half Inning + Start Batting 2 + Runner on Base** (B1: -; B2: -; B3: -) + **Next Batter 2** (player name, player number)

**Start Batting 1 + Runner on Base** (B1: -; B2: -; B3: -) + **Start Inning + Start Inning 1 + Next Batter 1** (player name, player number)

## 8.16 Pitcher Changed

*Pitcher Changed* is sent every time the defending team changes the pitching player.

Common event sequence:

**Play finished + Pitcher Changed 1** (player name, player number) + **Pitcher Ready**

## 8.17 Ejection

In case a player is expelled from the game, *Ejection* is sent.

## 8.18 Challenge

In baseball, league officials are allowed to instantly review a variety of plays to verify the umpire's initial call. This might lead to an amendment of the previously sent events. An instant video review is indicated by the *VAR started* and *VAR finished* events.

## 8.19 Score Confirmation & Correction after Coverage Interruptions

In case of a disconnection, *Scout offline* is sent. As soon as the interruption is over, the scores are updated if needed.

If the score has changed during the interruption, the *Updating score* event is sent, followed by events that are generated to adjust the score. Once the score is adjusted, *Score updated* is sent.

**Important:** All events that are sent between *Updating score* and *Score updated* do NOT reflect the order of events they actually happened on the field.

In case an inning ended during the interruption, the score of the respective inning is not adjusted until the inning is stopped.

A possible command combination is described below:

**Updating score + CBall 2 + Strike 2 + Score updated**

## 8.20 System Messages

Whenever necessary, pre-defined messages are entered into the system in order to inform the customers about extraordinary incidents, score corrections, coverage delays or other game related matters which are not provided in the event feed. These announcements are displayed as System Messages in the RunningBall Trader Client. An overview of the System Messages used in baseball is provided in the table below.

System Message	Description
We are sorry, we have to cancel our coverage of this game.	This message indicates that we cannot offer the game anymore.
The game is officially cancelled.	This message indicates that the game had been officially cancelled before the scheduled game start.
The game is officially postponed. The new date is unknown.	This message indicates that the game had been officially postponed and that we do not have any information about the new date.
We are sorry, we have to cancel our coverage of this game due to an unavailable connection in this area.	This message indicates that we cannot offer the game anymore due to an unavailable GPRS network in the area of the venue
We are sorry, we have to cancel our coverage of this game due to technical problems.	This message indicates that we cannot offer the game anymore due to technical problems on our side.
We are sorry, we have to cancel our coverage of this game due to a TV broadcasting error.	This message indicates that we cannot offer the game covered via TV anymore due to a TV broadcasting error.
The game is officially cancelled due to bad weather conditions.	This message indicates that the game had been officially cancelled due to bad weather conditions.
The game is officially cancelled due to bad pitch conditions.	This message indicates that the game had been officially cancelled due to bad pitch conditions.
The game is officially cancelled due to a waterlogged pitch.	This message indicates that the game had been officially cancelled due to the pitch being waterlogged.
The game is officially cancelled due to a frozen pitch.	This message indicates that the game had been officially cancelled due to the pitch being frozen.
The game is officially cancelled due to heavy snow.	This message indicates that the game had been officially cancelled due to heavy snow.
The game is officially cancelled due to fog.	This message indicates that the game had been officially cancelled due to fog.
The game was officially abandoned by the referee.	This message indicates that the game was abandoned by the referee.
The game was officially postponed.	This message indicates that the game was officially postponed.
The new game start date is %DATE%. The new ticker %TICKERID% has been created.	This message indicates that a new game start date and a new ticker for the game were created.
Other (free text)	Free text System Messages are sent to inform about extraordinary situations that are not part of the present list of System Messages.

Table 20 – System Messages – Baseball

# 9 Other Important Events

## 9.1 Game Cancelled

A *Game Cancelled* event is sent if RunningBall cannot offer a match anymore. The reason for cancelling the coverage of a game is stated in the corresponding System Message.

## 9.2 Event Time Corrections

When an event is entered too late, an *Event Time Correction* is used to indicate that it has actually occurred earlier, including an approximate timestamp. The accuracy of this information depends on the references that are used for cross-checking the event.

### **Example:**

A yellow card in minute 20 was missed. It was sent later in minute 40. An additional *Event Time Correction* associated to the event is sent, providing information about the corrected time.

## 9.3 Game Start

The *Game Start* event is sent when the match starts at the venue. RunningBall Scouts enter this command as soon as the referee indicates the match start. The *Game Start* command triggers the *Game Time* event that is provided by RunningBall.

RunningBall Scouts always monitor the game time and enter the exact time as on the official scoreboard manually (e.g. when the coverage of the game started late or when the game clock in our system and on the scoreboard diverge after a disconnection).



# 10 Appendix

## 10.1 Table of Tables

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