**Специфікація літального апарату на основі його апаратно програмного рішення**

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| Назва елемента | Призначення | Кількість |
| ArduPilot Mega APM2.5 | Управляючий контролер | 1 |
| MediaTek MT3329 GPS 10Hz v2 | GPS-навігатор | 1 |
| Ardupilot 3DR Radio Telemetry Kit 433Mhz | Приймач/передавач сигналу | 1 |
| FPV Camera - 720x480 High Definition CMOS 14g | Камера для відеозйомки | 1 |
| Arducopter 3DR-C Frame | Каркас для частин БПЛА | 1 |
| 10x45 Propeller Set Carbon Fibre Reinforced | Пропеллери (2шт.) | 2 |
| Brushless Motor 2212Q, 850Kv | Роторний мотор | 4 |
| 22A Multi-Rotor ESC (SimonK RapidESC) | Контролер швидкості | 1 |
| 3 cell lipo (11.1V) of at least 2200mah battery | Джерело живлення | 1 |

**Специфікація засобів для забезпечення функціонування мультиагентної системи**

ArduPilot Mega APM2.5

* Arduino Compatible!
* Comes pre-soldered (with straight pins) and tested.
* Includes 3-axis gyro, accelerometer and magnetometer, along with a high-performance barometer
* Onboard 4 MB Dataflash chip for automatic datalogging
* Digital compass powered by Honeywell's HMC5883L-TR chip, now included on the main board.
* Optional off-board GPS, Mediatek MT3329 or uBlox LEA-6H module
* One of the first open source autopilot systems to use Invensense's 6 DoF Accelerometer/Gyro MPU-6000.
* Barometric pressure sensor upgraded to MS5611-01BA03, from Measurement Specialties.
* Atmel's ATMEGA2560 and ATMEGA32U-2 chips for processing and usb functions respectively.
* Kit includes Telemetry cable, Micro USB cable, DF13 6 Position connector for the Power Module.

MediaTek MT3329 GPS 10Hz v2

* On-board battery
* Improved ground plane and board layout.
* The state-of-the-art 66 channels MediaTek MT3329 GPS Engine
* High sensitivity: Up to -165dBm tracking, superior urban performance
* USB/UART Interface
* Build-in patch antenna for optimal sensitivity
* DGPS(WAAS, EGNOS, MSAS) support (optional by firmware)
* Maximum update rate : up to 10Hz (optional by firmware)
* Based on MediaTek Single Chip Architecture.
* Dimension：38mm x 38mm x 7.8mm
* L1 Frequency, C/A code, 66 channels
* High Sensitivity：Up to -165dBm tracking, superior urban performances
* Position Accuracy：< 3m CEP (50%) without SA (horizontal)
* Low Power Consumption：48mA @ acquisition, 37mA @ tracking
* Low shut-down current consumption：15uA, typical
* Support AGPS function ( Offline mode : EPO valid up to 14 days )
* Includes a molex cable adapter, 10 cm
* Weight: 0.33oz; 9.45 g

Ardupilot 3DR Radio Telemetry Kit 433Mhz

* Very small size
* Light weight (under 4 grams without antenna)
* 433-434.79MHz
* Receiver sensitivity to -121 dBm
* Transmit power up to 20dBm (100mW)
* Transparent serial link
* Air data rates up to 250kbps
* MAVLink protocol framing and status reporting
* Frequency hopping spread spectrum (FHSS)
* Adaptive time division multiplexing (TDM)
* Support for LBT and AFA
* Configurable duty cycle
* Built in error correcting code (can correct up to 25% data bit errors)
* Demonstrated range of several kilometers with a small omni antenna
* Can be used with a bi-directional amplifier for even more range
* Open source firmware
* AT commands for radio configuration
* RT commands for remote radio configuration
* Adaptive flow control when used with APM
* Based on HM-TRP radio modules, with Si1000 8051 micro-controller and Si4432 radio module

FPV Camera - 720x480 High Definition CMOS 14g

* Sensor Type - CMOS
* Audio - No
* Resolution - 720x480 (HD)
* Power Input - 7V-12V
* Video Resistance - 75Ω
* Lens Angle - 90 Degrees
* Minimum illuminance - 2 LUX/ F1.2
* Video Frame Rate - 25fps
* Dimentions - 30x 30mm

Arducopter 3DR-C Frame

* 5x Aluminium quadcopter arm sone spare arm! (2x Blue, 3x Black)
* 2x center frame boards
* 2x carrier boards for mounting addional electronics
* 4x landing gear
* 1x Power Distribution board
* All required cables and signal cables for PDB-APM
* All screws and bolts required to assemble the frame (you will still require your own tools)

This Arducopter 3DR Quadcopter Frame does not include motors, esc, battery, Radio, or the Ardupilot Mega Autopilot.

10x45 Propeller Set Carbon Fibre Reinforced

* 1x 10x45 propeller carbon reinforced - Clockwise rotating
* 1x 10x45 propeller carbon reinforced - Counter-clockwise rotating
* Set of shaft adaptors

Brushless Motor 2212Q, 850Kv

* RPM/V - 850Kv
* No Load - 0.5A
* Internal Resistance - 0.142 ohms
* Lipo Cell - 2-4cell
* Max Current - 12.2A
* Weight - 65g
* Motor Diameter - 30mm
* Motor Length - 28mm
* Configuration - 12N14P

22A Multi-Rotor ESC (SimonK RapidESC)

* Input Voltage: 6-18.8 VDC, (2-4 Li-Pi cells)
* Input rate range: 50-400hz
* Output Current: 22A continous, 26A Burst
* BEC Output: 5V @ 2A
* Dimensions: 35x24x8mm
* Weight: 25g
* Immediate PWM input to PWM output for best possible multicopter response
* 16-bit output PWM with full clock rate resolution (~18kHz PWM with a POWER\_RANGE of 800 steps)
* 24-bit timing and PWM pulse tracking at full clock rate resolution
* Accepts any PWM update rate (minimum ~5microseconds PWM low time)
* Optimized interrupt code (very low minimum PWM and reduced full throttle bump)
* Extremely low output resistance for efficient operation
* 3-stage protection: Low Voltage Cutoff, Over-Heat Protection & Signal Loss
* Throttle endpoints are precisely pre-set at the factory for exact throttle function between all ESCs
* Smooth linear throttle operation for precise control
* High RPM capability: 210,000 (2-pole), 70,000 (6-pole), 30,000 (14 pole)

**Специфікація програмного забезпечення для реалізації мультиагентної системи**

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| **Програмне забезпечення** |
| APM Mission Planner |
| Arduino IDE |
| Eclipse IDE |
| JADE |