UNDER DOG SOFT WARE

STM SYSTEM GUIDE

FOR STM VERSION 2.4

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Reviewed -			

UNDER DOG SOFT WARE

TABLE OF CONTENTS

1. STM Overview

1.1 Overview of Project

STM is a user configurable UTC system designed to provide fine grained control of a traffic network over and above that offered by present day legacy UTC systems.

1.2 Purpose of Document

This document describes the day to day operation of the STM system.

For information on the ODT and GUI see the ODT User Guide.

2. System Description

The STM system is composed of the following components.

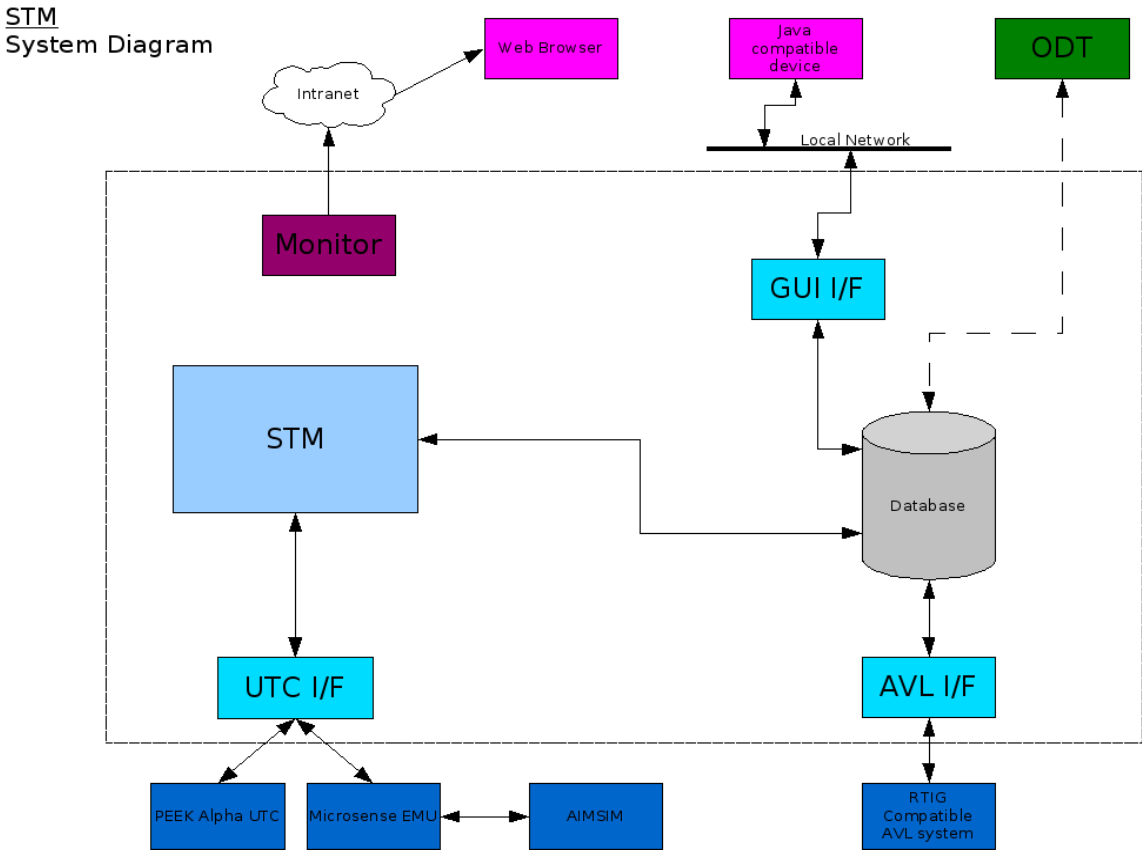
2.1 Server Based

- Database
- STM
- UTC I/F
- AVL I/F
- GUI I/F
- Monitoring

2.2 Client Based

- ODT
- GUI

2.3 STM System Diagram



3. Launcher

The Launcher is a GUI interface to the main STM software

The Launcher runs under the Blackbox window manager. Running under any other window manager is not supported.

The following controls are always displayed;

START STM

This button starts the STM, when running the button will be greyed out

STOP STM

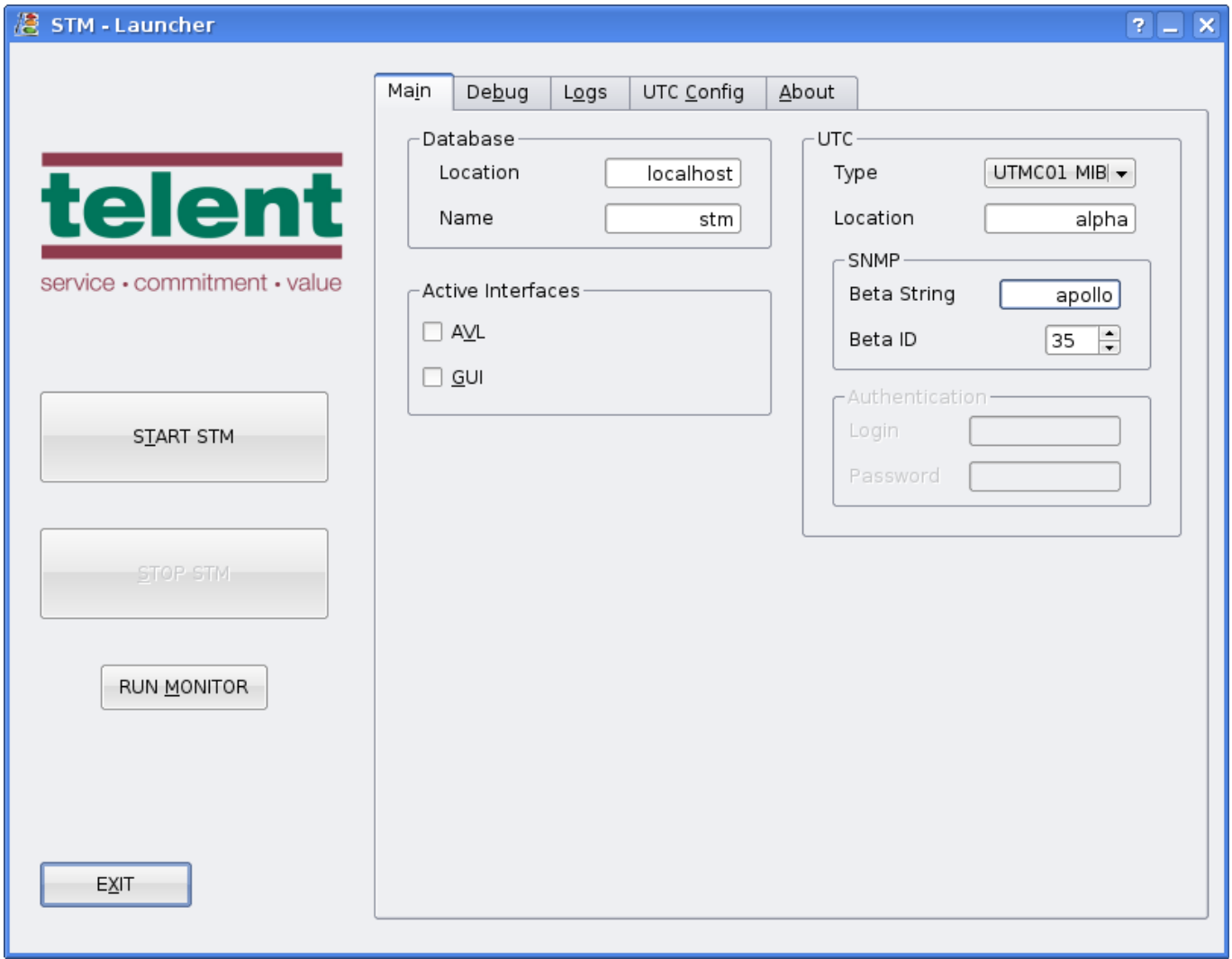
This button stops the STM, when not running the button will be greyed out

RUN MONITOR

This button starts the STM. Note that unlike previous versions the monitor is not required for the running of the main STM software and may be started/stopped at any time

EXIT

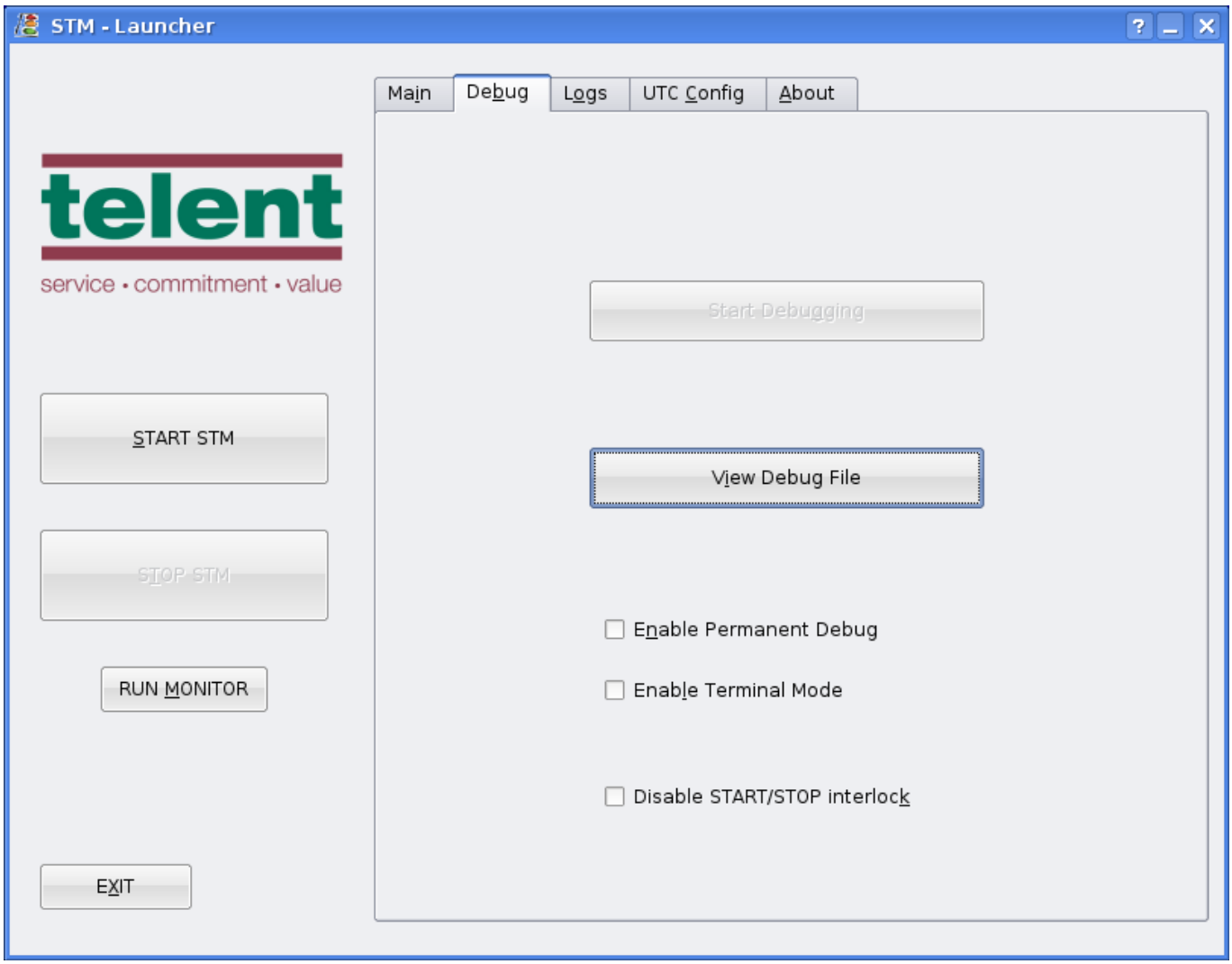
This button will exit the Launcher. Note that unlike previous versions the Launcher is not required for the running of the main STM software and maybe started/stopped at any time.



Authentication

Authentication parameters for the SCOOT interface if in use

3.1.2DEBUG Tab



Note that the controls on this page should only be used under the direction of a telent engineer.

Start Debugging

Starts debugging on a temporary basis. A dialog box will be displayed with a 'stop debugging' button.

View Debug File

Opens up the current debug file in the default system text editor

Enable Permanent Debug

This will enable debug messages for all modules to be written to the default debug file

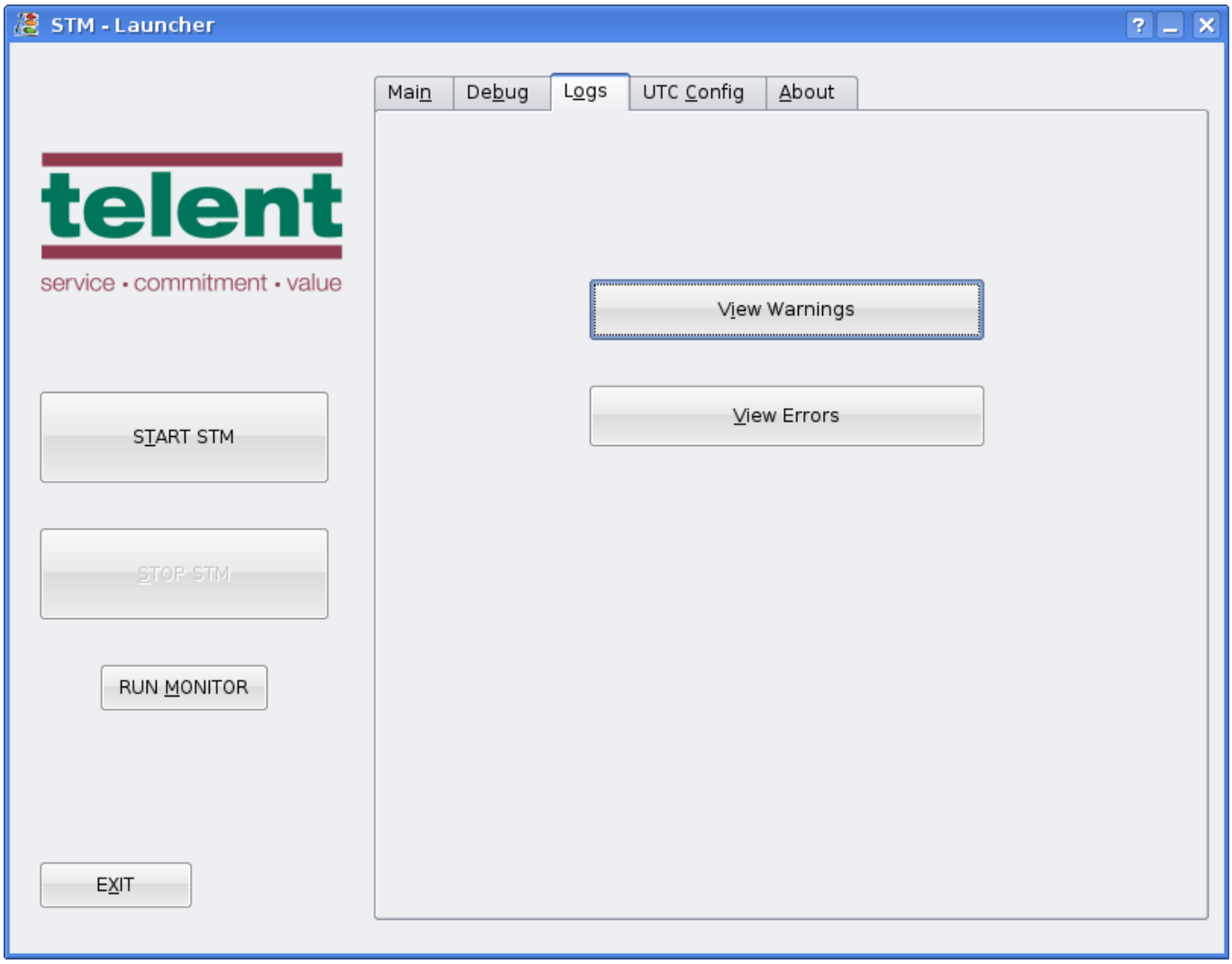
Enable Terminal Mode

This will start each individual process in its own terminal window

Disable START/STOP interlock

This will disable the interlock between the START and STOP buttons for convenience during debugging

3.1.3LOGS Tab



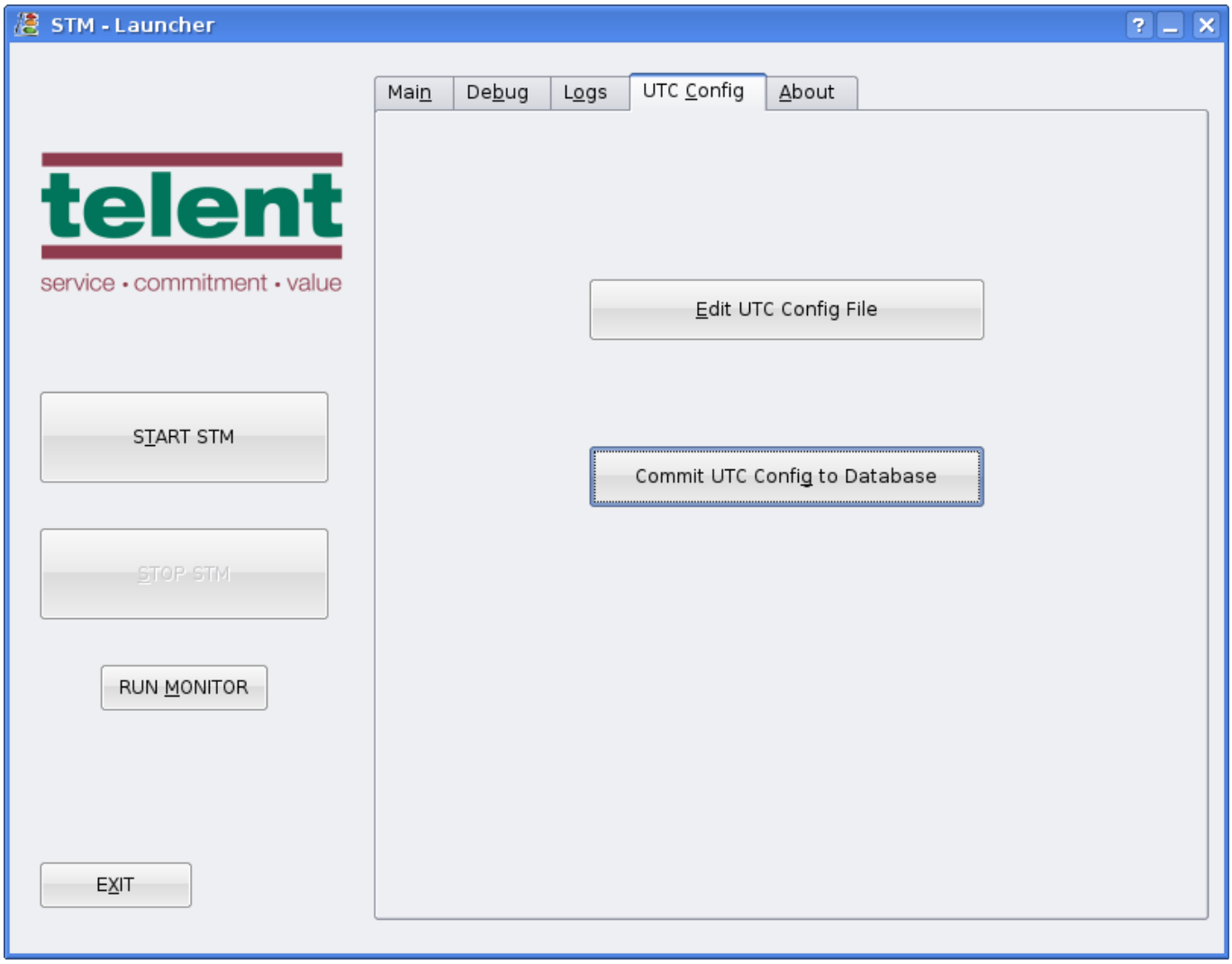
View Warnings

Opens up the current warning file in the default system text editor

View Errors

Opens up the current error file in the default system text editor

3.1.4UTC CONFIG Tab



Edit UTC Config File

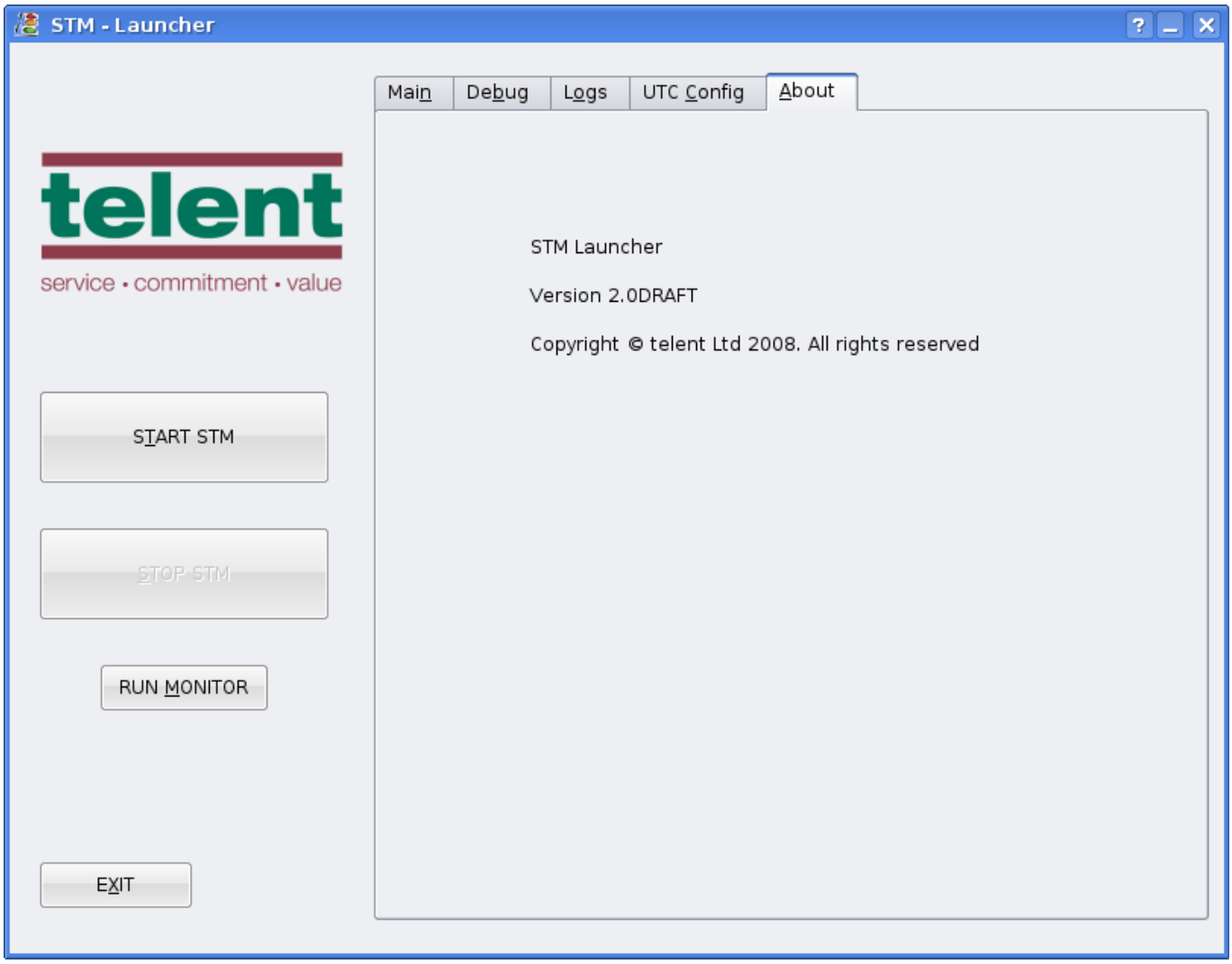
Opens up the UTC Config file in the default system text editor

Commit UTC Config to Database

This parses the UTC Config file and inserts the device definitions into the main database ready for use by STM

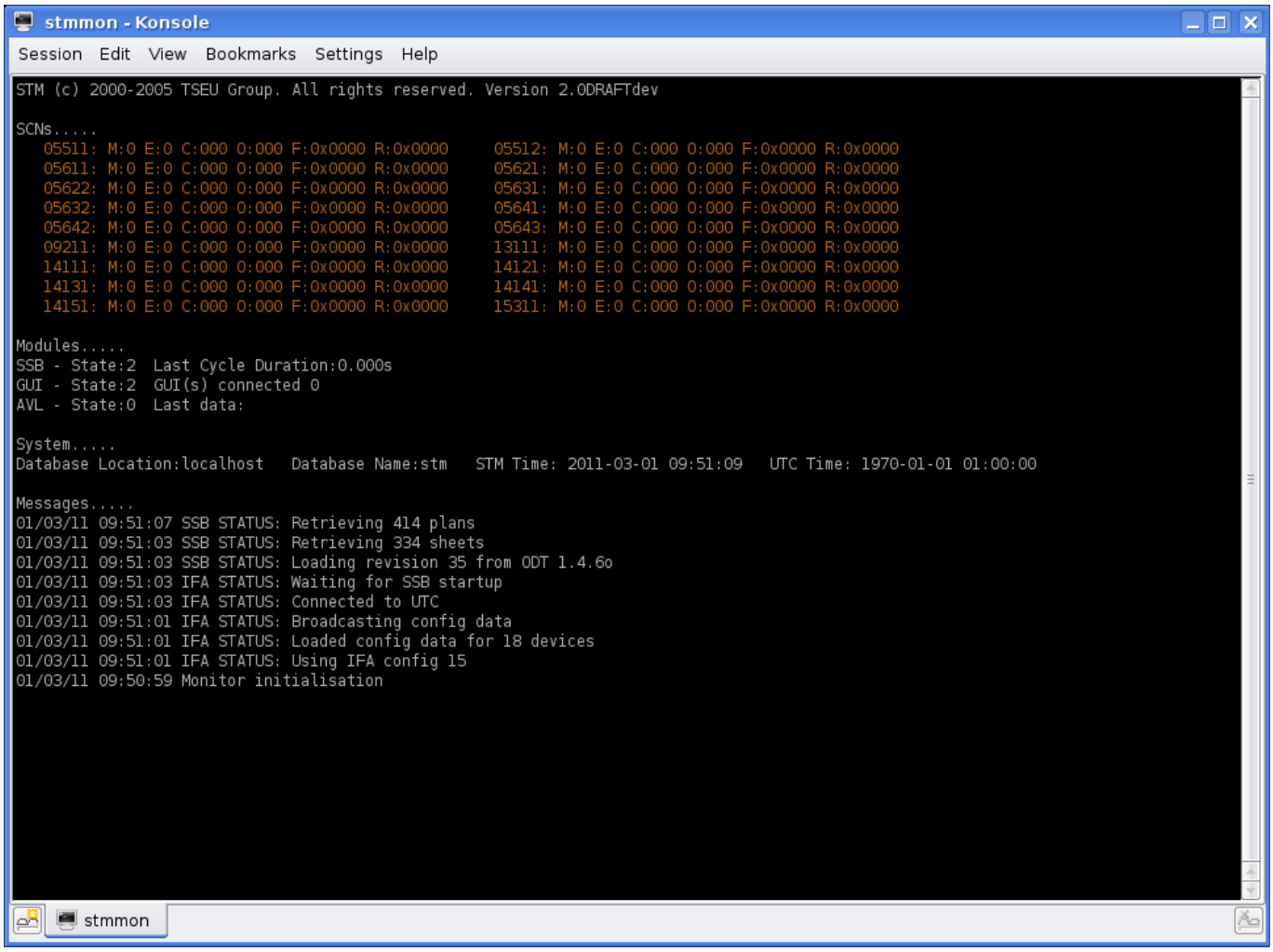
Note that the new config will not be loaded until the next time STM is started.

3.1.5ABOUT Tab



3.2 Monitor Interface

The Monitor displays various operational parameters enabling the operator to monitor the behaviour of the various parts of the STM system.



E: The error count of the SCN

This is incremented should the UTC interface detect possible errors or unexpected behaviour of the STM.

An high error count of may result in the SCN being disabled depending on SCN configuration.

C: The cycle time of the SCN

This is the cycle time either as reported by the UTC or as defined in the current plan being run by the STM.

O: The offset of the SCN

This is the current offset within the plan cycle either as reported by the UTC or as defined in the current plan being run by the STM.

F: The Force Bits

These are the last set of force bits sent to the STM

R:The reply bits

These are the last set of reply bits received from the SCN

3.2.2Modules

The status lines reported by the individual modules.

3.2.3System

System wide status information

3.2.4Messages

This section displays error, warning and status messages from the STM

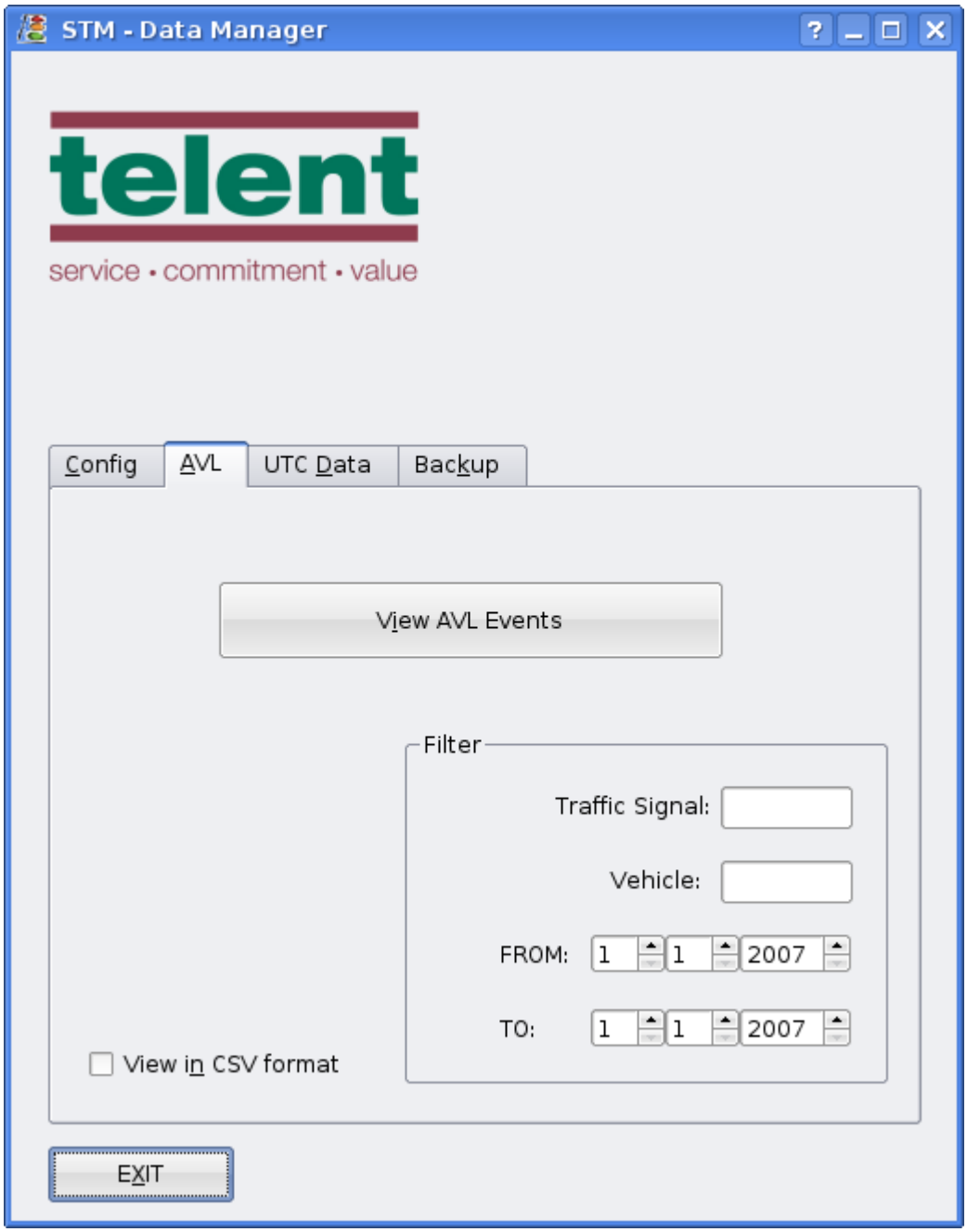
3.3 The Data Manager

Data generated by the system may be viewed or exported via the data manager.

3.4 Config Tab

The Config Tab is used to select the database to be used for the queries.

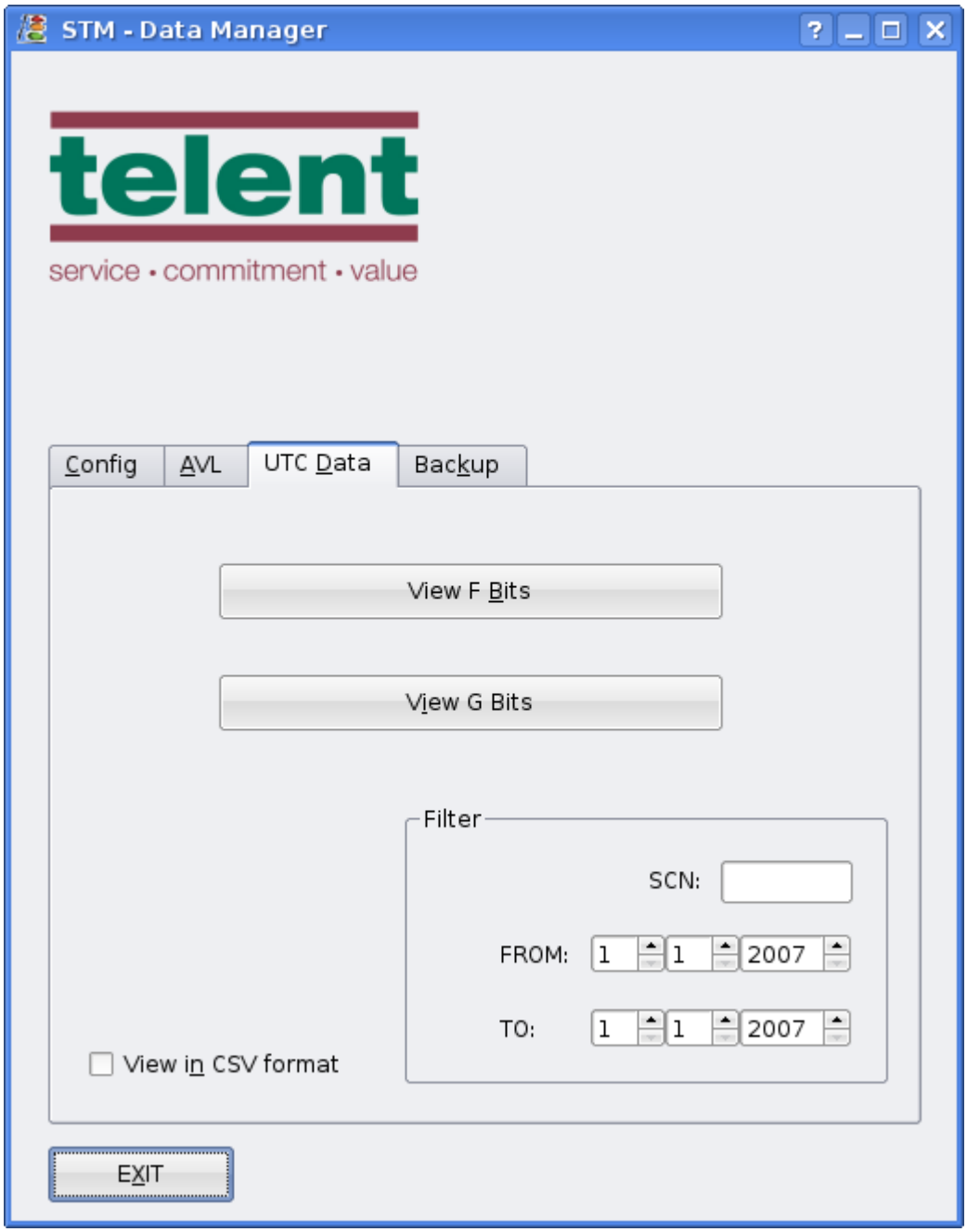
3.4.1AVL Tab



The AVL tab provides access to AVL data.

Data may be viewed or exported to file in a .csv format

3.5 UTC Data Tab



The UTC Data tab provides access to either F or G bits to/from the UTC system.

Data may be viewed or exported to file in a .csv format

3.6 Backup Tab

The Backup tab allows the user to backup the dynamic portions of the database for maintenance purposes.

3.7 System Directories

~/.stm

This directory contains the system configuration files

/var/local/log/stm

This directory contains the log and debugging files

/var/local/www/html/stm

This directory contains the html files which perform the remote mimic display

/.stm/external

This directory contains the directories used to interface with external systems

/.stm/external/controlling

This directory contains the files that indicate which nodes STM is in control of

/.stm/external/disable

This directory contains files that indicate which nodes that STM is to disable

/.stm/external/watchdog

This directory contains watchdog files written by external systems

3.8 System Configuration and Log Files

~/.stm/stm.dev

The SCN definitions for the UTC module.

/var/local/log/stm/debug.log

Contains various debugging information for all modules

/var/local/log/stm/error.log

A list of all the errors detected by the system

/var/local/log/stm/warning.log

A list of all the warning messages generated by the system

All log files in */var/local/log/stm* are rotated via the standard log rotation mechanism.

3.9 Database Maintenance

The database is used to store the dynamic system data both incoming and outgoing and will therefore gradually fill up.

To maintain the database to a reasonable size the following tables should be periodically flushed;

avl_raw_data

ifa_device_replies

ifa_device_commands

ifa_otu_replies

pdmplan_selections

Maintenance of the database is the user's responsibility.

3.10 Remote Mimic

An HTML file is generated at */var/local/www/html/stm/index.html* which mimics the console display. This may be exported via a web server for remote read only display via a web browser.

3.11 External System Interface

STM interfaces with external systems by means of files in various system directories as defined in section 3.7

3.11.1Control Notification

STM will notify external systems that it is currently in control of a node by writing a zero length file named after the node into the 'controlling' directory.

3.11.2Disable Requests

STM will accept disable requests for nodes by looking for files written by external systems into the 'disable' directory. Re-enabling the node is only possible by operator intervention via the Monitor.

3.11.3Watchdog Events

STM will accept watchdog commands from external systems by looking at any files written to the 'watchdog' directory.

- Should a file be detected that is older than 60s a watchdog event will be generated within the STM.
- The watchdog event will cause all devices to be disabled.
- It will be only possible to re-enable the devices by operator intervention via the Monitor.
- The file that caused the watchdog event will be ignored until it's file time changes or it is deleted by an external system.

4. Document Control

4.1 Maintenance and Distribution

This document is subject to formal change and control procedures as required by the Quality Management System (QMS).

4.2 Amendment History

Issue	Date	Change Descriptions	Author
Draft	2010-12-10	Draft, WIP	Tony Smith
1	2011-05-17	Initial Issue	Tony Smith
2	2011-06-14	Added external control stuff	Tony Smith
3	2011-06-30	Added Data Manager section	Tony Smith
4	2014-04-07	Moved to UCM	Tony Smith
5	2015-08-01	Rebranding	Tony Smith

4.3 Abbreviations

AVL	Automatic Vehicle Location
MERV	Management Environment for Road Vehicles
MIB	Management Information Base
RTIG	Real time information group
RTPI	Real Time Passenger Information
SCOOT	Split Cycle Offset Optimisation Technique
SNMP	Simple Network Management Protocol is a UDP-based network protocol
SPRUCE	Selected Priority in UTC Environment
STM	Strategic Traffic Management
TIC	Time In Cycle
UTC	Urban Traffic Control

4.4 Referenced Documents

Title	Doc Ref	Issue
[1]		
[2]		

4.5 Related Documents

Title	Doc Ref	Issue
[1] ODT User Guide		
[2]		