**System Requirements (EARS Syntax):**

 **Ubiquitous Requirements**: Requirements that are always active (so there is no EARS keyword):

**The <system name> shall <system response>**

Example: The mobile phone shall have a mass of less than XX grams.

* The Safe Life for Seniors system shall monitor the house 24/7.

 **State-driven Requirements**: Requirements that are active as long as the specified state remains true and are denoted by the keyword “While”:

**While <precondition(s)>, the <system name> shall <system response>**

Example: While there is no card in the ATM, the ATM shall display “insert card to begin”.

* While the senior has their phone on them, the Safe Life for Seniors system shall track their location.

 **Event-driven Requirements**: Requirements that specify how a system must respond when a triggering event occurs and are denoted by the keyword “When”.

**When <trigger>, the <system name> shall <system response>**

Example: When “mute” is selected, the laptop shall suppress all audio output.

* When “SOS” button is pressed, the Safe Life for Seniors system shall contact all emergency personnel.

 **Optional-feature Requirements**: Requirements that apply in products or systems that include the specified feature and are denoted by the keyword “Where”.

**Where <feature is included>, the <system name> shall <system response>**

Example: Where the car has a sunroof, the car shall have a sunroof control panel on the driver door.

* Where cameras are installed, the Safe Life for Seniors system shall monitor suspicious movements.

 **Unwanted-behavior Requirements**: Requirements that are used to specify the

required system response to undesired situations and are denoted by the keywords.

“If and Then”:

**If <trigger>, then the <system name> shall <system response>**

Example: If an invalid credit card number is entered, then the website shall display “please re-enter credit card details”.

* If there is no more money in their account to order delivery, then the Safe Life for Seniors system shall contact the senior and their emergency contacts.

 **Complex Requirements**: Requirements that are specified by a combination of simple building blocks of the EARS patterns:

**While <precondition(s)>, When <trigger>, the <system name> shall <system response>**

Example: While the aircraft is on ground, when reverse thrust is commanded, the engine control system shall enable reverse thrust.

Complex requirements for unwanted behavior also include the “If-Then” keywords.

* While the senior is close to their home, when they press the unlock button on the app the Safe Life for Seniors system shall unlock their front door.