Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report

Contract Number:	582-11-13469-2019		
Grantee:	QuantLogic Corporation (QuantLogic)		
Report for the Monthly period:	September 1, 2012 to October 10, 2012	**Date Submitted:**	October 10, 2012

Section I. Accomplishments

Provide a bulleted list of project accomplishments as well as a description of their importance to the project.

Task 4: Transient Control Strategy Development and Testing

- Task 4 is 60% competed
    1. Transfer the simulation verified engine control models to open engine control unit (ECU) hardware and carried out the hardware level control function verification.
        a. Verified the low pressure exhaust gas recirculation (EGR) valve control in hardware level.
        b. Verified the throttle valve actuation model in hardware level.

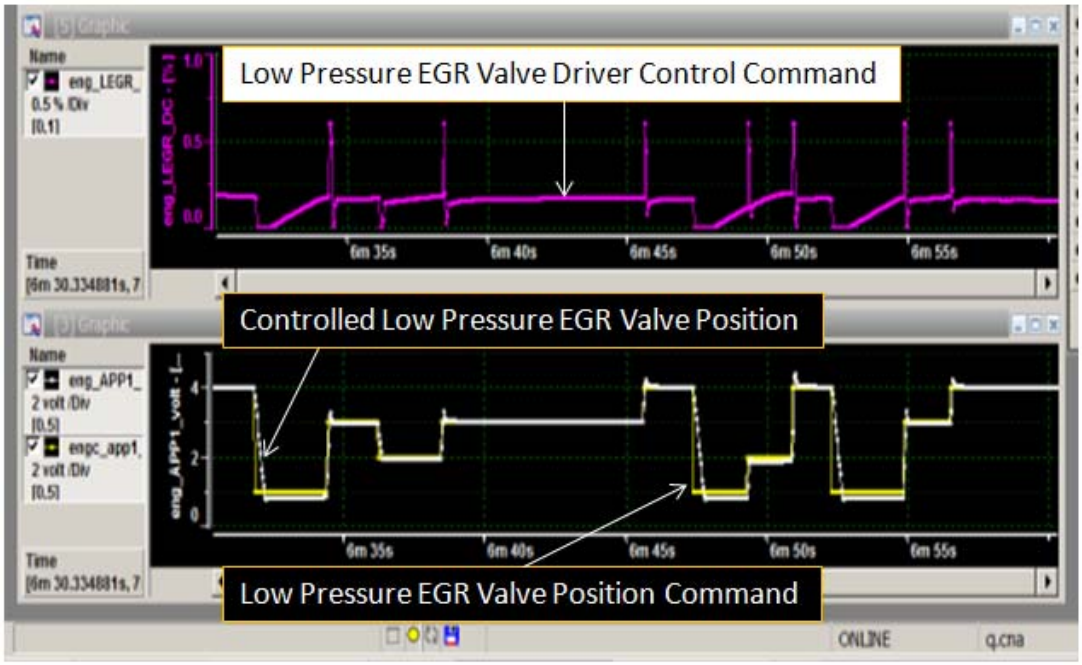

Figure 1 Illustration of tuning of low pressure loop EGR valve control parameters

    2. Continue the progress of the hardware verification of fuel mass control and fuel timing control models based on driver command and engine speed, as well as with and without low pressure loop EGR.

Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:

Task 4: Transient Control Strategy Development and Testing

2.4. Task Statement: The PERFORMING PARTY will develop and test an engine control strategy which can smoothly adjust the EGR to the target NO_x emission reduction levels during transient engine operation without noticeable impact to the engine operation.

2.4.1. Control strategy development.

2.4.1.1. The PERFORMING PARTY will develop an engine control strategy which can smoothly adjust the high and low pressure loop EGR or a combination of both EGRs to the target NO_x emission reduction levels during transient engine operation without noticeable impact to the engine operation. The control strategy will include functions to address the coupling of EGR with boost, as well as coupling of high and low pressure loop EGR. The PERFORMING PARTY will also improve the control model.

Section II: Problems/Solutions

Problem(s) Identified: Report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project

a) Task 4 starting date was set at May 4, 2012, due to waiting for the Notice to Proceed (NTP).

Proposed Solution(s): Report any possible solution(s) to the problem(s) that were considered/encountered

a) Transient control schedules are needed be adjusted for the shortened time window for the new tasks due to the starting date of new NTP. Currently QuantLogic and Houston Advanced Research Center (HARC) project team is allocating sufficient resources to speed up the progress in Task 4.

Action(s) Conducted and Results: Describe the action(s) taken to resolve the problem(s) and its effect

a) None.

Section III. Goals and Issues for Succeeding Period:

Provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen.

- Move on to the engine verification of control model developed and tuning.

Date: 10/10/2012

Authorized Project Representative's Signature

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*