WW Multidirectional Elevators

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WW Elevators has partnered with Panel Support Systems to explore a redesign of their elevator panel to accommodate sideways movement in addition to traditional vertical travel. This concept builds on the increasing demand for adaptable building transportation systems in both commercial and residential settings. The proposal outlined here draws on tools from computer-aided software engineering (CASE) to present a set of technical and performance criteria, along with a development roadmap, for bringing this concept to life (Insider Tech, 2017).

The new panel design must allow users to select destinations not only by floor but also by horizontal location. To achieve this, the interface will feature a dynamic touchscreen that displays a building map with all reachable destinations. The system will also show the elevator car’s real-time position and offer expanded emergency communication features to cover the new routes. For security purposes, certain areas accessed via horizontal movement will require user authentication.

Hardware specifications call for a touchscreen at least 12 inches in size, equipped with haptic feedback to improve usability. Precision in navigation will be enabled through a combination of GPS and inertial measurement sensors, while microcontroller units will manage the newly integrated motors and horizontal tracks. Software running the panel must be capable of handling a graphical interface and be compatible with existing building control systems. Communications within the system must use secure protocols like TLS 1.3 or better to protect data and ensure safe operation (*Sideway Elevators - the Future of Urban Mobility*, 2023).

The system is expected to be highly responsive, with interface actions taking no longer than half a second and user selections transitioning in under 1.5 seconds. The target system uptime is 99.95 percent or higher, and in the event of a fault, the system should detect and report the issue within five seconds to allow for a prompt response (*Sideway Elevators - the Future of Urban Mobility*, 2023).

There are several constraints to consider. The upgraded panel must work within the framework of the current elevator infrastructure, particularly where vertical shafts are concerned. It must also be designed in accordance with ADA accessibility standards, limiting how interface elements are presented. Energy use should stay under 50 watts, and the system must be robust enough to operate in temperatures ranging from freezing to 50 degrees Celsius.

A phased development schedule has been proposed, beginning with a design phase in May and June of 2025. Development and testing will take place from July through October, with the final deployment and training occurring in November. The projected cost for the complete project is $215,000, which includes hardware development, software engineering, testing, and staff training.

The current elevator panel is limited to basic up-and-down travel with floor-based call buttons and a standard motor. The proposed design would introduce a touchscreen capable of guiding users through hallways and across levels, supported by new sensors and motor systems designed for multidirectional travel.

Sources referenced during the planning process include the ADA Standards for Accessible Design, the IEEE guidelines for software requirements specifications, and a recent industry publication titled "Elevators Today: Innovations in Transport." These materials have helped inform the approach outlined in this proposal (*Sideway Elevators - the Future of Urban Mobility*, 2023).

References

Insider Tech. (2017, June 28). *This elevator is straight out of Willy Wonka — it can go sideways*. YouTube. <https://www.youtube.com/watch?v=953en-PEi6s>

*Sideway Elevators - the Future of Urban Mobility*. (2023, December 14). TTI Group. https://ttilift.com/sideway-elevators/

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