

TECHNICAL INSTRUCTION		TI 166 Issue 1 18/01/2012 Page 1 of 2
		NETWORK RAIL - SIGNAL ENGINEERING Issue with Continuity of SSI TT Log Dats
Relevant Standard	NR/GN/SIG/19054	

Purpose

An issue has been discovered with the SSI4301-D7 TT software upgrade in that, in certain circumstances, data can be held for a short time in the TT buffer before being sent to the logger. Suspected causes include time adjustment with reference to the Radio Clock and temporary unavailability of the connected logging device. This can confuse the SSI Graphical Replay (SSI GR) application when the data is accessed for analysis. SSI GR SSI8314-B2, Versions 2.0 and earlier may report incorrect times in the file open dialogue and analysis. Version 2.1 will report that there are inconsistencies in the time stamps, but will usually allow analysis to proceed.

A work round has been identified to enable the data to be analysed with minimal affect on any timing. The use of this process will need to be recorded if the data is required as evidence in a serious accident investigation. Also, to maintain the chain of evidence, original log files should not be modified and copies of the log files should be used.

Scope

This TI applies to:

- o All SSI installations using SSI4301-D7 Software in their Technicians Terminal and SSI Graphical Replay software SSI8314-B2 versions 2.0 and above.
- o It applies to all personnel who use SSI Graphical Replay to read SSI Technicians Terminal Logs as an aide to faulting and maintenance or incident investigation.
- o It applies when downloading and reading SSI Technicians Terminal Log files using SSI Graphical Replay in the circumstances detailed above..

Recognition of the Problem

In the file open dialogue of SSI GR, the log data time range table will display a number of available logged data time intervals, separated by periods of one or more hours, for which data is apparently missing although the relevant log files exist.

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TECHNICAL INSTRUCTION

TI 166
Issue 1
18/01/2012
Page 2 of 2

Action Required (Steps to resolve the problem)

Open the MO disk/Flash Card on your analysis PC using Windows Explorer and locate the file that appears to be missing by the time stamp. The windows time stamp is the time the file was closed, and will usually be one hour later than logging started. Changes in daylight saving can also affect the time reported by Windows Explorer. The correct file can be confirmed by examining the TT Long Time Marker (LTM) in the file. The LTM starts with 3', has the date and time followed by # then the TT configuration string, followed by another #.

Make a backup copy of the file.nnn and open it with notepad and you will find that there is a small number of records, usually between one and three records, in front of the (LTM). The records normally consist of five hex character groups and end in a hash character (#). Select the records in front of the LTM up to but not including the 3, and move them after the second # at the end of the LTM. These records will have been logged within a few seconds of the LTM and will not materially affect the analysis. You should now be able to see the missing hour of data in the SSI GR data selection dialogue and to analyse all the data.

In a small number of cases, where the logger device has become unavailable for a few minutes, a larger number of log records may have been buffered by the TT and inserted before the LTM. These cases can be recognised by the inclusion of Short Time Markers (STM) with the format 2'HH:MM# (where HH is the hours and MM is the minutes) from the TT clock. Movement of these records after the LTM will materially affect the analysis and will cause SSI GR to report log data timing anomalies. In these rarer cases, the data will need to be moved to the end of a copy of the previous log file, using a similar method, always ensuring that records are terminated in a #.

Staff to be Briefed

Role	Responsible for Briefing
Head of Asset Management [S&T]	Author
Route Asset Managers [Signalling]	Head of Asset Management [S&T]
Signal & Telecoms Maintenance Engineer	Route Asset Managers [Signalling]
Section Manager (Signals)	Signal & Telecoms Maintenance Engineer
Signal Technicians Signalling Technical Support Staff	Section Manager (Signals)

End