GM Powertrain
GM Milford Proving Ground
3300 General Motors Rd
Milford, MI 48380

FEDERAL COMMUNICATIONS COMMISSION
1270 Fairfield Road
Gettysburg PA 17325-7245

Application Narrative for Proposed Special Equipment Program

Description of General Motors Research Corporation Operations

The General Motors (GM) Milford Proving Grounds is a GM facility in Milford, Michigan. The campus is home to 4,000 GM Engineers and Technicians and has been the premier GM testing facility since 1924. Many types of validation testing, including vehicle crash testing and telematics system testing, are conducted at the Milford Proving Grounds. Ever-changing crash safety regulations, and differences between such regulations from one jurisdiction to another, require GM to conduct vehicle crash testing and telematics system testing under a variety of constraints and scenarios.

General Motors Research Corporation (GMRC), a wholly owned indirect subsidiary of GM, requests a two-year experimental license to repeat GPS signals to support the communications requirements for the crash testing of vehicles and telematics systems. The crash test facilities at Milford Proving Grounds are uniquely equipped to conduct verification testing of telematics systems. Although GMRC is currently operating a GPS re-radiator pursuant to Special Temporary Authority (STA), it would like to expand the testing to include vehicles for additional target jurisdictions and telematics systems.

The vehicle crash and telematics system testing at Milford Proving Grounds occurs indoors, and therefore the roof of the facility blocks GPS signals from reaching the test vehicles. GMRC has already acquired an experimental license to operate one GLI-Metro-G Unit by GPS Source inside the crash test building under the call sign WH2XXR. However, approval for seven (7) more GLI-Metro-G units is required to ensure coverage in the entire crash test facility and to successfully complete the required testing. In addition for the existing GLI-Metro-G Unit a change to the output power and elimination of the L2 band (frequency 1227.60 MHz) is proposed.

GPS signals will be received and re-transmitted into the building for purposes of type approval, which will allow GMRC to certify that vehicles comply with new crash safety regulations, and the testing of vehicle telematics systems. The attached emission calculations demonstrate that the GPS Source equipment complies with the Commission's emission limits for GPS re-radiators.

Objectives

GMRC seeks to accomplish the following objectives:

1. Coverage of our testing facility with GPS and GLONASS radio signals.
2. Ability to conduct tests according to regulatory requirements.

3. Ability to test equipment implementation and troubleshoot problems in a controlled environment.

Contribution to Radio Art

Verification of the development of active crash notification reporting systems is beginning. Implementation of this project is necessary in the validation of the developed crash notification systems. These systems will have the ability to notify emergency personnel immediately when a crash occurs, which saves time and thus saves lives in moments when time is critical.

Pictures of MPG Crash test building

Figure 1 - Arial photo of  MPG Crash test building

Figure 2 – Inside MPG Crash Test Building Facing East

Figure 3 – Inside MPG Crash Test Building Facing South East

Figure 4 – Inside MPG Crash Test Building Facing South

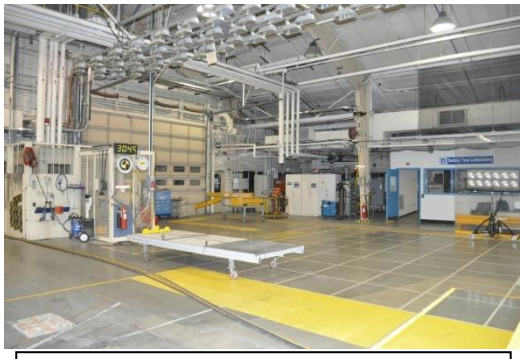

Figure 5 – Inside MPG Crash Test Building Facing South West

Figure 6 – Inside MPG Crash Test Building Facing West

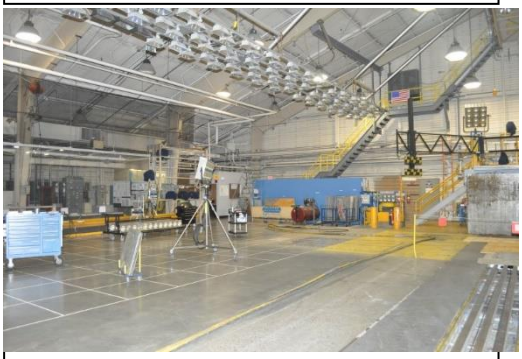

Figure 7 – Inside MPG Crash Test Building Facing North West

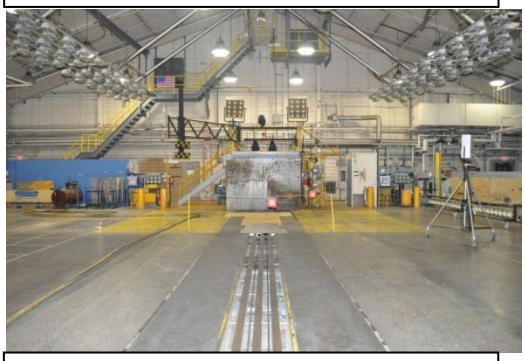

Figure 8 – Inside MPG Crash Test Building Facing North

Figure 9 – Inside MPG Crash Test Building Facing North East