

Raw Data – Message Format

The SportVU system sends packets on UDP or TCP port, each packet including a message. Each message includes players & ball positions for a specific time frame.

The message format is the following:

[System Time in milliseconds; milliseconds of the current half, half indicator, whether match is in play] or [time code]: player coordinates; ball coordinates; Packet delimiter

Parameter	Descriptions	
Time		
	System time in milliseconds (This time is not related to the match time)	1302693837034;-1,0,0:0,2277,- 1,58.41,40.34;3,2288,- 1,105.11,36.90;1,2325,- 1,55.33,51.21;0,2342,- 1,70.78,55.78;0,2146,10,60.28,47.25;0,2241,- 1,49.04,53.87;1,2329,-1,45.05,30.68;0,1896,- 1,71.27,45.73;0,2242,-1,60.69,24.87;0,2352,- 1,69.45,36.94;1,2221,-1,52.67,42.87;4,2270,- 1,19.93,34.82;0,2258,-1,48.95,53.23;1,2281,- 1,49.51,46.27;1,2204,-1,56.09,53.07;2,2158,- 1,50.92,48.30;0,2330,-1,66.82,25.93;1,2263,- 1,52.72,47.56;1,2358,- 1,51.16,44.97;1,2271,11,54.52,48.42;1,2001,- 1,58.22,42.20;0,2168,- 1,60.59,58.14;:21.16,68.62,0.00;
Time with pause/resume indicator		
	Game is being played. 0 is for NO Pause.	Game is being played 1302693837034;-1,0,0:0,2277,- 1,58.41,40.34;3,2288,- 1,105.11,36.90;1,2325,- 1,55.33,51.21;0,2342,- 1,70.78,55.78;0,2146,10,60.28,47.25;0,2241,- 1,49.04,53.87;1,2329,-1,45.05,30.68;0,1896,- 1,71.27,45.73;0,2242,-1,60.69,24.87;0,2352,- 1,69.45,36.94;1,2221,-1,52.67,42.87;4,2270,-

		1,19.93,34.82;0,2258,-1,48.95,53.23;1,2281,-1,49.51,46.27;1,2204,-1,56.09,53.07;2,2158,-1,50.92,48.30;0,2330,-1,66.82,25.93;1,2263,-1,52.72,47.56;1,2358,-1,51.16,44.97;1,2271,11,54.52,48.42;1,2001,-1,58.22,42.20;0,2168,-1,60.59,58.14;;21.16,68.62,0.00;
	Game is Paused. 1 is for Pause.	1302693837034;-1,0,1:0,2277,-1,58.41,40.34;3,2288,-1,105.11,36.90;1,2325,-1,55.33,51.21;0,2342,-1,70.78,55.78;0,2146,10,60.28,47.25;0,2241,-1,49.04,53.87;1,2329,-1,45.05,30.68;0,1896,-1,71.27,45.73;0,2242,-1,60.69,24.87;0,2352,-1,69.45,36.94;1,2221,-1,52.67,42.87;4,2270,-1,19.93,34.82;0,2258,-1,48.95,53.23;1,2281,-1,49.51,46.27;1,2204,-1,56.09,53.07;2,2158,-1,50.92,48.30;0,2330,-1,66.82,25.93;1,2263,-1,52.72,47.56;1,2358,-1,51.16,44.97;1,2271,11,54.52,48.42;1,2001,-1,58.22,42.20;0,2168,-1,60.59,58.14;;21.16,68.62,0.00;
Whether match is in play, and half descriptors		
	-1 means match is not in play. A zero following the -1 means that the first half has not started.	Before game start 1302693837034;-1,0,0:0,2277,-1,58.41,40.34;3,2288,-1,105.11,36.90;1,2325,-1,55.33,51.21;0,2342,-1,70.78,55.78;0,2146,10,60.28,47.25;0,2241,-1,49.04,53.87;1,2329,-1,45.05,30.68;0,1896,-1,71.27,45.73;0,2242,-1,60.69,24.87;0,2352,-1,69.45,36.94;1,2221,-1,52.67,42.87;4,2270,-1,19.93,34.82;0,2258,-1,48.95,53.23;1,2281,-1,49.51,46.27;1,2204,-1,56.09,53.07;2,2158,-1,50.92,48.30;0,2330,-1,66.82,25.93;1,2263,-1,52.72,47.56;1,2358,-1,51.16,44.97;1,2271,11,54.52,48.42;1,2001,-

		1,58.22,42.20;0,2168,- 1,60.59,58.14;;21.16,68.62,0.00;
	Following the milliseconds time, a match time in milliseconds is provided, followed by a 1. The 1 indicates that this is the first half.	First Half 1302694118351;12102,1,0:0,2367,- 1,79.17,67.63;3,2288,-1,95.54,41.46;1,2325,- 1,47.02,60.98;0,2369,- 1,69.66,23.67;0,2146,10,81.58,52.39;0,2241,- 1,33.74,31.12;0,2385,-1,74.53,37.26;0,1896,- 1,47.57,61.55;0,2389,-1,46.33,23.63;0,2352,- 1,50.77,35.34;1,2221,-1,52.90,38.57;1,2401,- 1,41.32,22.07;1,2374,-1,44.46,38.32;1,2281,- 1,43.54,33.02;1,2204,-1,51.20,46.04;2,2158,- 1,51.39,47.33;4,2399,-1,11.35,32.65;1,2383,- 1,42.47,51.56;1,2358,-1,64.30,34.81;0,2360,- 1,40.79,36.91;1,2271,11,57.29,40.70;0,2168,- 1,60.57,41.89;;
	-1,1 indicates that we are at break, following the conclusion of the first half.	Half time (break) 1302694137551;-1,1,0:0,2432,- 1,58.51,65.81;3,2288,-1,91.58,31.21;1,2325,- 1,36.80,53.89;0,2369,- 1,56.00,5.93;0,2146,10,69.01,42.61;0,2241,- 1,31.17,33.98;0,2385,-1,70.59,23.65;0,1896,- 1,38.78,57.17;0,2389,-1,48.43,1.07;0,2352,- 1,61.43,24.06;1,2221,-1,59.46,22.59;1,2401,- 1,39.65,11.58;1,2374,-1,36.43,31.47;1,2281,- 1,34.10,25.99;1,2204,-1,48.78,34.57;2,2158,- 1,45.41,35.44;4,2399,-1,7.33,32.40;1,2383,- 1,32.01,39.80;1,2358,-1,53.77,10.63;0,2360,- 1,30.19,40.66;1,2271,11,58.88,27.83;0,2168,- 1,61.76,40.33;;
	A match time in milliseconds, followed by a 2 indicates the second half is in progress.	Second half 1302694148511;2706397,2,0:0,2432,- 1,46.92,61.13;3,2288,-1,91.56,33.88;1,2325,- 1,22.54,48.62;0,2369,- 1,43.87,4.71;0,2146,10,56.34,35.40;0,2241,- 1,16.59,33.87;0,2385,-1,53.56,21.81;0,1896,- 1,26.02,50.77;0,2433,-1,36.19,16.54;0,2352,- 1,30.50,26.53;1,2221,-1,31.50,21.74;1,2401,-

		1,25.89,12.52;1,2374,-1,16.68,33.88;1,2281,-1,16.83,27.77;1,2204,-1,31.86,29.58;2,2158,-1,35.56,35.27;4,2399,-1,1.86,32.04;1,2383,-1,18.74,39.34;1,2358,-1,31.75,11.54;0,2360,-1,21.77,41.99;1,2271,11,45.34,21.36;0,2168,-1,48.82,35.21;;;
	-1,2 indicates that we are at break, following the conclusion of the second half.	Break before overtime 1302694165951;-1,2,0:0,2432,-1,29.23,58.25;3,2288,-1,85.55,36.22;1,2325,-1,20.12,59.70;0,2437,-1,40.46,19.63;0,2146,10,48.77,47.55;0,2241,-1,15.95,31.27;0,2385,-1,50.53,33.85;0,1896,-1,31.33,64.44;0,2433,-1,24.26,30.91;0,2352,-1,33.36,43.03;1,2221,-1,27.58,40.55;1,2401,-1,17.21,25.76;1,2374,-1,16.55,43.82;1,2281,-1,14.63,30.16;1,2204,-1,28.79,54.98;2,2158,-1,34.26,50.16;4,2399,-1,3.44,36.32;1,2383,-1,22.72,40.89;1,2358,-1,40.13,29.07;0,2360,-1,19.64,39.86;1,2271,11,41.65,47.36;0,2168,-1,41.31,58.09;;;
	A match time in milliseconds, followed by a 3 indicates the first half of the extra period is in progress.	First half overtime 1302694174911;5396942,3,0:0,2432,-1,53.64,68.17;3,2288,-1,87.90,39.15;1,2325,-1,34.18,62.92;0,2437,-1,65.26,33.64;0,2146,10,49.88,56.93;0,2241,-1,28.44,32.23;0,2385,-1,67.96,50.31;0,1896,-1,47.72,64.51;0,2433,-1,41.94,30.03;0,2352,-1,52.24,48.05;1,2221,-1,45.94,42.58;1,2401,-1,32.14,23.76;1,2374,-1,28.37,47.76;1,2281,-1,29.54,31.40;1,2204,-1,39.27,51.66;2,2158,-1,44.65,50.76;4,2399,-1,8.00,34.38;1,2383,-1,38.51,46.32;1,2358,-1,61.81,38.97;0,2360,-1,33.90,58.70;1,2271,11,53.56,67.77;0,2168,-1,54.13,67.51;;;
	-1,3 indicates that we are at break, following the conclusion of the third period.	Break between overtime halves 1302694198190;-1,3,0:1,2464,-1,65.47,58.50;3,2288,-1,98.07,36.67;0,2437,-1,80.13,39.95;0,2146,10,69.31,59.71;0,2241,-

		1,46.61,33.99;0,2385,-1,74.53,45.80;0,1896,-1,55.04,57.40;0,2433,-1,62.71,25.68;0,2352,-1,59.04,46.60;1,2221,-1,56.19,38.66;1,2401,-1,54.40,19.47;1,2374,-1,40.04,50.86;1,2281,-1,38.83,35.23;1,2204,-1,64.00,60.74;2,2158,-1,63.48,38.70;4,2399,-1,12.77,35.46;1,2383,-1,52.03,47.02;1,2358,-1,76.38,47.50;0,2360,-1,40.31,44.35;1,2271,11,64.48,51.33;0,2461,-1,68.69,57.82;0,2168,-1,76.47,55.28;;;
	A match time in milliseconds, followed by a 4 indicates the second half of the extra period is in progress.	Second half overtime 1302694208551;6308694,4,0:1,2464,-1,84.24,68.79;3,2288,-1,102.38,36.64;0,2437,-1,91.19,34.69;0,2146,10,91.75,58.79;0,2241,-1,48.88,37.49;0,2385,-1,90.22,43.57;0,1896,-1,77.08,55.14;0,2433,-1,81.70,27.16;0,2352,-1,84.07,40.83;1,2221,-1,70.90,38.10;1,2401,-1,71.79,17.73;1,2374,-1,53.46,49.25;1,2281,-1,52.33,37.35;1,2204,-1,67.84,53.56;2,2158,-1,79.22,41.41;4,2399,-1,15.12,36.58;1,2383,-1,60.49,44.97;1,2358,-1,88.31,42.67;0,2360,-1,68.47,46.82;1,2271,11,86.39,48.01;0,2461,-1,86.85,54.44;0,2168,-1,90.96,48.65;;;
	-1,4 indicates that we are at break, following the conclusion of the fourth period.	End of match 1302694215031;-1,4,0:3,2288,-1,104.10,35.84;0,2437,-1,95.00,35.99;0,2146,10,96.27,55.96;0,2241,-1,48.19,37.71;0,2385,-1,95.42,43.49;0,1896,-1,83.03,57.42;0,2433,-1,86.42,25.99;0,2352,-1,86.56,39.25;1,2221,-1,76.50,37.93;1,2401,-1,74.81,20.62;1,2374,-1,51.53,52.88;1,2281,-1,49.56,36.16;1,2204,-1,70.72,56.63;2,2158,-1,82.64,42.09;4,2399,-1,14.57,34.65;1,2383,-1,64.44,42.31;1,2358,-1,91.78,43.85;0,2360,-1,68.68,52.65;1,2271,11,97.30,63.18;0,2461,-1,90.65,55.13;;;
	Time code	15.57.31.20:0,2277,-1,58.41,40.34;3,2288,-1,105.11,36.90;1,2325,-1,55.33,51.21;0,2342,-

	Generated by a time code machine to sync data stream with video.	1,70.78,55.78;0,2146,10,60.28,47.25;0,2241,-1,49.04,53.87;1,2329,-1,45.05,30.68;0,1896,-1,71.27,45.73;0,2242,-1,60.69,24.87;0,2352,-1,69.45,36.94;1,2221,-1,52.67,42.87;4,2270,-1,19.93,34.82;0,2258,-1,48.95,53.23;1,2281,-1,49.51,46.27;1,2204,-1,56.09,53.07;2,2158,-1,50.92,48.30;0,2330,-1,66.82,25.93;1,2263,-1,52.72,47.56;1,2358,-1,51.16,44.97;1,2271,11,54.52,48.42;1,2001,-1,58.22,42.20;0,2168,-1,60.59,58.14;;21.16,68.62,0.00;
Player coordinates		
	The X and Y coordinated are provided in unit of meter from 0 to FIELD_WIDTH / FIELD_HEIGHT * The X=0 and Y=0 on top left of the pitch. This part of the message is composed by the following structure: TeamId, ObjectId, JerseyNumber, X, Y	
	Team ID	Identifies the teams and the referee: 0 – Home Team 1 – Visiting Team 2 – Referee 3 – Home Goalkeeper 4 – Visiting Goalkeeper
	ObjectId	Identifies object tracked on pitch
	JerseyNumber	Identifies jersey of player
	X	X coordinate from 0 to FIELD_WIDTH *
	Y	Y coordinate from 0 to FIELD_HEIGHT *

	;	Delimiter of the sub message
Ball coordinate	The X and Y coordinated are provided in unit of meter from 0 to FIELD_WIDTH / FIELD_HEIGHT * The X=0 and Y=0 on top left of the pitch. The Z coordinate is provided only for the ball and is expressed in meters from the ground.	
	X	X coordinate from 0 to FIELD_WIDTH *
	Y	Y coordinate from 0 to FIELD_HEIGHT *
	Z	Z expressed in meter (float value)
	;	Delimiter of the sub message
Message Delimiter		Mark the end of the message
	/n	Delimiter of the entire message

* X, Y coordinates can be negative values or values above FIELD_WIDTH/FIELD_HEIGHT When the tracking area includes margin of the pitch.

- If a player or the ball is out of the tracking area, it will not appear in the message data.
- When a player is unidentified its jersey number value

is -1 Example:

System Time

1295976425457;2734479,2,0:2,3803,90,78.12,19.81;0,3809,11,77.95,19.67;0,3811,5,85.66,33.54;1,3813,4,55.86,12.73;0,3815,18,71.93,13.12;0,3818,9,59.98,11.51;1,3819,22,67.11,40.88;1,3820,16,65.45,21.41;0,3823,4,86.53,27.92;1,3824,13,78.27,17.41;1,3827,17,74.19,10.95;0,3829,17,71.47,7.82;0,3832,3,85.05,19.19;3,3835,1,101.16,30.72;0,3836,10,73.24,29.04;0,3837,6,77.06,9.63;4,3838,1,4.90,32.39;1,3839,3,53.74,26.21;1,3840,7,69.85,12.17;1,3841,6,83.09,31.11;1,3842,10,88.05,16.59;0,3843,7,79.91,21.70;0,3845,-1,83.20,5.61;1,3846,-1,69.47,7.37;71.83,7.38,0.84;

1295976425457; → System time

2734479, → milliseconds into the match. Match time: 45 minutes, 34 seconds, 479 milliseconds

2, → Current half is second half

0: → game clock NOT paused

Time Code

15.59.39.05:2,3803,90,78.12,19.81;0,3809,11,77.95,19.67;0,3811,5,85.66,33.54;1,3813,4,55.86,12.73;0,3815,18,71.93,13.12;0,3818,9,59.98,11.51;1,3819,22,67.11,40.88;1,3820,16,65.45,21.41;0,3823,4,86.53,27.92;1,3824,13,78.27,17.41;1,3827,17,74.19,10.95;0,3829,17,71.47,7.82;0,3832,3,85.05,19.19;3,3835,1,101.16,30.72;0,3836,10,73.24,29.04;0,3837,6,77.06,9.63;4,3838,1,4.90,32.39;1,3839,3,53.74,26.21;1,3840,7,69.85,12.17;1,3841,6,83.09,31.11;1,3842,10,88.05,16.59;0,3843,7,79.91,21.70;0,3845,-1,83.20,5.61;1,3846,-1,69.47,7.37;71.83,7.38,0.84;

15.59 .39.05 → Time code

2,3803,90,78.12,19.81; → Referee, referee ID, referee number, X coordinate of referee, Y coordinate

0,3809,11,77.95,19.67; → Home team player, player ID, jersey number, X coordinate, Y coordinate

0,3811,5,85.66,33.54;

1,3813,4,55.86,12.73; → Visiting team player, player ID, jersey number, X coordinate, Y coordinate

0,3815,18,71.93,13.12;

0,3818,9,59.98,11.51;


```

1,3819,22,67.11,40.88;
1,3820,16,65.45,21.41;
0,3823,4,86.53,27.92;
1,3824,13,78.27,17.41;
1,3827,17,74.19,10.95;
0,3829,17,71.47,7.82;
0,3832,3,85.05,19.19;
3,3835,1,101.16,30.72; → Home GK
0,3836,10,73.24,29.04;
0,3837,6,77.06,9.63;
4,3838,1,4.90,32.39; → Visitor GK
1,3839,3,53.74,26.21;
1,3840,7,69.85,12.17;
1,3841,6,83.09,31.11;
1,3842,10,88.05,16.59;
0,3843,7,79.91,21.70;
0,3845,-1,83.20,5.61;
1,3846,-1,69.47,7.37;
:71.83,7.38,0.84; →X, Y, Z Ball coordinates
\n End of message
    
```