**System Requirements (EARS Syntax):**

Ruleset:

 The clauses of a requirement written in EARS always appear in the same order. The basic

structure of an EARS requirement is:

While <optional pre-condition>, when <optional trigger>, the <system name> shall <system response>

 A requirement must have:

 Zero or many preconditions

 Zero or one trigger

 One system name

 One or many systems responses

 **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.

 **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”.

 **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.

 **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.

 **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”.

 **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.