Market Research

Project: DNSS

Prepared by: JTM ABDULLAH KHALID

Phase 1: Research and Conceptualization - Conduct extensive market research to identify emerging trends and user needs. Define a set of artificial features, such as image recognition, augmented reality, and intelligent scene analysis, that align with consumer demands.

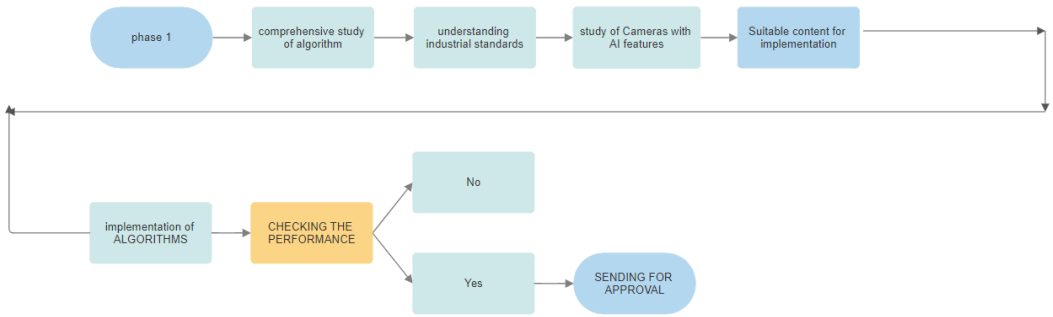
Phase 2: Design and Prototyping - Develop a detailed design incorporating the chosen artificial features. Create a functional prototype to test the integration of these features, ensuring seamless performance and user-friendly interfaces.

Phase 3: Testing and Optimization - Rigorous testing to evaluate the prototype's reliability, accuracy, and overall performance. Collect user feedback to identify areas for improvement, and optimize the camera's algorithms and software for enhanced functionality and responsiveness.

Phase 4: Manufacturing and Assembly - Scale up production based on successful prototype testing. Collaborate with manufacturing partners to ensure mass production meets quality standards while maintaining cost-effectiveness.

PHASE 1	**A.I features on pc**
PHASE 2	**Camera + platform**
PHASE 3	**Gimbal addition**
PHASE 4	**Multicamera addition**

Presented to: Dr. Aamir Irshad



Available resources.

Recommendations for new processors will be issued after comprehensive study.

Features

Model	ROCK (PI) 4A	ROCK (PI) 4B	ROCK (PI) 4C	ROCK (PI) 4A Plus	ROCK (PI) 4B Plus	ROCK 4 SE	ROCK (PI) 4C Plus
Processor	64bits hexa core processor Rockchip RK3399 Dual Cortex-72, frequency **1.8GHz** with qual Cortex-A53, frequency **1.4GHz** Mali T860MP4 gpu, support OpenGL ES 1.1/2.0/3.0/3.1/3.2, Vulkan 1.0, Open CL 1.1 1.2, DX11.			64bits hexa core processor Rockchip OP1 Dual Cortex-72, frequency **2.0GHz** wit h qual Cortex-A53, frequency **1.5GHz** Mali T860MP4 gpu, support OpenGL ES 1.1/2.0/3.0/3.1/3.2, Vulkan 1.0, Open CL 1.1 1.2, DX11.		64bits hexa core processor Rockchip RK3399-T Dual Cortex-72, frequency **1.5GHz** with qual Cortex-A53, frequency **1.0GHz** Mali T860MP4 gpu, support OpenGL ES 1.1/2.0/3.0/3.1/3.2, Vulkan 1.0, Open CL 1.1 1.2, DX11.	
Memory	LPDDR4 64bit dual channel LPDDR4@3200Mb/s, 1GB/2GB/4GB optioal						
Storage	eMMC connector µSD card (µSD slot supports up to 256 GB µSD card) M.2 SSD (M.2 connector			on board eMMC with up to 128GB variant available µSD card (µSD slot supports up to 256 GB		eMMC connector µSD card (µSD slot supports	eMMC connector µSD card (µSD slot supports up to

	supports up to 2T M2 NVME SSD)		µSD card) M.2 SSD (M.2 connector supports up to 2T M2 NVME SSD)	up to 256 GB µSD card) M.2 SSD (M.2 connector supports up to 2T M2 NVME SSD)	256 GB µSD card)
Display	Standard HDMI 2.0 up to 4k@60 MIPI DSI 2 lanes via FPC connector HDMI and MIPI DSI can work at the same time, support mirror mode or extend mode.	Mini DP up to 1440P@60 Micro HDMI 2.0 up to 4k@60 MIPI DSI 2 lanes via FPC connector HDMI and DP can work at the same time.	Standard HDMI 2.0 up to 4k@60 MIPI DSI 2 lanes via FPC connector HDMI and MIPI DSI can work at the same time, support mirror mode or extend mode.		One Micro HDMI 2K up to 1440P@60 One Micro HDMI 4K 2.0 up to 4k@60 MIPI DSI 4 lanes via FPC connector Only two of HDMI 2k, HDMI 4K and MIPI DSI can work at the same time.
Audio	3.5mm jack with mic HD codec that supports up to 24-bit/96KHz audio.				3.5mm jack HD codec that supports up to 24-bit/96KHz audio.
Camera	MIPI CSI 2 lanes via FPC connector, support up to 800 MP camera(1mm pitch connector).				MIPI CSI 2 lanes via FPC connector, support up to 800 MP camera(0.3mm pitch connector).
Wireless	None	802.11 ac wifi BT 5.0 with on board	None	802.11 ac wifi BT 5.0 with on board	802.11 ac wifi BT 5.0 with external

		antenna		antenna	antenna
USB	USB 3.0 OTG X1, hardware switch for host/device switch, upper one USB 3.0 HOST X1, dedicated USB 3.0 channel, lower one USB 2.0 HOST X2				
Ethernet	GbE LAN	GbE LAN with Power over Ethernet (PoE) support additional HAT is required for powering from PoE	GbE LAN	GbE LAN with Power over Ethernet (PoE) support additional HAT is required for powering from PoE	
IO	40-pin expansion header 2 x UART 2 x SPI bus 3 x I2C bus 1 x PCM/I2S 1 x SPDIF 2 x PWM 1 x ADC 6 x GPIO 2 x 5V DC power in 2 x 3.3V DC power in				
Others	RTC RTC battery connector for time backup(optional)				RTC None
Power	USB PD, support USB Type C PD 2.0, 9V/2A, 12V/2A. Qualcomm® Quick ChargeTM: Supports QC 3.0/2.0 adapter, 9V/2A, 12V/1.5A				USB C 5V/3A
Size	85mm x 54mm				