# GVSC Project Monthly Progress Report – Month 1

Project: AVMI-GVSC10-2024: Sound System Modeling, Simulation and Integration in the ASL DE Ecosystem Simulator  
Deliverable Number & Description: Q1 / RT 3.1 – Initial Hardware/Software Setup; Prototype Sound Objects  
PI: Frederick W. Bianchi (WPI)

Co-PIs: David Smith (CUNY) Lee Moradi (WPI)  
Reporting Period: July 2025 (Month 1)  
Report Date: September 2025

**1**. **Executive Summary**

During the first project month, the team focused on project setup, including acquiring and configuring computing resources, establishing workflows for sound simulation, and reviewing existing methodologies. A preliminary structure for the Sound Object Library was designed, and prototype sound objects were created. The month concluded with the project team aligning deliverables to the Q1 milestones and confirming readiness for integration of VI-Grade NVH, SimSound and Unreal Engine environments.

**2**. **Accomplishments**

Hardware & Software Setup (RT 3.1.2) – Identified the Dell 16 Premium PC with RTX 4070 GPUs as meeting the VI—Grade platform requirements.

Workflow Development (RT 3.1.2.1) – Drafted workflows for integrating sample-based and acoustical modeling approaches.

Sound Object Library (RT 3.1.2.4) – Created structure of the Sound Object Library; entered first prototype sound objects (sample-based and CEA-based).

Comparative Methodology Review (RT 3.1.1.1) – Completed literature and technical review of sampling vs. modeling approaches.

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

Delayed Grant Start Notification – Notification received in late August although start date was July; created backlog for reporting. Mitigation: Rapid consolidation of setup tasks and report drafting.

Software Access Delays – Pending final access to VI-Grade NVH modules. Mitigation:

Developed proof-of-concept using Kontakt and Unreal Engine for interim testing.

**4. Planned Activities for Next Month**

Expand Sound Object Library with additional vehicle component models. (Bianchi, Smith Aug 2025)

Begin acoustic model development for first vehicle type. (Smith Sept 2025)

Establish GitHub repository and documentation standards for sound object tracking (Srikar Gorantla – Aug 2025).

Initiate collaboration meetings with GVSC to confirm early deliverables (Bianchi/Moradi – Sept 2025).

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

Personnel: PI (Bianchi), co-PIs (Smith, Moradi), one research assistant (Gorantla) onboarded.

Resources: New PCs ordered; preliminary audio workspace established.

Collaborations: Ongoing coordination with AVMI and GVSC teams for technical alignment.