

Claims:

Claim 1: A portable monitoring system for detecting bed exits and falls, comprising:

- A depth imaging sensor (110 and 160) to classify body posture.
- A processing unit (120 and 170) with a touchscreen (140) configured to perform sound recognition and vision analytics and generate alerts.
- A mobile base (130) that allows the device to be easily pushed to any location.

Claim 2: The system of claim 1, wherein the depth imaging sensor (110 and 160) operates without using cameras to preserve privacy.

Claim 3: The system of claim 1, further comprises a mobile base (130) for easy deployment beside beds or wheelchairs.

Claim 4: The system of claim 1, wherein the processing unit (120 and 170) utilises edge computing for real-time analysis.

Claim 5: The system of claim 1, wherein the alerts are transmitted wirelessly to the caregiver call bell system (300) and the mobile app (310).

Claim 6: The system of claim 1, further comprises a touchscreen interface (140) for configuring Wi-Fi, alert types, volume settings, device location, monitoring mode, and server settings.

Claim 7: The system of claim 1, wherein the rule-based engine module (280) determines the severity of abnormal events before triggering alerts.

Drawings:

1. The overall system setup, including the Portable LASSO unit and its placement.
2. Internal components include the depth imaging sensor, sound recognition module, processing unit, and touchscreen interface.
3. Workflow diagrams showing how data is captured, analysed, and transmitted.

Conclusion:

The Portable LASSO addresses critical safety concerns in healthcare and aged care by providing an accurate, non-intrusive, easy-to-deploy solution for bed exit monitoring and fall detection. Its innovative depth imaging and sound recognition technology ensure a reliable system that improves care quality while preserving user privacy.