

Universal Sports Network Protocol (USNP 1.0)

Small packet base protocol for communication between devices and nodes of the Information System of Fencing Competitions

Universal Sports Network Protocol 1.0 (USNP) is designed for use on the Information System of Fencing Competitions, matching the requirements of standard SEMI 1.0.

Universal Sports Network Protocol 1.0 (USNP) is designed for data exchange between any nodes and devices used at the fencing competitions.

Cyrano protocols (versions 1.0 and 2.0) set on the base of the commands in the form of symbols strings what is very convenient for the perception and for processing by the personal computers. It allows to develop and test easily new information systems. On the other hand symbolic commands have a number of disadvantages during the exchange between the low-level systems¹:

- The commands have more length (e.g., INFO commands delivering Master conditions have length more than 200 symbols, i.e. bytes;
- Parameters in commands have variable point of start and end (because of the not fixed length of the participants' names);
- Certain parameters use extra memory capacity for storage of its value (sign that the lamp is lightened, is kept in one symbol-byte, however one byte is enough to keep it). некоторые параметры используют излишний объем памяти для хранения своего значения (признак того, что горит лампа, хранится в одной символе-байте, хотя для хранения достаточно одного бита).

These and other features of Cyrano protocols make the use of data exchange with low-level devices impossible. Эти и некоторые иные особенности протоколов Cyrano делают невозможным их использования обмена информацией с низкоуровневыми устройствами.

Besides, Cyrano protocols do not have mechanisms of sending of big files as files with photos of the athletes, flags, e.t.c.

Universal Sports Network Protocol 1.0 (USNP) designed to solve all the described problems and provide the producers with the single data delivery protocol between the devices of any level.

Each producer of the electronic fencing equipment (apparatus, information stands, information competitions systems e.t.c) must support systems USNP 1.0. protocol.

¹ For example between Master and outer lamps-repeaters.

Features Protocol USNP 1.0

USNP 1.0 protocol implements the mechanism of delivery of the information with the use of packages of the fixed 32 byte which are used as follows:

Number of the byte in package.	Purpose of the byte
0	Always equal to AAh
1	Command group code. For example, INFO command has several variants: with main, additional and extended information. (see the description of INFO command below).
2	Command code in command group. If there is only one command in the group, it is not used.
3-30	Command parameters.
31	Byte, containing a protocol version in senior part (for USNP 1.0 is equal to zero), and in minor part – code of the kind of sport (for fencing it is equal to Ah). Thus, for the current version of the protocol and fencing the last byte is always equal to 0Ah.

All the non used (empty) bytes in packages must be filled in with zeros (00h)

Mechanisms of interaction between the Information System of Fencing Competitions nodes are described in SEMI 1.0 Standard and Cyrano 2.0 protocol. Than only the command formats and their specifications are described in one or another transportation field (RS-485, UDP, TCP/IP, etc).

Commands Protocol USNP 1.0

Commands Code

Command group name	Command group code (hex)	Command name	Command code (hex)
HELLO	01h	-	-
INFO	02h	Important information	01h
		Additional information	02h
		Extended information (full-length, name of the athlete/team)	03h
		Request to receive the name of the athlete	04h
DISP	03h	General information about the bout	01h
		Additional information about the athlete/team	02h
		Extended information about the athlete/team	03h
		Request to receive information about the bout(s)	04h
BOUTSTOP	04h		-
TEAM	05h		-
GETTEAM	11h		-
REPLACE	06h		-
NAK	07h		-
ACK	08h		-
PREV	09h		-
NEXT	0Ah		-
UPDATED	0Bh		-
STANDBY	0Ch		-
BROKEN	0Dh		-
MSG	0Eh	Message, image, media file (title)	01h
		Message, image, media file (data)	02h
		Request to repeat the message	03h
STOP	0Fh		-
PING	10h		-

HELLO

Предназначена для организации связи между узлами.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command	HELLO	01h
2	PisteCode	Piste code in number format (optional parameter)	01h-40h
3-30		Not used	00h
31	Protocol and sport Code		0Ah

Examples:

Piste 1

- AAh, 01h, 01h, 00h, ..., 00h, 0Ah

Piste Final - AAh, 01h, 3Ch, 00h, ..., 00h, 0Ah
Piste Green - AAh, 01h, 40h, 00h, ..., 00h, 0Ah

INFO

Group of the commands aimed to transfer information about Master's state. It has four commands:

- Important information – includes information about the state of the bout (time, lamps, score, e.t.c)
- Additional information – names of the participants - last names of the participants
- Extended information – information by one last name on the right or on the left.
- Request to receive the name of the athletes – used when it is necessary to get full information about the athlete

INFO (important information)

This command transfers all the important for additional devices information: time of the bout, state of the lamps, number of a match e.t.c. Besides, the most important data for the information system is transferred: code of the piste, ID of the athletes, ID of the bout, e.t.c.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	INFO	02h
2	Command	INFO – important information	01h
3	PisteCode	Piste code in number format	01h-40h
4	Flags1	Флаги (by bytes): 0 – right lamp (green) 1 – left lamp (red) 2 – right white lamp (green white lamp) 3 – left white lamp (red white lamp) 4 – right yellow card 5 – left yellow card 6 – right black card 7 – left black card	0h - FFh
5	State of the stopwatch – minutes		
6	State of the stopwatch - Seconds		
7	State of the stopwatch – thousandths 1		
8	State of the stopwatch – thousandths 2		
9	Round		
10	State	State of the bout: N- participants of the next bout are not set; W- participants of the next bout are set but the bout is not activated;	

		<p>H- the bout is activated but the stopwatch is not started or is stopped;</p> <p>F- the stopwatch of the bout is started;</p> <p>P-pause at the stopwatch (a break between the matches) is started;</p> <p>M- time of the medical break is started;</p> <p>E- the confirmation of the end of the bout is requested (the referee has sent the request to end the bout but the answer from the server is not received)</p> <p>A- the bout has finished and deactivated (one can send the participants).</p>	
11	Flags 2	<p>Flags (by bytes):</p> <p>0 – referee remote control</p> <p>1 – call technical</p> <p>2 – call video</p> <p>3 – call doctor</p> <p>4 – call TD</p> <p>5 - reverse</p> <p>6 - standby</p> <p>7 – nor used</p>	
12	Score right		
13	Score left		
14	Count of used video	<p>Low 4 bytes – right athlete, ,</p> <p>High 4 bytes – left athlete</p>	
15-16	ID right	ID of the right athlete. If the ID is more than 65535 the low are 2 bytes	
17-18	ID left	ID of the left athlete. If the ID is more than 65535, the low are 2 bytes	
19-20	Bout ID	ID of the bout. If ID is more than 65535, the low are 2 bytes	
21	Flags 3	<p>Flags (by bytes):</p> <p>0 – sign of the priority</p> <p>1 – priority side (0 – right, 1 – left)</p>	
22	Red cards	<p>Low 4 bytes – right athlete,</p> <p>High 4 bytes – left athlete</p>	
23		Not used	
24-25	Order in phase	Number of the bout by order in the phase)e.g. number by order in the pool)	
26	Phase type	<p>00h – Poule level 1</p> <p>01h – Poule level 2</p> <p>...</p> <p>0Eh – PreTablo</p> <p>0Fh – Tablo</p>	
27	Phase level	<p>In the pools - 0</p> <p>In preTablo и tablo</p> <p>01h – T1</p> <p>02h – T2</p> <p>04h – T4</p>	

		08h – T8 10h – T16 20h – T32 40h – T64 80h – T128 00h – T256 0Ch – T512 18h – T1024 72h – T2048 60h – T4096	
28	Competition code	Code weapon type: 0h - EIM – men individual epee 1h - EIW – women individual epee 2h - ETM – men teams epee 3h - ETW – women teams epee 4h - FIM – men individual foil 5h - FIW – women individual foil 6h - FTM – men teams foil 7h - FTW – women teams foil 8h - SIM – men individual sabre 9h - SIW – women individual sabre Ah - STM – men teams sabre Bh - STW – women teams sabre Ch - MIX – mix team.	
29-30	Event ID	In case if the ID of competitions is more than 65535, the low are 2 bytes	
31	Protocol and sport Code		0Ah

INFO (additional information)

Additional information contains the data about the names of the participants The given command adds the command with the most important information and does not have sense without it. It makes sense to use INFO command with the additional information in coordination with a device interface which cannot output names with more than 10 symbols as far as a rule the full name of the athlete is longer. It is recommended to use commands with the extended information for transferring.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	INFO	02h
2	Command	INFO – дополнительная информация	02h
3	PisteCode	Piste code in number format	01h-40h
4	Not used		
5-7	nation right		RUS
8-10	nation right		FRA
11 - 20	Name right	Name of the right participant/team. If the byte is equal to zero, it means that its name cannot be fully placed	IVANOV Sidor RUSSIA
21-30	Name left	Name of the right participant/team. If the 30 byte is	LIMON Jua FRANCE

		equal to zero it means that its name is not fully placed	
31	Protocol and sport Code		0Ah

INFO (extended information)

Extended information contains detailed information about the participant and supports the transfer of the long length names (up to 300 symbols).

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	INFO	02h
2	Command	INFO – additional information	03h
3	PisteCode	Piste code in number format	01h-40h
4	Name type	Name type: 0 – name type of the right athlete/team 1 – name of the left athlete/team 2 – name of the right athlete in the current bout 3 – name of the left athlete in the current bout	0 1 2 3
	ID of the athlete/team	In case if the ID of competitions is more than 65535, the low are 2 bytes	
5-9	Nation	Country/club code of the participants	RUS MOS-4
10 - 29	Name	Name of the right participant/team. If the 30 byte is equal to zero it means that its name is not fully placed	
30	Number and amount of the packages	0 – the name is fit in one current package. High 4 bytes – number of packages Low 4 bytes – number of the current package ²	0h 21h (2 пакета, текущий первый) 22h (2 пакета, текущий - второй)
31	Protocol and sport Code		0Ah

INFO (Request to receive the name of the athlete)

To request extended information about the participant

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	INFO	02h
2	Command	INFO – additional information	04h
3		Nor used	
4	Name type	Name type: 0 – name of the right athlete/team 1 – name of the left athlete/team	0 1 2 3

² Thus, value 0 (one current package) is equal to 11h (number of packages – one and number of the current package – one)

		2 – name of the right team member in the current bout 3 – name of the left team member in the current bout	
	ID of the athlete/team	In case if the ID of competitions is more than 65535, the low are 2 bytes	
5-30		Not used	
31	Protocol and sport Code		0Ah

DISP

Group of the commands is used to transfer information about the bout. It has four commands:

- General information – all the important information about the bout (ID of the bout and participants, competitions stage, e.t.c),
- Additional information – last names of the participants
- Extended information – information by one last name/team on the left or right.
- Request on receiving the information about the bout – is used if it is necessary to get full information about the actual bout or about all the bouts of the competition stage.

DISP (general information)

This command sets all the important information about the bout (ID of the bout and participants, competition stage e.t.c). Later Master when forming INFO commands uses this information.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	DISP	03h
2	Command	DISP – general information	01h
3	PisteCode	Piste code in number format	01h-40h
4		Not used	
5	Time of the beginning of the bout – hours		
6	Time of the beginning of the bout - minutes		
7-9		Not used	
10	State	State of the bout	
11		Not used	
12	Score right		
13	Score left		
14		Not used	
15-16	ID right	ID of the right athlete. If ID is more than 65535, the low are 2 bytes	
17-18	ID left	ID of the left athlete. If ID is more than 65535, the low are 2 bytes	
19-20	Bout ID	ID of the bout. If ID is more than 65535, the low are 2 bytes	
21	Winner of the bout	Flags	

		<p>0 – means that the winner is not decided. 1 – means that the right athlete is the winner, otherwise the winner is the left one. 2 3 4 5 6 7</p>	
22-23	Total number of the bouts	Total number of the bouts in the phase (e.g. the number of the bouts in the pool)	
24-25	Order in phase	Number of the bout by number in the phase (e.g. number by order in the pool).	
26	Phase type	00h – Poule level 1 01h – Poule level 2 ... 0Eh – PreTablo 0Fh – Tablo	
27	Phase level	В пульках - 0 В preTablo и tablo 01h – T1 02h – T2 04h – T4 08h – T8 10h – T16 20h – T32 40h – T64 80h – T128 00h – T256 0Ch – T512 18h – T1024 72h – T2048 60h – T4096	
28	Competition code	Код weapon type: 0h - EIM – men individual epee 1h - EIW – women individual epee 2h - ETM – men teams epee 3h - ETW – women teams epee 4h - FIM – men individual foil 5h - FIW – women individual foil 6h - FTM – men teams foil 7h - FTW – women teams foil 8h - SIM – men individual sabre 9h - SIW – women individual sabre Ah - STM – men teams sabre Bh - STW – women teams sabre Ch - MIX – mix team.	
29-30	Event ID	In case if ID of the competitions is more than 65535, the low are 2 bytes	
31	Protocol and sport		0Ah

	Code		
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DISP (additional information)

The present command sets additional information about the participants of the bout. Names of the participants cannot fit in 10 symbols that is why it is recommended to use the command with the extended information about the participants of the bout.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	DISP	03h
2	Command	DISP – additional information	02h
3	PisteCode	Piste code in number format	01h-40h
4	Not used		
5-7	nation right		RUS
8-10	nation right		FRA
11 - 20	Name right	Name of the right participant/team. If the 20 byte is equal to zero it means that its name is not fully placed	IVANOV Sidor RUSSIA
21-30	Name left	Name of the right participant/team. If the 30 byte is equal to zero it means that its name is not fully placed	LIMON Jua FRANCE
31	Protocol and sport Code		0Ah

DISP (extended information)

Sets the detailed information about the participants of the bout.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	DISP	02h
2	Command	DISP – extended information	03h
3	PisteCode	Piste code in number format	01h-40h
4	Name type	Тип имени: 0 – name of the right athlete/team 1 – name of the left athlete/team 2 – name of the right team member in the current bout 3 – name of the left team member in the current bout	0 1 2 3
	ID спортсмена/команды	If the athlete's ID is more than 65535, the low are 2 bytes	
5-9	Nation	Country/club code of the participant	RUS MOS-4
10 - 29	Name	Name of the right participant/team. If the 30 byte is equal to zero it means that its name is not fully placed	
30	Номер и количество пакетов	0 – the name is fit in one current package. High 4 bytes – number of packages Low 4 bytes – number of the	0h 21h (2 пакета, текущий первый) 22p (2 пакета, текущий - второй)

		current package ³	
31	Protocol and sport Code		0Ah

DISP (request to receive information about the bout(s))

By this command the node requests the information about the certain bout. For instance, Clients can use this command in order to get data about one or all the bouts of one pool.

In order to get information about one bout, the competition stage and order number of the bout phase is mentioned.

In order to get the information about all the bouts of the competition phase, the competition phase is mentioned and the order number of the bout in the phase is set equal to zero. Having received such a command, the node-receiver starts to send DISP commands in response, containing data about all the bouts of the phase.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	DISP	03h
2	Command	DISP – request on receiving information about the bout	04h
3-23		Not used	
24-25	Order in phase	Number of the bout by order in the phase (e.g. number by order in the pool) or 0 if all the bouts of the competition phase are needed.	
26	Phase type	00h – Poule level 1 01h – Poule level 2 ... 0Eh – PreTablo 0Fh – Tablo	
27	Phase level	In the pools - 0 In preTablo и tablo 01h – T1 02h – T2 04h – T4 08h – T8 10h – T16 20h – T32 40h – T64 80h – T128 00h – T256 0Ch – T512 18h – T1024 72h – T2048 60h – T4096	
28	Competition code	Код weapon type: 0h - EIM – men individual epee 1h - EIW – women individual epee 2h - ETM – men teams epee	

³ Thus, value 0 (one current package) is equal to 11h (number of packages – one and number of the current package – one)

		3h - ETW – women teams epee 4h - FIM – men individual foil 5h - FIW – women individual foil 6h - FTM – men teams foil 7h - FTW – women teams foil 8h - SIM – men individual sabre 9h - SIW – women individual sabre Ah - STM – men teams sabre Bh - STW – women teams sabre Ch - MIX – mix team.	
29-30	Event ID	In case if ID of the competitions is more than 65535, the low are 2 bytes	
31	Protocol and sport Code		0Ah

BOUTSTOP

To cancel the earlier sent DISP command. E.g. if the bout is moved to another piste.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	BOUTSTOP	04h
2	PisteCode	Piste code in number format	01h-40h
3-30		Not used	00h
31	Protocol and sport Code		0Ah

TEAM

To transfer the list of the team which will now be fencing on its piste. In the given command only ID of the team members and order of their appearance on the piste are transferred. It is necessary to get all other information with the use of INFO group commands.

E.g., the Client having received INFO command (important information) has defined that the new teams are appearing on the piste. With the use of GETTEAM Client requests the list of the teams and gets them with TEAM commands. Later, with the use of INFO command (request on getting the athlete's name) Client receives the full information about the athlete.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	TEAM	05h
2	PisteCode	Piste code in number format	01h-40h
3	Side	0 – right 1 - left	00-01h
4-5	ID Fencer 1	If the athlete's ID is more than	

		65535, the low are 2 bytes	
6-7	ID Fencer 2	If the athlete's ID is more than 65535, the low are 2 bytes	
8-9	ID Fencer 3	If the athlete's ID is more than 65535, the low are 2 bytes	
10-11	ID Fencer R	If the athlete's ID is more than 65535, the low are 2 bytes	
12	Fencer in round 1		01h-04h
13	Fencer in round 2		01h-04h
14	Fencer in round 3		01h-04h
15	Fencer in round 4		01h-04h
16	Fencer in round 5		01h-04h
17	Fencer in round 6		01h-04h
18	Fencer in round 7		01h-04h
19	Fencer in round 8		01h-04h
20	Fencer in round 9		01h-04h
21-24	Unique team code		
25-30		Not used	
31	Protocol and sport Code		0Ah

GETTEAM

To request the list of the team at one of the pistes.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	GETTEAM	11h
2	PisteCode	Piste code in number format	01h-40h
3	Side	0 – right 1 - left	00-01h
4-30		Not used	
31	Protocol and sport Code		0Ah

REPLACE

To inform Manager that there is a replacement in one of the teams in team event.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	REPLACE	06h
2	PisteCode	Piste code in number format	01h-40h
3	Side	0 – right 1 - left	00h-01h
4	Номер заменяемого спортсмена		01h-03h
5-30		Not used	
31	Protocol and sport Code		0Ah

NAK

To inform Master that the sent result of the bout is incorrect

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	NAK	07h
2-30		Not used	
31	Protocol and sport Code		0Ah

ACK

To inform Master that the sent result of the bout is correct.

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	ACK	08h
2-30		Not used	
31	Protocol and sport Code		0Ah

NEXT

To inform Manager that the referee on the piste is asking to send the next bout.

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	NEXT	0Ah
2	PisteCode	Piste code in number format	01h-40h
3-30		Not used	
31	Protocol and sport Code		0Ah

PREV

To inform Manager, that the referee on the piste is asking to send previous bout.

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	PREV	09h
2	PisteCode	Piste code in number format	01h-40h
3-30		Not used	
31	Protocol and sport Code		0Ah

UPDATED

To inform all the clients that XML file with the current state of the competitions is updated.

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	UPDATED	0Bh
3-27		Not used	
28	Competition code	Код weapon type: 0h - EIM – men individual epee 1h - EIW – women individual epee 2h - ETM – men teams epee 3h - ETW – women teams epee 4h - FIM – men individual foil 5h - FIW – women individual foil 6h - FTM – men teams foil 7h - FTW – women teams foil 8h - SIM – men individual sabre 9h - SIW – women individual sabre Ah - STM – men teams sabre Bh - STW – women teams sabre Ch - MIX – mix team.	
29-30	Event ID	In case if ID of the competitions is more than 65535, the low are 2 bytes	
31	Protocol and sport Code		0Ah

STANDBY

Gives the command to move to 'sleeping mode'.

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	STANDBY	0Ch
2	PisteCode	Piste code in number format	01h-40h
3-30		Not used	
31	Protocol and sport Code		0Ah

BROKEN

Informs that the connection with the piste is lost.

Byte #	Fieldname	Description, remarks, examles	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	BROKEN	0Dh
2	PisteCode	Piste code in number format	01h-40h
3-30		Not used	
31	Protocol and sport Code		0Ah

MSG

MSG (title)

By using this command the node informs about the beginning of messages transmission (text, image or media file) and its parameters

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	MSG	0Eh
2	Command	MSG - title	01h
3	PisteCode	Piste code in number format	01h-40h
4	Type	Type of the message: 00h – short text (не более 20 символов) 01h - text 02h – image 03h – mediafile	
5-8	Count of the packets	Number of packages (long whole number – 4 bytes) For short text is equal to 0	
9	Message code	Message code is used to identify the packages with data in case of simultaneous sending of several messages.	
10-30	Text	Text for messages of short text type or private information for the other types of messages (e.g. name of the file)	
31	Protocol and sport Code		0Ah

MSG (data)

Data package

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	MSG	0Eh
2	Command	MSG - data	02h
3	PisteCode	Piste code in number format	01h-40h
4	Message Code	Message code is used to identify the packages with data in case of simultaneous sending of several messages.	
5-8	Number of the packet	Order number of the package (long whole number – 4 bytes)	
9-31	Data	Data	
31	Protocol and sport Code		0Ah

MSG (request to repeat the message)

By using this command the node informs about the beginning of sending the message (text, image or media file) and its parameters.

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	MSG	0Eh
2	Command	MSG – request to repeat the message	03h
3	PisteCode	Piste code in number format	01h-40h
4	Type	Type of the message: 00h – short text (not more than 20 symbols) 01h - text 02h – image 03h – mediafile	
5-8	Number of the packet	Number of the package which is necessary to repeat. If 0, the repetition of the whole message is requested (long whole number – 4 bytes)	
9-30		Not used	
31	Protocol and sport Code		0Ah

STOP

To inform that the node is disconnecting and does not wait information any more

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	STOP	0Fh
2-30		Not used	
31	Protocol and sport Code		0Ah

PING

To request the node – if it is in the network or not. Must be implemented in any node

Byte #	Fieldname	Description, remarks, examples	Values (hex)
0	Synhro	Synchronization byte	AAh
1	Command group	PING	10h
2-30		Not used	
31	Protocol and sport Code		0Ah

The use of Protocol USNP 1.0 in RS-485 interface

Any Master must send via RS-485 interface commands consequently in commands cycle:

- In individual events:
 - INFO(important information),
 - INFO(extended information about the right participant),
 - INFO(extended information about the left participant),
 - INFO(extended information about the right participant)⁴,
 - INFO(extended information about the left participant)⁵;
- In team events:
 - INFO(important information),
 - INFO(extended information about the right team),
 - INFO(extended information about the left team),
 - INFO(extended information about the right team member),
 - INFO(extended information about the left team member),

In case if any additional device needs detailed information it must have an option to connect to the competition network and get the information using Ethernet network.

⁴ Commands are repeated

⁵ Commands are repeated

Использование Protocol USNP 1.0 в сети Ethernet

Any node of Information System of Fencing Competitions must support commands of USNP 1.0.protocol. Commands in Ethernet network are sent by UDP protocol.

The order of the use of IP addresses and UDP ports and also the algorithms of processing of the commands fully coincide with Cyrano 2.0. protocol.

Any node received UDP package, analyzes first byte. If the first byte is equal to AAh and has 32 bytes, the given package contains the command of USNP 1.0.protocol.thus, the result of processing of the given command must also be directed with the use of the commands USNP 1.0. protocol.

If the first symbol is equal to '|',this is command of Cyrano 2.0. protocol. Thus, the result of the process of the given command also must be directed with the use of the commands of Cyrano 2.0.protocol.

The current approach allows to provide the simultaneous and continuous work of the nodes supporting Cyrano 2.0 and USNP 1.0 protocols in transition period.