GENERIC ACQUISITION PROTOCOL FOR WICLAX

OBJECT

This document specifies how an electronic timing device can communicate with the generic acquisition type in Wiclax.

This specification applies to Wiclax versions upper or equal to 8.2

1. SETUP THE ACQUISITION

- Open the acquisitions dialog – button *Acquisitions* in the *Results - Classifications* ribbon
- Create a new *Generic* acquisition
- Enter the IP address and port number to communicate with your device
- Click the connect button

2. LIVE PASSING DATA (TAG REPORT)

The device sends to the software some data corresponding to a live passing.

The format is the following, for a single passing:

```
01539¹;22-09-2011 02:41:30.620²;0A³;559⁴;⁵;0⁶\r
```

1: the chip/bib identifier – mandatory
2: date and time, format dd-mm-yyyy hh:mm:ss.ccc – mandatory

3: loop/antenna/device id – optional, blank if not set – used by the software to target different splits for passages coming from a single device, based on this information

4: lap sequential number for the device – optional, blank if not set

5: transponder battery level – optional, blank if not set – value in percent. For ex. "65" for 65%

6: rewind flag – 0 if live split, 1 if spit sent from a rewind request

3. HEARTBEAT

The device can send data on a regular basis to inform about its status and let know that the connection is still alive.

Data format: `*`

4. GET TIME

The software sends a command to know the device current time:

`CLOCK\r`

Device answer:

`CLOCK dd-MM-yyyy HH:mm:ss\r`

5. SET TIME

The software sends a command to initialize the device time:

`CLOCK dd-MM-yyyy HH:mm:ss\r`

The device answers an acknowledgement:

`CLOCKOK\r`

6. START/STOP READING

The software sends a command to start or stop the device reading mode:

`STARTREAD\r`

or

`STOPREAD\r`

If ok, the device answers this acknowledgement in both cases:

`READOK\r`

7. REWIND

The software sends a command to get a list of registered splits, corresponding to the requested period

`REWIND dd-MM-yyyy HH:mm:ss dd-MM-yyyy HH:mm:ss\r`

Where the 2 timestamps are the bounds for the splits to send.

The device sends all requested splits with the same format than for a live split. Only difference will be the rewind flag, to set to 1. The software may expect live splits sent while a rewind reception is in progress.

8. Gun start

The device sends a command to Wiclax to push a start time. This start time will be integrated in the active event as a race start (the race being prompted on screen in case of a multiple races event).

```
RACESTART HH:mm:ss,ccc\r
```

Where HH:mm:ss,ccc is the time to integrate. Example: "RACESTART 08:19:04,539\r"
Note: the hour is on a 24 format, i.e. 16 for 4 P.M. for instance.

9. ACQUISITION TYPE CONFIGURATION

To go further, you can also create your own acquisition type, with these advantages:
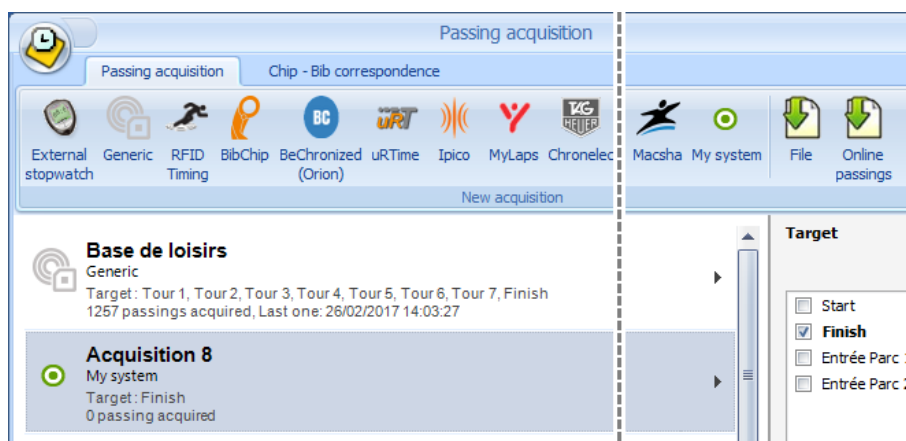
- The acquisition type will appear among all other official types from manufacturers, in Wiclax UI
- It will be possible to specify what the communication protocol looks like, to the extent that anything not specified will be handled like documented for the generic acquisition
- It will be easy to deploy on your workstations, or for your customers

A. HOW IT WORKS

1. Create a subdirectory */Acquisitions* in folder */Ressources* of Wiclax' installation path.
2. In this new folder, create a new xml file with the extension *.chip-acquisition.xml* – for example *mysystem.chip-acquisition.xml*
3. Edit the file with a configuration template like this one:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<Acquisition
 name="My system"
 defaultTCPPort="9854"
 inCommandEndChars="\r"
 passingDataMask="C,YYYYMMDDhhmmssccc,@"
 passingDataSeparator=","
 isWithHeartbeat="1"
 heartbeatValue="*"
 >
<icon>
    iVBORw0KGgoAAAANSUhEUgAAACAAAAAgCAYAAABzenr0AAAA9UlEQVRYw2P4//8/w0Bi
hlEHjDpg1AGjDsApgQaS5rMIAHEBEJ8H4v9o+DxUTgBdH1UcADQ4AIjfY7EYHYPUBFDVAUAD
E5AtmXs46f+5hxv/33h+AIxBbJAYmkMSqOIAoEEOMENz1or8f/T2wn9cACQHUoPkCAdqOOA+
zPLXnx/8JwTQHHGfIgcADTCA+ebI7YUolpStVob7FMRGDhmQWqRQMKDEAQ0wg2Dg68/36MEM
jx6QHAwgyTVQ7IDO7c5wg0GJDlcOAMnBAEjP8HHAQEbBwCZC9GyIrwygSTYcFAXRgBfFg6Iy
GrDqeLRFNOqAUQfQCwMAwakLnSce/WcAAAASUVORK5CYII=
 </icon>
</Acquisition>
```

4. Open the acquisitions form in Wiclax and you will see your custom acquisition type, like this:

The xml configuration for the acquisition type can be customized with the following options:

Note: more customization possibilities are to come.

Option	Values - remarks
name	Mandatory. Text used as a caption for the acquisition type in the UI, and also an id. value for it. In case the value is changed, the eventually existing acquisitions of this type will no longer be recognized as belonging to it – simply being generic acquisitions.
passingDataSeparator	Optional. Separator char or string used to interpret the fields of a passing data string sent by the device. If not set, then the mask for passing data will be interpreted with fixed length fields

passingDataMask	A string defining how passing data sent by the device must be interpreted by the acquisition. Mandatory fields to include are the chip id and the timestamp (can be a date and a time field if not a single value)
	
	List of mask characters and their meaning:
	`M : month` `C : chip id`
	`D : day` `L : passing #`
	`Y : year` `@ : source id/reader id`
	`h : hours`
	`m : minutes`
	`s : seconds`
	`c : thousands of seconds`
	`u : Unix timestamp (number of seconds since 1/1/1970)`
	
	Examples of passing data mask:
	`"C,YYYYMMDDhhmmssccc,@"`, with `passingDataSeparator=","`
	→ field chip id of variable length, followed by timestamp field and source id field of variable length
	
	`"CCCCCCCCCCC YYYYMMDDhhmmssccc @@"`, with `passingDataSeparator=""`
	→ chip id on exactly 11 chars, then timestamp starting at pos 13 and source id on chars 31 and 32

inCommandEndChars	Chars used to indicate the end of a command when sent by the device. Not used, the protocol must use either \r or \n as command separator.
outCommandEndChars	Optional - Chars used to indicate the end of a command when sent by Wiclax. Defaults to \r if not set.
commandsForInitialization	Optional – Set of text commands to send when initiating a connection with the device. The commands must include any end char if necessary.
getClockCommand	Optional – Command to send to query the clock value of the device.

setClockCommand	Optional – Command to send to initialize the device clock. The command includes a standard time mask, for ex. "Time = YYYY/M/D hh:mm:ss"
rewindCommand	Optional – Command to send to ask the device all the passings it has in memory
startReadCommand	Optional – Command to send to ask the device to enter in tag reading mode
stopReadCommand	Optional – Command to send to ask the device to exit from tag reading mode
\<icon\>\</icon\>	Xml child node of the document root, optional. Used to get a picture for the acquisition type on the UI. If not set, the picture will default to the generic acquisition logo. Value must be the base64 encoding of a png image file, size 32x32 pixels. (you can get this value from an online tool like this one at www.base64-image.de)

10.   TESTS

To validate which data goes in and out of an acquisition, remember that you can use the *Connection spy* feature available for the acquisitions.