





Software Discovery Guide:

Software Functionality Targets to Enable the Community

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Software Functionality

Version 2022.08.12 Auth: D Malawey

nodered installed on viewing PC

nodered installed on embedded PC



F02 drag/drop Graphical programming

multiple bots in one (kinematics, of mobile manipulator OR other coupling of machines)

ROS Requires

OpenCV with Kinematics in Python + numPy



Node-RED

F03
Obstacle detection
& avoidance

Robot function has been accomplished without ROS

Install remoty, configure with selection of camera, speaker, wheels



realtime private or public/ sharing of telepresence with x number of user path plan before execution

Visualization of



So far, can only be achieved with ROS or advanced tools.

(Requiring Two computers, and Linux-based host PC)

Install hiveMQ & develop our own Topics Structure



M2M communication via Wifi – local AND worldwide

For beagle and PI – installed C9



Access file browser and command-line of robot, run programs without installing anything on Host PC

SLAM, with obstacle detection & realtime visual

Function Number 1700LS IMPLEMENTA

EROSRequires

Cayenne AKA "myDevices" open in web browser & receive MQTT messages



docking with a smart dock, reporting battery SOC



Viam Functionalities

- Content in progress!
- ► If you can't wait, visit VIAM's **Software Tutorials**
- ► The goal:
 - Use ANY ROBOT
 - Use ANY Processor
 - ► Easy config and program in your own language



Enabling the Community of Roboticists

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Robotics Softwares Used by SCUTTLE™ for Functionality

	•	Executed already?				
		Host PC				SCUTTLE Community
Software	Function	MINIMUM	Demo	Pi	Blue	TI Edge AI Needs:
NodeRed	drag/drop GUI build, telemetry	windows		3	3	0 equivalent on Edge AI
NodeRed	drag/drop graphical programming	windows		3	3	0 equivalent on Edge Al
NodeRed	send/receive MQTT graphical only	windows		3	3	0 equivalent on Edge Al
NodeRed	control from Phone	BROWSER		3	3	0 equivalent on Edge Al
NodeRed	control from Web Browser	BROWSER		3	3	0 equivalent on Edge Al
OpenCV	object detection	none		3	3	0 equivalent on Edge AI
OpenCV	docking by visual	none		3	3	0 equivalent on Edge Al
NumPy	kinematics	none		3	3	0 equivalent on Edge Al
Remo.tv	telepresence	windows		2	1	0 equivalent on Edge AI
HiveMQ	Broker	none		2	1	0 equivalent on Edge AI
Cloud9	Graphical IDE	windows		3	3	0 equivalent on Edge Al
Cayenne	M2M communication with GUI	BROWSER		1	1	0 equivalent on Edge AI
MQTT Raw	M2M communication	none		2	2	0 equivalent on Edge AI
ROS	Collaborating robtos in realtime	linux		1	1	1 ability without Linux Host
ROS	Visualization of path-plan	linux		1	1	1 ability without Linux Host
ROS	SLAM	linux		1	1	1 ability without Linux Host
Numpy	Obstacle detection (range-based)	none		3	3	0 equivalent on Edge AI
AWS	MQTT Broker, self-owned	windows		1	1	0 equivalent on Edge AI

