

ERD 320 - SNC low level specifications.

23 July 2025

HMI Components:

- touch-activated sensor (App based or capacitive touch).
- Pure tone sensor
- critical system diagnostic indicator / display.

SNC Must:

- Quick to respond and not make the communications slow due to processing done
- Operate from 3.3V, 5V, 9V and not exceed 0.5 A pull.
- Adhere to SCS (will be discussed)
- Manage and communicate all state transitions
- await end-of-calibration (EoC) signals from SS and MDPs within CAL state before displaying critical information.
- 2nd touch sensor to transition from CAL to MAZE state.
- Make decisions needed to navigate the maze. (navigation specifications).
- Detect a pure tone at the frequency given.
- Receive and display critical system diagnostic information / data.
- Must fit on a 10cm by 10cm board

Pure Tone Detection:

Maximum Volume of 60 dB with minimum distance of 10cm. from microphone.

Must operate from 3.3V from the ESP32 PIN. and feed back 0-330. Detecting 2 tones with duration of 0.5 to 1 seconds, within 2 seconds of each other, Transition from MAZE state into SOS state

↳ Remain until another set of 2 tones are detected.

No digital filters are allowed.

Must ensure capable in a noisy environment.

Group 4S - 2600 Hz needs to be detected, with 5% tolerance

Kul.

23/06/2025.