

Re: Re: how to read AIS data from encapsulated NMEA VDO sentence

Source: <http://newsgroups.derkeiler.com/Archive/Rec/rec.boats.electronics/2006-07/msg00161.html>

- *From:* Kenny <ReplyToMessageToContact@xxxxxxx>
 - *Date:* Fri, 14 Jul 2006 00:15:19 GMT
-

"Paul" wrote:

<coderpunk@xxxxxxx> wrote in message
news:1150254823.702754.271150@xx

Paul wrote:

<nickw473@xxxxxxx> wrote in message
news:1149652247.992435.169280@xx

Actually, I re-read what I posted and it didn't really

make sense.

1. Start with the array of ascii characters
2. Convert to the 6 bit binary value.
3. Convert this byte array to a 6 bit bitstream.
4. Then just pull out the bits yuo want using the various

bit

operators. I tried to use a bit-field, but it didn't seem

to work in

Windows.

As I said, it all works until I get to character arrays

(call sign

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etc)

Here is a portion of the code i wrote to handle message
type 5 (I'm only
handling the "Ship Static and Voyage Related Data
" variant for now). My comments follow the code. Pay
attention to my
function H6StrToAsc, and how I manipulate the ascii.

I'll assume Paul's code is right :) He's skipping the
intermediate step

which may be where the confusion lies. There are several
layers of
things happening here.

0. Bits over the air: 9600bps GMSK data.
1. Demodulated bitstream, eg. 168 bits for a message 1.
2. Actual message content like Message ID, MMSI, Ship Name.
3. Serial output of bitstream using 6-bit encoding.

The data you see in the VDM sentence is a 6-bit encoded
representation

of the raw bitstream, first bit on the left, last bit on the
right (as

God intended things!).

To get the ship name you need to either skip ahead like Paul
did, or

convert the 6-bit back to its bitstream. Then you grab the
bits in the

name position and apply the m.1371 ASCII encoding rules to

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those bits.

BUT! That conversion is DIFFERENT from the 6-bit

encode/decode. That is

probably what was tripping you up.

.cp

I hereby give you a full money-back guarantee that my code is correct. At

least it seems to usually kind of work. The only trouble I've seen is that

I get a spurious (or incorrectly encoded?) rate-of-turn value sometimes,

positive or negative full-scale, if I recall correctly. I

haven't posted

that code, though.

As for the intermediate step of converting to a serial bitstream, there is

certainly nothing wrong with doing so, and it may indeed simplify some

operations. I found that with the lack of easy bit-field operators in

Visual Basic, it was just as simple to use the VDM message character string

directly. All the data is there, and I found no good reason to do an

additional conversion. If I were doing this in c, I probably would have gone

to the bitstream. And yes, the ASCII conversion is different than the 6-bit

encode/decode, which is why I directed the original poster to the H6StrToAsc

function in my code.

I was about to ask for help with my ROT problem, and in researching my

sources I just found a later spec than I had been using which shows that

+/-127 values have been taken over to indicate a

heading-derived ROT, rather

than a turn-indicator-derived ROT (which uses the values between -126 and

+126). Problem solved! Now, I guarantee double your money back!

Regards,

Re: Re: how to read AIS data from encapsulated NMEA VDO sentence

Paul

Dear

I am development any software of navigation in Peru for present data AIS in Chart electronic. I have the frame AIVDM decode, the ais SR162 only receive frame !AIVDM wich have info the MMSI, position, course, speed, others.. but i want get the name of ship, and more data related of voyage,... how program the receptor for get the name of ship ??? and how this encode, is equal to AIVDM (6 bits)..? Thanks..

Regards

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