Objective:	Time Plan for the Diagnostic Tool for STC-1XX project.		
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E-mail:	ehsu2@visteon-jv.com	Program:	Diagnostic Tool for STC-1XX
Area:	CCVECS, China	Revision #:	01
Report used for: (Visteon internally or Released to Customer)			

Contents

1. Introduction

1.1 Purpose

The purpose of this document is to outline the time plan for completing the Diagnostic Tool for STC-1XX project.

1.2 Background of Project

A Diagnostic Tool is needed to diagnose any issues with ETB and ECU modules. Error codes within these ECU modules are known as DTC (Diagnostic Test Codes). These DTC's are specific error codes that are assigned to known issues that and ECU module may have. ECU modules detect errors within the system and flags errors along with the DTC. This diagnostic tool will be used to record errors with the module, which can then be shared with other engineers in discussing issues.

1.3 Document Overview

The requirements are discussed in the second section. Following the Requirements section is the Features section which discusses some of the main features that will be implemented into the Diagnostic Tool software. Finally, the project timeline is laid out in the fourth section, detailing the steps necessary to complete the project.

2. Requirements

The following is a list of requirements for the Diagnostic Tool for STC-1XX project:

1. Able to Read DTC from ECU board
2. Ability to Clear DTC from ECU board
3. Able to store DTC's along with User Comments
4. Read Various Engine Parameters
5. Able to read Freeze Frame Data parameters
6. Ability to run self-tests (including key-off and key-on tests)
7. Display System Status (Air Conditioning, Idle Control, …)
8. Ability to run Input/Output tests (Air Conditioning control, MIL, …)
9. Displays Vehicle Information

3. Features

The Diagnostic Tool software is divided into the following 7 main components:

1. Self Diagnostic Tool
2. Read Engine Parameter
3. Freeze Frame Data
4. Self-Test
5. System Status
6. Input/Output Test
7. Vehicle Information

3.1 Self Diagnostic Tool

- ***Read DTC*** – Reads the DTC's on the ECU board and displays each DTC on the screen along with a description.
- ***Store DTC*** - The user is able to add comments next to each DTC in the same window as the DTC Read window and store the DTC's along with comments in an Excel Worksheet File.
- ***Clear DTC*** – Clears all existing DTC's on the NVM (Non-Volatile Memory)
- ***Keep Alive Memory Reset*** – Resets the KAM in the vehicle, which is useful when loading new calibration files, fuel pump or throttle body. This allows the vehicle to better adjust to newly installed car components.

3.2 Read Engine Parameter

- ***Main Parameters*** – Display various parameters including monitored statuses, number of DTCs, Engine Coolant Temperatures, etc… *(See Section 4.2.1 for more details).*
- ***Store Main Parameters*** – Allows the user to store Main Parameter data into an excel file. To store the data into a file there is the option of selecting the file path to where the data is saved. Data is recorded into the excel file where specified, when the user presses the "Start Reading" button, and stops recording data when the user presses the "Stop Reading" button. Parameter data in the Excel File will include the dates the data is read next to each parameter for reference.
- ***Main Parameter Waveform*** – Reads the data from the excel file specified and displays parameter data in a waveform.
- ***HEGO Sensor Voltage*** – Displays the waveform of voltage read from the HEGO Sensor Voltage.
- ***Distance Travelled with MIL On*** – Displays the distance travelled with MIL on.

3.3 Freeze Frame Data

- ***Freeze Frame Data*** - Displays the engine conditions when a malfunction is detected. This is useful for determining the different car components that might have been a factor during malfunction. *(See Section 4.3 for more details).*
- ***Store Freeze Frame Data*** – The freeze frame data read through the program will be stored into an excel file specified by the user. If the excel file specified already contains data, the newly added data will append existing data. Each Freeze Frame parameter in the excel file will include the dates read for reference.

3.4 Self-Test

- ***Engine-Off Test*** – Runs the Engine-Off test when the engine is not running and notifies the user if the system runs correctly without the engine on.
- ***Engine-On Test*** – Runs the Engine-On test when then engine is running and notifies the user if the system runs correctly with the engine on.

3.5 System Status

Reads the live status of specific car components such as Air Conditioning, or Idle Control. *(See section 4.5 for more details).*

3.6 Input/Output Test

Allows the user to control specific car components like Air Conditioning and MIL. *(See Section 4.6 for more details).*

3. 7 Vehicle Information

Displays 3 types of vehicle information:

1. VIN (Vehicle Identification Number)
2. Calibration ID
3. CVN (Calibration Verification Number)

4. Timeline

	Jun 11 – Jun 15					Jun 18 – Jun 21				Jun 25 – Jun 29			
Requirements													
Design													
Research													
Implementation													
Testing													
Validation													

Finished:
In Progress:

1. Requirements (5 Days) - Gathering background information and asking the customer what they need.
1. Design (2 Days) - Designing the user interface of the software and the structure of the underlying code.
2. Research (3 Day) - Getting familiar with the software used to implement the Diagnostic Tool for STC-1XX and learning how to interact with the ECU using the PC.
3. Implementation (3 Days) – Creating and building the Diagnostic Tool.
4. Testing (2 Days) - Testing the software for any software bugs using stress tests and worst case scenarios.
5. Validation (1 Day) - Presenting the final product to the customer with the requirements met.