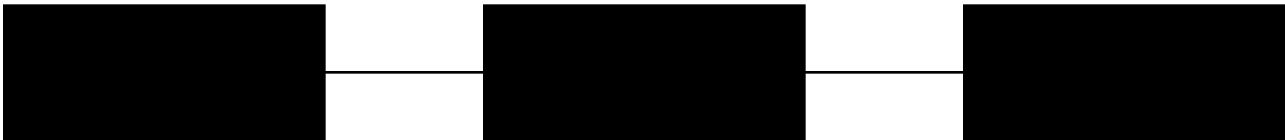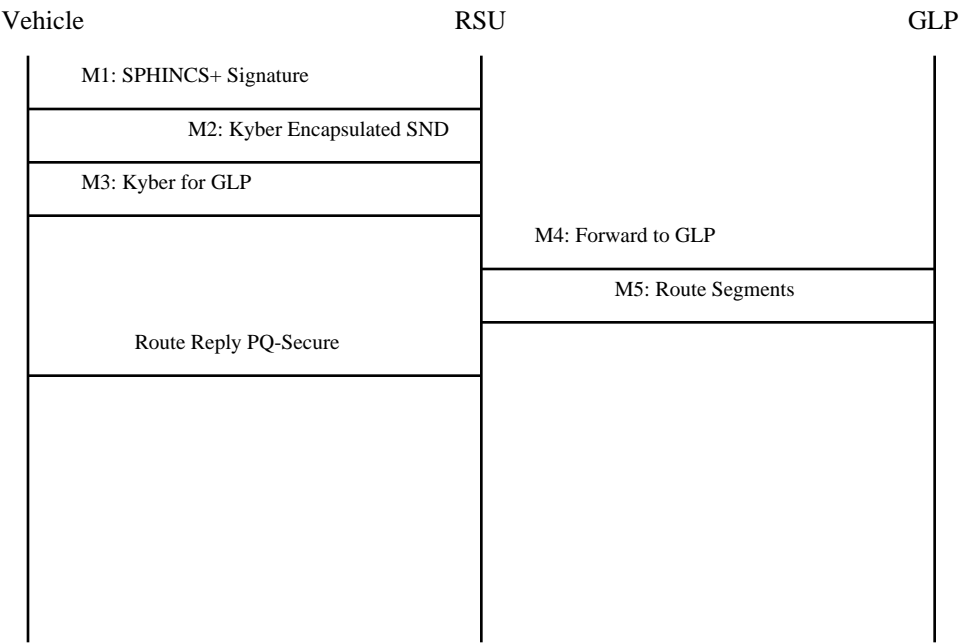# Quantum-Resilient IoV Protocol (With Flowcharts)

This document includes Post-Quantum redesign of the IoV RSU-based authentication protocol using SPHINCS+ and CRYSTALS-Kyber along with visual flowmaps. Flowmap 1 shows the overall entity interaction in the IoV environment. Flowmap 2 shows the message-level protocol flow using PQ cryptography.

Flowmap 1: IoV Entities

Flowmap 2: PQC Protocol Flow

Vehicle	RSU	GLP

M1: SPHINCS+ Signature

M2: Kyber Encapsulated SND

M3: Kyber for GLP

M4: Forward to GLP

M5: Route Segments

Route Reply PQ-Secure

These diagrams illustrate how SPHINCS+ and Kyber integrate into the existing IoV authentication protocol, ensuring post-quantum security with minimal latency overhead.