

Safety and human control

A proposed safety philosophy.
Validation must precede household use.



People retain control

Human safety

Assess foreseeable risks before a robot moves near people.

Human oversight

Clear permission, accessible interruption and deliberate recovery after a stop.

Operating limits must reflect the person, the task and the environment.

Movement needs defined limits

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| 01 | Emergency stop | Independent stop path and deliberate reset. Stopping must account for stability. |
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| 02 | Controlled movement | Validated motions, restricted operating zones and predictable transitions. |
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| 03 | Force limitations | Establish and test task-specific limits before operation near people. |
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Space to stop

Detect obstacles.
Preserve clearance.
Pause under uncertainty.

Sensors, stopping behavior and
human proximity need controlled tests.



The home's information stays personal

Privacy

Consent before collection.
Only the data a task needs.
Clear retention and deletion.

Cybersecurity

Controlled access.
Protected software updates.
Recovery when trust is lost.

These are design requirements. Implementation and independent review remain ahead.

Failures belong in the test plan

Normal operation

Repeat the intended task.

Unexpected obstacle

Verify detection and stopping.

Lost sensor input

Verify a safe response.

Interrupted command

Verify stop and recovery.

Safety claims require documented test evidence. No safeguards are claimed as implemented.