# GVSC Project Monthly Progress Report – Month 2

Project: AVMI-GVSC10-2024: Sound System Modeling, Simulation and Integration in the ASL DE Ecosystem Simulator  
Deliverable Number & Description: Q1 / RT 3.1 – Initial Acoustic Model; Expanded Sound Object Library  
PI: Frederick W. Bianchi (WPI)

Co-PIs: David Smith (CUNY) Lee Moradi (WPI)  
Reporting Period: August 2025 (Month 2)  
Report Date: September 2025

**1. Executive Summary**

The second project month advanced technical development. Work began on an acoustic model for one, proof-of-concept, military vehicle type and additional sound objects were created and stored in the library. Comparative case studies were initiated to test methodology effectiveness. Documentation and GitHub repositories were set up to track project progress. Preparations were also made for Month 3 spatial audio system installation and validation tasks.

**2. Accomplishments**

Acoustic Model Development (RT 3.1.1.2) – Identified a proof-of-concept military vehicle and acquired preliminary acoustic samples for key vehicle components (engine, tracks, etc).

Expanded Sound Object Library (RT 3.1.2.4) – Added multiple vehicle component sound objects to library; documented metadata for each.

Comparative Case Studies (RT 3.1.1.2) – Began case studies on effectiveness of sampled vs. acoustically modeled objects.

Documentation & Version Control – Established GitHub repository for collaborative tracking of workflows and external sound library entries.

Team Integration – Weekly meetings initiated between PI, co-PI, and research assistant.

**3. Challenges/Issues & Mitigation Plans**

Limited Access to Recorded Vehicle Data – Field samples of military vehicles remain sparse. Mitigation: Using a Schweden1989 Stridsvagn 121 battle tank library and acoustical modeling as interim source of sound until the Bradley sound library is acquired.

Software Integration Complexity – Waiting for the official integration of VI-Grade software platforms. Mitigation: Using Unreal Engine and Kontakt software as interim platforms.

**4. Planned Activities for Next Month**

Order, install and align multichannel immersive audio system into designated research spaces (Smith/Bianchi – Oct 2025).

Expand spatialized sound models based on Month 1–2 library objects (Smith – Sept 2025).

Integrate NVH software platform (Srikar Gorantla).

Coordinate with GVSC for Q1 Quarterly Report structure and expectations (Bianchi – Sept 2025).

**5. Personnel, Collaborations, and Resources**

Personnel: New staff added; Research Assistant (Srikar Gorantla) fully engaged in set up tasks.

Resources: GitHub repository active; waiting for the new Dell 16 Premium PCs, coordinating delivery of immersive audio hardware for Month 3.

Collaborations: Continued alignment with GVSC and AVMI teams.