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Concentration: Electrical and Computer

Class: Senior

## Benchmarking

### Test Vehicles:

Acura TL

Acura TSX

Acura MDX

Ford Flex

Ford Edge

Infiniti G37

MOS TEST: Testing Voice Quality with a series of Nursery Rhyme Lines

DALT TESTS: Diagnostic Alliteration Test, Testing Intelligibility

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## Network Noise Suppression

Network Noise Suppression Testing: This consists of a specialized portable tester which allowed JCI to determine the amount of noise suppression that a network uses. The first task is to determine the locations and networks to test. Sales volume estimates and population are used to determine the locations while the number of subscribers determines which networks are tested. Next, the portable tester is shipped to these locations and pre-paid SIM cards are purchased by the operator.

Following a short tester setup, a phone call is then placed and a test file is played across the network and recorded at the far end on a landline phone. The recordings are then analyzed.

My Part: I was responsible for adding a new device to the test method documentation while also running some of the Network Noise Suppression testing here in the West Michigan area.

## ECP Projects

DRT/DALT Replacement: The Purpose is to replace the live subject testing with a speech recognition engine. In three years this will save JCI thousands of dollars. This will allow benchmarking to be more efficient. Tasks included making the control file, making the phonetic spelling of all the words, upsample all of the 8k files, run the files through the speech recognition engine, and compare the percentage of accuracy of the engine to the accuracy of the live subjects.

MOS Replacement: The purpose is to replace the live subject testing with a recognition engine and save JCI thousands of dollars over time. We are currently in the process of getting the required recordings.

Streaming Audio: The current test of streaming audio through a Bluetooth enabled phone seems inefficient. Currently we listen to two songs on repeat for 60 minutes or longer, while listening intently for flaws in the audio such as long or short gaps, pops, or clicks. The hope is to automate this test by designing a certain type of software to detect these flaws and output the results in a spreadsheet form.