Appendix L
3S Sound Measurements Memo

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Subject: 3S Sound Measurements

Following your inquiries on operational sounds from 3S ropeway systems, we have some relevant measurements we can share with you. The measurements were taken outside the station and near towers of a 3S system in Tyrol, Austria at the Stubai Glacier. This 3S system includes 48 gondola cabins and has a cabin capacity of 32 passengers. The towers are all support towers and the system utilizes slack carriers. The drive system for this 3S system is an above-ground drive motor and bullwheel. The station also includes a return bullwheel. You may find these characteristics similar to how you have described your proposed system, which we understand would use an operating speed of 6 m/s. System operations were coordinated with the measurement activities.[1]

The following table lists the location of measurements taken near the station (0 degrees is along the lift line) and the sound pressure levels measured. For this table, all measurements were taken at an operating speed of 6 m/s.

Station Sound Measurements

Measurement Location Description	***Measured L_{eq}, dBA***
Outside of Station 0 degrees at 50 meters	51
Outside of Station 30 degrees at 35 meters	52.6
Outside of Station 45 degrees at 35 meters	53.7
Outside of Station 0 degrees at 50 meters	50.9
Outside of Station 30 degrees at 35 meters	52.6
Outside of Station 45 degrees at 35 meters	55.6
Outside of Station 0 degrees at 20 meters	58.9
Outside of Station 90 degrees at 20 meters	54.5

The following table lists the location of measurements taken near one of the towers at varying operating speeds and two distances *from the tower head*.

[1] While system operations were coordinated with the measurement activities other noise sources may also be reflected in these noise measurements.

Tower Sound Measurements

Measurement Location Description	*Line Speed (meters per second)*	*Measured L_{eq}, dBA*
Tower 90 degrees at 20 meters	7	60.1
Tower 90 degrees at 20 meters	6	55.3
Tower 90 degrees at 20 meters	5	52.6
Tower 90 degrees at 20 meters	4	47.4
Tower 30 degrees at 30 meters	7	57.0