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Author      Topic: Post 30003 socket output format/emulation/compatibility (Read 1947 times)

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**DaveReid**  
Hero Member  
  
Posts: 637

**Post 30003 socket output format/emulation/compatibility**  
« on: June 19, 2009, 08:59:58 am »

**Quote**



I've started a separate thread for this, although it's also relevant to the Future Developments thread given the stated aim of providing compatibility with the corresponding SBS/BaseStation socket output, so that applications designed for the latter will also work seamlessly with RadarBox.

Firstly, examples of the current output (spacing added to improve legibility):

### Code:

```
RadarBox:
MSG,3,0,0,4006B3,0,2009/06/19,06:15:05.984,2009/06/19,06:20:05.984,,18225,390,097,
MSG,1,0,0,4006B3,0,2009/06/19,06:15:17.421,2009/06/19,06:20:17.421,BAW4J,17750,381
MSG,3,0,0,4006B3,0,2009/06/19,06:22:06.140,2009/06/19,06:27:06.140,BAW4J,16000,365
MSG,3,0,0,4006B3,0,2009/06/19,06:22:22.406,2009/06/19,06:27:22.406,BAW4J,15875,360
MSG,3,0,0,4006B3,0,2009/06/19,06:22:32.171,2009/06/19,06:27:32.171,BAW4J,15800,357
MSG,3,0,0,4006B3,0,2009/06/19,06:22:46.031,2009/06/19,06:27:46.031,BAW4J,15700,357
MSG,3,0,0,4006B3,0,2009/06/19,06:24:31.562,2009/06/19,06:29:31.562,BAW4J,15000,321

SBS/BaseStation:
AIR,,64,522,4006B3,1509068,2009/06/19,07:12:42.179,2009/06/19,07:12:42.179
SEL,,64,522,4006B3,1509068,2009/06/19,07:12:42.945,2009/06/19,07:12:42.945,BAW4J
ID,,64,522,4006B3,1509068,2009/06/19,07:12:42.992,2009/06/19,07:12:42.992,BAW4J
MSG,1,64,522,4006B3,1509068,2009/06/19,07:17:51.870,2009/06/19,07:22:52.273,BAW4J,,,,,,,,,
MSG,5,64,522,4006B3,1509068,2009/06/19,07:17:51.870,2009/06/19,07:22:52.273,,16025,,,,,,,,,0,
MSG,4,64,522,4006B3,1509068,2009/06/19,07:17:52.089,2009/06/19,07:22:52.273,,,365.7,105.7,,
MSG,5,64,522,4006B3,1509068,2009/06/19,07:17:52.089,2009/06/19,07:22:52.273,,16025,,,,,,,,,0,
MSG,6,64,522,4006B3,1509068,2009/06/19,07:17:52.089,2009/06/19,07:22:52.089,,16000,,,,,424
MSG,3,64,522,4006B3,1509068,2009/06/19,07:17:52.089,2009/06/19,07:22:52.273,16025,51,365
```

And here's a somewhat edited/updated version of the documentation on the socket output format from the sticky on the Kinetic forum:

Four types of messages are currently output. They are:

#### NEW AIRCRAFT MESSAGE

This message is broadcast when the SBS-1 picks up a signal for an aircraft that it isn't currently tracking, i.e. it's when a new aircraft appears on the right-hand aircraft list.

It doesn't mean new aircraft in the sense of an aircraft that wasn't previously in the database.

- Field 1: AIR
- Field 2: [null]
- Field 3: System-generated SessionID
- Field 4: System-generated AircraftID
- Field 5: HexIdent
- Field 6: System-generated FlightID (N.B. not callsign)
- Field 7: Date message generated
- Field 8: Time message generated
- Field 9: Date message logged

« Last Edit: June 19, 2009, 09:59:29 am by DaveReid »


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**malc41**  
Beta Testers  
Hero Member  
☆☆☆☆  
Posts: 574



**tarbat**  
Hero Member  
☆☆☆☆  
Posts: 2047



 **Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #1 on: June 19, 2009, 09:10:21 am »

 Quote


Dave

Very interesting, thanks for the info.

This is what makes the forum what it is.

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15 Miles East of EGNJ

 **Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #2 on: June 19, 2009, 09:27:36 am »

 Quote

Dave, this is more or less the same information I provided to A@Airnav back in March 2008. Back then we ended up with a compromise of getting it working for Planeplotter and sbsplotter, just using MSG 3.

My recommendation at the time was as follows:

### Quote

We all know that the output on port 30003 is not complete. Yes, Transmission Type 3 messages look okay, although many messages output as type 3 are NOT really type 3 – this one for example (it has no position data):

```
MSG,3,0,0,C058B0,0,2008/03/06,10:39:13.669,2008/03/06,10:44:13.669,ACA869,32975,,,0,0,0,,0,0,0,0
```

Looking at port 30003 output, I think all transmission types are being output, but they'll all being marked as type 3. You'll need to output all transmission types if you're going to get SBS addons working:

- 1=IDMessage: Callsign
- 2=SurfacePositionMessage: Altitude, GroundSpeed, Track, Lat, Long
- 3=AirbornePositionMessage: Altitude, Lat, Long, Alert, Emergency, SPI
- 4=AirborneVelocityMessage: GroundSpeed, Track, VerticalRate
- 5=SurveillanceAltMessage: Altitude, Alert, SPI
- 6=SurveillanceIDMessage: Altitude, Squawk, Alert, Emergency, SPI
- 7=AirToAirMessage: Altitude

I'd suggest a release note that states that the framework is now in place to output on port 30003, and that Transmission Type 3 messages have been tested. Other Transmission Types should be developed over the next few weeks. Maybe ask users which addons are important to them, so they can be tested.

Its frustrating that over a year later, we're still not nearer to a fully compliant port 30003 output.

« Last Edit: June 19, 2009, 09:29:45 am by tarbat »

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Radarbox at Portmahomack, Ross-shire  
<http://www.tarbat.gofreeserve.com/>

**DaveReid**  
 Hero Member  
 ★★★★★  
 Posts: 637



**Re: Post 30003 socket output format/emulation/compatibility**

« Reply #3 on: June 19, 2009, 09:58:54 am »



Quote

**Quote from: tarbat on June 19, 2009, 09:27:36 am**

Its frustrating that over a year later, we're still not nearer to a fully compliant port 30003 output.

Quite so.

For example I understand that an add-on application like Squawkbox has to handle RadarBox and SBS socket outputs differently, because BaseStation outputs the squawk in a MSG 6 whereas RadarBox sticks it in a MSG 3.

It's also very misleading to output **all** the 1090ES/ELS parameters in **every** MSG 3, because the aircraft **never** sends, for example, groundspeed and altitude in the same transmission, ditto squawk and vertical rate, etc.

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**tarbat**  
Hero Member  
★★★★★  
Posts: 2047



**Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #4 on: June 19, 2009, 10:07:25 am »



Quote

**Quote from: DaveReid on June 19, 2009, 09:58:54 am**

For example I understand that an add-on application like Squawkbox has to handle RadarBox and SBS socket outputs differently, because BaseStation outputs the squawk in a MSG 6 whereas RadarBox sticks it in a MSG 3.

But Squawkbox is pretty useless on a 5-minute delayed output anyway (sorry Andy). And that's my overall point - Airnav need to understand what users want to use the port 30003 output for. Many of the addons for the SBS-1 rely on a real-time port 30003 output, and that's never going to be available in Radarbox.

For example, Dave, what do you want to use the port 30003 output for?

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Radarbox at Portmahomack, Ross-shire  
<http://www.tarbat.gofreeserve.com/>

**DaveReid**  
Hero Member  
★★★★★  
Posts: 637



**Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #5 on: June 19, 2009, 11:11:37 am »



Quote

**Quote from: tarbat on June 19, 2009, 10:07:25 am**

For example, Dave, what do you want to use the port 30003 output for?

The answer's still the same as yesterday :-)

[www.airnavsystems.com/forum/index.php?topic=2885.msg25845#msg25845](http://www.airnavsystems.com/forum/index.php?topic=2885.msg25845#msg25845)

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**tarbat**  
Hero Member  
★★★★★  
Posts: 2047



**Re: Post 30003 socket output format/emulation/compatibility**

« **Reply #6 on:** June 19, 2009, 11:24:52 am »



Quote

**Quote from: DaveReid on June 19, 2009, 11:11:37 am**

The answer's still the same as yesterday :-)

[www.airnavsystems.com/forum/index.php?topic=2885.msg25845#msg25845](http://www.airnavsystems.com/forum/index.php?topic=2885.msg25845#msg25845)

Can't you achieve that with the current port 30003 output from RB? All the data is there, isn't it?

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Radarbox at Portmahomack, Ross-shire  
<http://www.tarbat.gofreeserve.com/>

**DaveReid**  
Hero Member  
★★★★★  
Posts: 637



**Re: Post 30003 socket output format/emulation/compatibility**

« **Reply #7 on:** June 19, 2009, 11:41:14 am »



Quote

**Quote from: tarbat on June 19, 2009, 11:24:52 am**

Can't you achieve that with the current port 30003 output from RB? All the data is there, isn't it?

Yes, of course it is, if only I could be bothered to rewrite my capture application so that it expects the MSGs in RadarBox format rather than BaseStation format (GS/track in MSG 4, squawk in MSG 6, etc). But the point is that this shouldn't be necessary, the formats should be the same.

Incidentally I've never shared the view that the 5-minute delay renders the socket output useless. It's never been an issue with the LHR site and I've also been running an alerting application for OTTs for the last 3 years which reads the delayed output and simply uses DR to predict the aircraft's position in 5 minutes time (i.e. now). I'd say that on 99% of the occasions that my BlackBerry pings to tell me there's an interesting aircraft overhead, I look up and there it is.

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**OKC-Steve**

New Member



Posts: 37



**Re: Post 30003 socket output format/emulation/compatibility**

« **Reply #8 on:** June 19, 2009, 12:34:00 pm »



**Quote**

RB also has integers where SBS has floats. ground track and ground speed should be floats of 1 decimal point accuracy. I don't know about the current version, but the last version the booleans at the end were always false.

**Code:**

```
[0] MSG
[1] 3
[2] 0 (Session ID not used)
[3] 0 (Aircraft ID not used)
[4] ACID (Hex ID)
[5] 0 (FlightID not used)
[6] Date Detected (YYYY/MM/DD)
[7] Time Detected (HH:MM:SS.mmm)
[8] Date Sent (YYYY/MM/DD)
[9] Time Sent (HH:MM:SS.mmm)
[10] Callsign (String)
[11] Altitude (Integer)
[12] Groundspeed (Integer)
[13] Groundtrack (Integer)
[14] Lat (Float)
[15] Lon (Float)
[16] Vertical Rate (Integer)
[17] Squawk (octal Integer)
[18] Alert (Boolean) always false
```

« Last Edit: June 19, 2009, 12:42:26 pm by OKC-Steve »

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**DaveReid**  
Hero Member  
★★★★★  
Posts: 637



 **Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #9 on: June 19, 2009, 12:47:17 pm »

 Quote

### Quote from: OKC-Steve on June 19, 2009, 12:34:00 pm

RB also has integers where SBS has floats. ground track and ground speed should be floats of 1 decimal point accuracy.

And I though I was picky :-)

The E-W and N-S velocity components are only encoded at 1kt resolution, so I wouldn't put too much faith in those tenths of knots and degrees !

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**Andy Frost**  
Jr. Member  
★★★  
Posts: 96



 **Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #10 on: June 19, 2009, 07:36:08 pm »

 Quote

To reply to Tarbat, totally agree, a 5 minute delay makes SquawkBox fairly useless. I was led to believe that **live data** would be output by the new version *without positional information*. See reply to jgrloit on <http://www.airnavsystems.com/forum/index.php?topic=2139.15>. I can't see this addition in the "Official full list of suggestions/improvements" for version 3.0 so I guess it got missed.

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**jmhayes**  
Jr. Member  
★★★  
Posts: 56



 **Re: Post 30003 socket output format/emulation/compatibility**  
« Reply #11 on: June 19, 2009, 10:01:15 pm »

 Quote

### Quote from: OKC-Steve on June 19, 2009, 12:34:00 pm

I don't know about the current version, but the last version the booleans at the end were always false.

I haven't seen any change in this in v3.0 ...

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**jmhayes**  
Jr. Member  
☆☆☆  
Posts: 56



**Re: Post 30003 socket output format/emulation/compatibility**

« **Reply #12** on: June 19, 2009, 10:03:19 pm »



Quote

**Quote from: DaveReid on June 19, 2009, 11:41:14 am**

I've never shared the view that the 5-minute delay renders the socket output useless

I totally agree with Dave: the data is useful even if not in real-time.

I saw a message today that was interesting:

**Code:**

```
MSG,1,0,0,A6A114,0,2009/06/19,01:58:12.984,2009/06/19,02:03:13.000,VRD757,12100,
374,160,38.0032,-122.7191,-1920,,0,0,0,0
```

Note that the detected/sent times aren't exactly 5 minutes apart :D

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**jmhayes**  
Jr. Member  
☆☆☆  
Posts: 56



**Re: Post 30003 socket output format/emulation/compatibility**

« **Reply #13** on: June 20, 2009, 04:40:26 pm »



Quote

One thing to watch out for that I just noticed: under certain circumstances, you can get duplicate rows: I've only seen this a few times now, but certain aircraft seem to trigger it. And it's not every message: just some! I don't see anything else binding them together, so if that matters to you, watch out.

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**Harry**  
Jr. Member  
☆☆☆  
Posts: 93



**Re: Post 30003 socket output format/emulation/compatibility**

« **Reply #14** on: June 28, 2009, 12:57:58 pm »



Quote

I have been away for a few months from this forum and I cannot find the answer in all the messages with the release of Beta 3: is airnav going to do something about the socket output or not?

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