

File: /tidi/flt_ticl/ticl/dotthis

055-4277 TIDI Command Staging Procedure

(Reference: 055-38860-TIDI Operational Proc.doc Section 5)

This file is intended to offer helpful hints, and problem resolutions, for the process of sending commands to the timed moc at apl. It is meant to be updated with the current commands about to be sent (see the 9999.xls spreadsheet) so that:

- a) It can be printed for a second person to inspect for errors. The mtConvert, ticlBuilder, and sendCM lines, and a copy of the latest contact schedule at <http://www.timed.jhuapl.edu/mdc/contacts.htm> are useful for this review.
- b) It can be "mored" to the screen to permit copy/paste to avoid typing mistakes.
- c) A record of ftp errors can be maintained at the end of the file.

Be oasis at the console,

```
cd /tidi/flt_ticl/ticl
newgrp tidi
tcsch
setenv MOC_NODE kimball.jhuapl.edu
setenv MOC_USER TIMED_APL
```

Daily Commands (update as needed, don't neglect to save before using as a copy/paste source!):

#the contact schedule also shows dovertime for the target date

>>

```
ticlBuilder -d 2011335 -s mbDrg_nc4Np15HwSM7.ticl
sendCM -e 2011335040000 -d 20:00:00 ../tcmd/mbDrg_nc4Np15HwSM7.tcmd
```

<<

Command Checklist:

Be sure of the following:

1. The ticlBuilder cmd must have the date the program is to run.
2. The sendCM cmd must have an enable DATE of the day before that.
3. The sendCM cmd must have an enable TIME that is NOT during, or even within an hour or so, of a contact; although the contact schedule may indicate no commanding will be allowed -- that could change and would likely result in an incomplete set of packets being uploaded to TIDI.
4. The date strings must have 13 characters, duration must be hh:mm:ss
5. The ticlBuilder cmd operates on a .ticl file and must be run before sendCM to create a .tcmd file in ../tcmd. Be sure filename spelling is consistent.
6. The .purpose line, i.e. the first line of the .ticl file, must only contain 132 characters in total - any more cahacters and the package program will FAIL with NO errors, i.e. No commands will be sent. For other .ticl specs, see TIDI doc 055-3564F-TIDI Specification

If ticlBuilder fails for a program previously compiled successfully, look at the permissions on program.list & ../tcmd/program.tcmd -- the error message is not useful. Some users have a umask that denies write permission to the group.

Before issuing the sendCM commands, open a second window in ~timed: it should contain no *.ARR or .CRR files. If it does, run updMsgDrv.sh to update the command message log file and clear the directory.

NOTE: if sendCM says "0 files transmitted" and gives a success message, look in the .ticl source code for too long a comment line: an oversight in package does not issue an error msg if it can't find
.type = immediate or
.type = stored.

When sendCM is finished, it reports the number of files sent -- the number of ~timed/*.ARR files should be the same. Run ~timed/finderrs.sh: this examines each .ARR to see if it has a non-zero error code and reports the number of files. The reason to know about errors is because updMsgDrv.sh cannot replace a message in the message log file - but we can often resendCM and get a non-error receipt.

If no errors are found and the count matches, run updMsgDrv.sh. This puts the contents of the ARR files into the command message logfile and deletes the ARRs. Run

```
reportMsg -n enable_time -a
reportMsg -n enable_time -A
```

to confirm that there is a command receipt for every .cmf file sent, and that none had errors. If there are cmds to be sent after this set, the switch -N <enable_time after this one but before the next> will limit what goes to the screen. See reportMsg -h.

Problems And Recovery Techniques:

Occasionally, ARRs are received that indicate an error (often there will be a delay in receiving these that is longer than for the other files (10-mar-03: took 25 minutes)). In this case, run resendCM msgnum.

Occasionally, an ARR is never received. In this case it is necessary to call the MOC to determine if they have the corresponding .pgp (or .cmf) file. If they do not, the resendCM command can be used. If they do, and it cannot be determined whether or not there was an error, ask the MOC to clear the staging queue. This is because the MOC adorns the filenames, resending a .cmf will not cause an overwrite, and the extra file will cause the upload to TIDI to be rejected. Note that clearing the queue clears all files, even if there were successful ARR's, so sendCM will need to be rerun for any cmd sets that do not yet have a .CRR. (have not been uploaded to TIDI).

Before clearing the queue, find how many msgs are in it (ask MOC TC, or `ls /tidi/flt_ticl/cmf/sent |wc -w`. After it is cleared, check to see that the entire queue was flushed: run `updMsgLog.sh`
`ReportMsg -n enable_time -r`
`ReportMsg -n enable_time -R`

-- the number of failed msgs (-R) should be the same as the number in the queue or cmf/sent.

useful cmd when creating new ticl program, to provide a unique program number:

```
grep 'program [0-9]\{5,5\}' *.ticl | sort -k 2
```

useful cmd to see err codes of receipt files in ~timed:

```
find . ! -name . -prune -size -100c -exec cat {} \;
```

sendCM error history:

date sent	seq range	seq:err,...
15-Oct-2002	5267 - 5298	5279:3
16-Oct-2002	5299 - 5327	5314,5316,5317,5318,5323,5324,5325,5327:3 resend 5314 failed again
23-Oct-2002	5328 - 5359	
	5360 - 5388	
30-Oct-2002	5389 - 5420	
	5421 - 5450	
11-Nov-2002	5545 - 5574	5566:3
25-Nov-2002	5700 - 5729	5700:3
16-Dec-2002		5913:3
24-Feb-2003	297 - 398	303:? no ARR
05-Mar-2003	391 - 452	402,443:3
	453 - 518	494:3
10-Mar-2003	583 - 612	596:3 (took 25 minutes!)
24-Mar-2003	741 - 911	843,886,897:3
19-May-2003	1134 - 1165	all but last 4: ftp timeout
06-Jun-2003	1320 - 1349	1331:3
28-Aug-2003	1977 - 2009	1982:? no ARR, MOC had no .cmf
17-Sep-2003	2136 - 2293	2288-2293: ssh on PC died, failed to send these -> flush queue, send all again
06-Oct-2003	2641 - 2672	2654:? no ARR: ftp timeout
07-Nov-2003	2858 - 2888	connection time out for all:

could not ftp from cmd line. contacted MOC: Mike Packard: ended up sending a tar ball to him with all the .cmf files. Yes, they can take unencrypted files. Seems sendCM can also send unencrypted, by setting the environ variable CMF_ENCRYPT= something other than TRUE. For the second set of commands to send today, needed to comment out the

```
$ftpCmdFile > /dev/null
line so didn't have to wait for the timeouts.
```

Could also have put the tarball in ~timed (with chown timed:file, and they would get it with ftp.

Seems the trouble may have been at our end: nsswitch.conf shows

```
hosts: dns [TRYAGAIN=continue NOTFOUND=continue] files
```

which seems to say if can't resolve hostname to an IP, get it from a file: /etc/hosts had bad ip addresses for all jhuapl hosts we access. This has been corrected.

```
25-Nov-2003 3139 - 3168 3166:3
11-Dec-2003 3325 - 3347 3270:3
15-Dec-2003 3358 - 3390 3386:3
15-Dec-2003 3391 - 3420 3407:3
```

```
09-Jan-2004 3643,3661,3663,3665:3
13-Jan-2004 3677:3
20-Jan-2004 3770:3
27-Jan-2004 3875:3
16-Feb-2004 4169:3 (note required staging queue flush and resend of all)
07-Jul-2004 1124,1142,1143:3
12-Jul-2004 1178,1225:3
10-Aug-2004 1439: 2,3
```

(...there's been more, but I was lax in recording them here...)

```
01-Nov-2006 3563: 2,3
```

(...there's been more, but I was lax in recording them here...)

```
11-Oct-2007 6278: 2,3
```

```
-----
31-Jan-2008
TI006996.ARR line: 2 3
TI007007.ARR line: 2 3
TI007018.ARR line: 2 3
And mutiple missing ARR's
cmds TI006991 to TI007022 only 10 ARR's with 3 of them with errors
```

```
$ finderrs.sh
```

is this the right number of receipt files?:

```
32
```

```
$ ls
TI006991.ARR TI006996.ARR TI007001.ARR TI007006.ARR TI007011.ARR TI007016.ARR TI007021.ARR updFailed
TI006992.ARR TI006997.ARR TI007002.ARR TI007007.ARR TI007012.ARR TI007017.ARR TI007022.ARR
TI006993.ARR TI006998.ARR TI007003.ARR TI007008.ARR TI007013.ARR TI007018.ARR finderrs.sh
TI006994.ARR TI006999.ARR TI007004.ARR TI007009.ARR TI007014.ARR TI007019.ARR message.list
TI006995.ARR TI007000.ARR TI007005.ARR TI007010.ARR TI007015.ARR TI007020.ARR message.new
```

```
$ updMsgDrv.sh
```

```
ERROR: Attempt to change 2008031175833 to 2008031181813 and 0 to 0 in log entry 6991
ERROR: Attempt to change 2008031175844 to 2008031181819 and 0 to 0 in log entry 6992
ERROR: Attempt to change 2008031175842 to 2008031181830 and 0 to 0 in log entry 6993
ERROR: Attempt to change 2008031175849 to 2008031181835 and 0 to 0 in log entry 6994
ERROR: Attempt to change 2008031175854 to 2008031181847 and 0 to 0 in log entry 6995
sequence 6996 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI006996.ARR
ERROR: Attempt to change 2008031175907 to 2008031182334 and 0 to 0 in log entry 6997
ERROR: Attempt to change 2008031175916 to 2008031181901 and 0 to 0 in log entry 6998
ERROR: Attempt to change 2008031175919 to 2008031181925 and 0 to 0 in log entry 6999
ERROR: Attempt to change 2008031175917 to 2008031181949 and 0 to 0 in log entry 7000
ERROR: Attempt to change 2008031175915 to 2008031181957 and 0 to 0 in log entry 7001
ERROR: Attempt to change 2008031175933 to 2008031182004 and 0 to 0 in log entry 7002
ERROR: Attempt to change 2008031175928 to 2008031182012 and 0 to 0 in log entry 7003
ERROR: Attempt to change 2008031175929 to 2008031182017 and 0 to 0 in log entry 7004
ERROR: Attempt to change 2008031175932 to 2008031182023 and 0 to 0 in log entry 7005
ERROR: Attempt to change 2008031175931 to 2008031182037 and 0 to 0 in log entry 7006
sequence 7007 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007007.ARR
ERROR: Attempt to change 2008031175941 to 2008031182130 and 0 to 0 in log entry 7008
ERROR: Attempt to change 2008031175940 to 2008031182135 and 0 to 0 in log entry 7009
ERROR: Attempt to change 2008031175951 to 2008031182143 and 0 to 0 in log entry 7010
ERROR: Attempt to change 2008031175949 to 2008031182149 and 0 to 0 in log entry 7011
ERROR: Attempt to change 2008031175952 to 2008031182410 and 0 to 0 in log entry 7012
ERROR: Attempt to change 2008031175953 to 2008031182200 and 0 to 0 in log entry 7013
sequence 7014 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007014.ARR
```

```
sequence 7015 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007015.ARR
sequence 7016 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007016.ARR
sequence 7017 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007017.ARR
sequence 7018 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007018.ARR
sequence 7019 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007019.ARR
sequence 7020 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007020.ARR
sequence 7021 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007021.ARR
sequence 7022 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007022.ARR
/tidi/tidi_software/bin/updMsgDrv.sh successfully updated 11 entries, failed with 21
```

```
$ reportMsg -n 200803000000 -c
```

```
calTime2tmTime-E-undecipherable month in --2006:00:00:00
```

Seq Count	Enable Time	Auth Status	Time	Recpt Status	Time	Frag	TICL file
0000006991	2008035040000	000	2008031175833	000		000	mbDbb_ncNp15Hw.ticl
0000006992	2008035040000	000	2008031175844	000		001	mbDbb_ncNp15Hw.ticl
0000006993	2008035040000	000	2008031175842	000		002	mbDbb_ncNp15Hw.ticl
0000006994	2008035040000	000	2008031175849	000		003	mbDbb_ncNp15Hw.ticl
0000006995	2008035040000	000	2008031175854	000		004	mbDbb_ncNp15Hw.ticl
0000006996	2008035040000	000	2008031182115	000		005	mbDbb_ncNp15Hw.ticl
0000006997	2008035040000	000	2008031175907	000		006	mbDbb_ncNp15Hw.ticl
0000006998	2008035040000	000	2008031175916	000		007	mbDbb_ncNp15Hw.ticl
0000006999	2008035040000	000	2008031175919	000		008	mbDbb_ncNp15Hw.ticl
0000007000	2008035040000	000	2008031175917	000		009	mbDbb_ncNp15Hw.ticl
0000007001	2008035040000	000	2008031175915	000		010	mbDbb_ncNp15Hw.ticl
0000007002	2008035040000	000	2008031175933	000		011	mbDbb_ncNp15Hw.ticl
0000007003	2008035040000	000	2008031175928	000		012	mbDbb_ncNp15Hw.ticl
0000007004	2008035040000	000	2008031175929	000		013	mbDbb_ncNp15Hw.ticl
0000007005	2008035040000	000	2008031175932	000		014	mbDbb_ncNp15Hw.ticl
0000007006	2008035040000	000	2008031175931	000		015	mbDbb_ncNp15Hw.ticl
0000007007	2008035040000	000	2008031182042	000		016	mbDbb_ncNp15Hw.ticl
0000007008	2008035040000	000	2008031175941	000		017	mbDbb_ncNp15Hw.ticl
0000007009	2008035040000	000	2008031175940	000		018	mbDbb_ncNp15Hw.ticl
0000007010	2008035040000	000	2008031175951	000		019	mbDbb_ncNp15Hw.ticl
0000007011	2008035040000	000	2008031175949	000		020	mbDbb_ncNp15Hw.ticl
0000007012	2008035040000	000	2008031175952	000		021	mbDbb_ncNp15Hw.ticl
0000007013	2008035040000	000	2008031175953	000		022	mbDbb_ncNp15Hw.ticl
0000007014	2008035040000	000	2008031180001	000		023	mbDbb_ncNp15Hw.ticl
0000007015	2008035040000	000	2008031180003	000		024	mbDbb_ncNp15Hw.ticl
0000007016	2008035040000	000	2008031180002	000		025	mbDbb_ncNp15Hw.ticl
0000007017	2008035040000	000	2008031180009	000		026	mbDbb_ncNp15Hw.ticl
0000007018	2008035040000	000	2008031182218	000		027	mbDbb_ncNp15Hw.ticl
0000007019	2008035040000	000	2008031180014	000		028	mbDbb_ncNp15Hw.ticl
0000007020	2008035040000	000	2008031180022	000		029	mbDbb_ncNp15Hw.ticl
0000007021	2008035040000	000	2008031180020	000		030	mbDbb_ncNp15Hw.ticl
0000007022	2008035040000	000	2008031180027	000		031	mbDbb_ncNp15Hw.ticl

```
Total 7023 entries processed, 32 matched criteria
```

```
-----
31-Jan-2008
```

```
TI007028.ARR line: 2 3
```

```
-----
21-Apr-2008 <-- FOUND EXPLANATION! This was done at ~2pm when
updMsgDrv.sh is run automatically, so that the first four .ARR's were
already 'updated' so that when I did it by hand, it thought I was
trying to replace the previous versions (this wouldn't have happened
if we didn't have the updMsgDrv.sh in a cron job... I'm going to take
it out. -mlc
```

```
$ finderrs.sh
```

```
is this the right number of receipt files?:
```

```
33
$ ls
TI007765.ARR TI007771.ARR TI007777.ARR TI007783.ARR TI007789.ARR TI007795.ARR updFailed
TI007766.ARR TI007772.ARR TI007778.ARR TI007784.ARR TI007790.ARR TI007796.ARR
TI007767.ARR TI007773.ARR TI007779.ARR TI007785.ARR TI007791.ARR TI007797.ARR
TI007768.ARR TI007774.ARR TI007780.ARR TI007786.ARR TI007792.ARR finderrs.sh
TI007769.ARR TI007775.ARR TI007781.ARR TI007787.ARR TI007793.ARR message.list
TI007770.ARR TI007776.ARR TI007782.ARR TI007788.ARR TI007794.ARR message.new
```

```
$ updMsgDrv.sh
```

```
ERROR: Attempt to change 2008112175940 to 2008112180432 and 0 to 0 in log entry 7765
ERROR: Attempt to change 2008112175945 to 2008112180443 and 0 to 0 in log entry 7766
ERROR: Attempt to change 2008112175950 to 2008112180452 and 0 to 0 in log entry 7767
ERROR: Attempt to change 2008112175957 to 2008112180501 and 0 to 0 in log entry 7768
sequence 7769 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007769.ARR
sequence 7770 updated in /tidi/flt_tic1/cmdMsgLogFile.log from /homes/timed/TI007770.ARR
```

sequence 7771 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007771.ARR
sequence 7772 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007772.ARR
sequence 7773 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007773.ARR
sequence 7774 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007774.ARR
sequence 7775 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007775.ARR
sequence 7776 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007776.ARR
sequence 7777 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007777.ARR
sequence 7778 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007778.ARR
sequence 7779 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007779.ARR
sequence 7780 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007780.ARR
sequence 7781 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007781.ARR
sequence 7782 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007782.ARR
sequence 7783 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007783.ARR
sequence 7784 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007784.ARR
sequence 7785 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007785.ARR
sequence 7786 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007786.ARR
sequence 7787 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007787.ARR
sequence 7788 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007788.ARR
sequence 7789 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007789.ARR
sequence 7790 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007790.ARR
sequence 7791 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007791.ARR
sequence 7792 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007792.ARR
sequence 7793 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007793.ARR
sequence 7794 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007794.ARR
sequence 7795 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007795.ARR
sequence 7796 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007796.ARR
sequence 7797 updated in /tidi/flt_ticl/cmdMsgLogFile.log from /homes/timed/TI007797.ARR
/tidi/tidi_software/bin/updMsgDrv.sh successfully updated 29 entries, failed with 4
