

Ralph 0.1 : Initial Architecture

Turnkey
Solution

Use Case Functionality

Active Patrol

Property Inspection

Border Security

Intelligent Automated
Security

Intelligent
Cloud
Back-End

HD-Map
Database

Artificial
Intelligence

Law-Enforcement
Database

Server

Data
Acquisition

Human User
Interfacing

Autonomous
Software
Platform

HD-Map Engine

Mapping

Localization

Perception

Planning

Controls

Teleoperation

Robotic Communications Middleware

Real-Time Operating System

Hardware
Development
Platform

Computing Unit

GPS/IMU

Camera

LiDAR

RADAR

Microphone

Sensor Unit

Robust Robotics
Platform

Robust Mobile Robotic Platform

Power Management

Hardware Safety