Explanations of the various status and information packets sent by FS3.

PFS3-1 > TIME-1 :PHT: uptime is 712/04:06:02. Time is Wed Oct 11 09:14:31 2017
PHT is the "Pacsat Housekeeping Task". This is the part of the software that performs most functions in the satellite. This packet provides the length of time PHT has been running and the time of day in the satellite. "uptime" is followed by a string indicating how long PHT has been running. The numbers are days/hours:minutes:seconds. In this case FS3 has been running continuously for 712 days plus. The time of days follows. The clock in FS3 is derived from the main processor and drifts enough the command stations have to update it about every week.

PFS3-1 > LSTAT-0 :I P:0x13A8 o:0 l:26062 f:26092, d:1 st:6 e:75
"LSTAT" is the loader status line. This indicates what mode the software loader is in along with some additional parameters. If LSTAT starts with an "I" the loader is idle, meaning there is no load in progress. An "A" indicates it is active – it is working on a load. Almost all the software in FS3 can be uploaded.
While a load is in progress users should refrain from transmitting to the satellite to allow the command stations to complete the load.

The "P", "o", "l" and "f" parameters show the addresses and indicators command stations use to determine how much progress has been made and in some cases what address to use for the next task to be uploaded. The values behind the "o", "l" and "f" parameters are addresses in decimal. "d" indicates the status of the digipeater. "1" = on, "0" = off. "st" shows the task number of the last loaded task. In this case it shows there are 6 tasks running. The "e" is a rudimentary memory error counter for the program memory. To get the actual error count requires additional data. This counter will continually count up because a single bit error in memory used by the code will get counted every time that part of the code is executed. The program memory is "washed" continually by reading each byte – which corrects the error – then writing it back to permanently correct it. It takes about 10 minutes to wash the entire program memory space.

PFS3-11 > PBLIST-0 :PB: Empty.
This is a message from the store and forward file system indicating what stations are currently using it. "Empty" means no one is using it. If a station access the system their callsign will be listed after the "PB". As in all pacsats using this code multiple stations can request files or directory updates and all will be accommodated in a round robin fashion, and all their callsigns will be listed.

PFS3-11 > N8MH-0 :OK N8MH
This message shows that N8MH has requested something from the file system, either a file or a directory update. The "OK" indicates the file system has received that request and will act on it. Some error messages will also show up there indicating things like the file doesn't exist.

PFS3-11 > PBLIST-0 :PB: N8MH\D

The “D” after the callsign indicates that station has requested a directory update. WiSP maintains a directory of files in the satellite by requesting a list of those files and some parameters about them automatically when it detects downlink packets. If there is no “D” after the callsign then a file download (broadcast) has been requested.

PFS3-11 > QST-1 :<BBS Broadcast>
This is a packet containing information from the file system, either directory updates or a part of a file. The words between the < > are inserted to avoid filling up the screen with potentially unprintable characters and strings of text in a message.

PCTRL-8 > PCTRL-8 :CTRL: mode=9 torq0 elog=1 alog=0
The “to” callsign usually indicates what software task has sent the packet. In this case it’s the attitude “control” task. The remaining paramters contain information about that task. “mode” shows which of the 9 modes is active. “9” indicates it is idle, not actively controlling attitude. “torq” indicates the status of the torq rods, “0” = off, “1” = on. “elog=1” shows that errors are being logged, a “0” would show that function is off. “alog=0” shows that attitude control activity information is not being logged. When the task is idle there is nothing to log.

PFS3-1 > TLMI-1 :<binary tlm>
This packet contains housekeeping telemetry in binary format. Those words are inserted by WiSP to avoid a string of unprintable characters cluttering up the screen.
Because there are more telemetry values than will fit in one AX.25 packet it is broken into three that are always sent sequentially.

PFS3-1 > TLMS-1 :C0:BD C1:00 C2:F1 C3:50 C4:F1 C5:03
This line from PHT shows the status of each of the 8 bit I/O ports on the processor. The data behind each address, for example “C0”, are in hex. Much of the hardware in the satellite is controlled by having the software write a 1 or 0 to a bit in one of these ports.

PFS3-1 > BCR-1 :BCR:bv=1180 bi=225 sens=1377 top=1180 low=0 t1=504 t2=1009 sv=73 si=9
This is a packet that was used initially after launch to provide a quick look at how the power system was functioning. The power system is called a Battery Charge Regulator or BCR (although it does much more than that). Each parameter shows the raw analog to digital counts in decimal for that parameter. At this point – after the full PHT software is running – they are not useful.

PFS3-11 > STATUS-0 :B: 8022402
This line from the file system shows the decimal number of bytes that have been sent from the file system since it was started. In this case 8,022,402. It is sent occasionally and shows up in the WiSP display.

PFS3-12 > BBSTAT-0 :Open ABCD:
This messages shows which of up to four uplinks are available for use. However FS3 has only one so the BCD uplinks will always show available. If A (the VHF uplink) is in use by someone the message will read “Open

BCD”. But note that the A goes away only when someone is actively uploading a file and that never takes very long. The message was originally put into the file system interface code for the early pacsats which had four uplink frequencies to help stations pick an available uplink. So this message for FS3 is not especially useful.

PFS3-1   > TLMC-1   :CL:0
This message indicates the status of the link between the PHT task and the control task. “0” = link is working, “1” = an error. This should never be a “1”.

KG5GJT-11 > APK003-48:¦f@@ãð:WD9EWK   :TNX for call. QSL?{40
This is a digipeated packet, sent by KG5GJT using "unproto" via PFS3-1.