

- i) Graphical User Interface with GTK+
- ii) Video capture using Gstreamer
- iii) 2D graphics using Cairo

Window functions:

- 1) `window_set_default()` : The default window in GTK+.
- 2) `window_init()` : initializing window parameters
- 3) `window_create()`: create new window.
- 4) `window_set_properties()`: set various window parameters and functionality. Initialize webcam specific parameters.

Webcam functions:

- 5) `webcam_init()`: create new webcam interface
- 6) `webcam_detect()`: detect the webcam. Choose the right driver for the webcam.
- 7) `get_video_devices()` : gets the information of video device on the system.
- 8) `get_video_device_data ()`: connects to video device and launches gstreamer functions to check if the video device is running. Also, `get_supported_framerates()`.
- 9) `create_video_display_bin ()`: A video output sink and may use some filtering of the raw video source.
- 10) `webcam_play()` : play the webcam.

Video functions:

- 11) `video_record()` : Record the captured video to a file.
- 12) `video_conversion()` : convert / compress using known techniques (mpeg/avi)

Mouse functions:

- 13) `mouse_signal_interface()` : captures mouse movements.
- 14) `mouse_on_click ()` : functions involving mouse clicks (or hover).

Radio Direction Finding (RDF) device functions:

- 15) `radio_device_detection()` : detects the RDF device.
- 16) `get_radio_signal()` : get the radio signal in the region. (frequency)
- 17) `get_signal_direction()` : azimuthal direction of the signal is obtained from the RDF device.
- 18) `convert_azimuthal_spatial_info()` : convert azimuthal direction of signal to real world 3D coordinates. (or x,y coordinates)

2-D graphics functions:

- 19) `cairo_draw_line()` : draw line between two points in an image buffer. (This draws the line based on `convert_azimuthal_spatial_info()`).